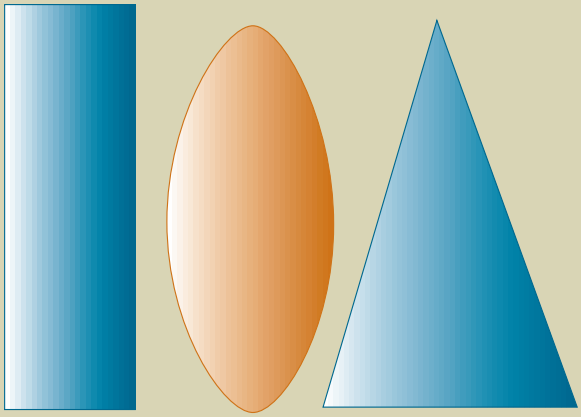
Offender Risk Assessment in Virginia

A Three-Stage Evaluation

Process of Sentencing Reform
Empirical Study of Diversion & Recidivism
Benefit-Cost Analysis



A National Institute of Justice Partnership Grant

The National Center for State Courts and
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VCSC

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Table of Contents

Executive Summary

The Risk Assessment Instrument developed by the Virginia Criminal Sentencing Commission (VCSC) has proven an effective tool for identifying, among nonviolent offenders, good can didates for diversion from incarceration. Higher "risk scores" on the instrument have been associated with a greater likelihood of recidivism, diversion through risk assessment has produced positive net benefits for the state, and judges and probation officers have found the instrument a useful addition to state sentencing guidelines. From this solid foundation, the VCSC has targeted programmatic improvements to further strengthen the risk assessment process.

The evaluation team at the National Center for State Courts (NCSC) conducted a thorough, systematic, and multi-method inquiry into a key question: *Is risk assessment at the sentencing stage a viable strategy for diverting nonviolent offenders?* We collected data and evaluated the risk assessment instrument during a three-year pilot test that tracked the success (as measured by recidivism) of a group of diverted offenders in six of Virginia's 31 judicial circuits: Fairfax, Norfolk, Newport News, Henrico, Danville, and Suffolk. The inquiry included evaluating multiple case and offender characteristics for all offenders sentenced and diverted between 1997-1999; on-site observations and interviews with judges, probation officers, prosecutors, and defense counsel; and gathering detailed information on the costs and benefits of diversion and recidivism.

Our goal with this evaluation is to help the VCSC decide whether to make the risk assessment program a permanent part of Virginia's sentencing guidelines system and expand it statewide. We believe that it should.

The VCSC designed the risk assessment instrument to identify, from among eligible larceny, fraud, and drug offenders who would otherwise be recommended for incarceration by state sentencing guidelines, offenders with the lowest probability of being reconvicted of a felony crime, and divert them to some form of alternative punishment. The VCSC found four general types of factors significant in predicting risk: offender characteristics and demographics, current offense information, prior adult criminal record, and prior juvenile contact with legal authorities. Eleven specific factors were incorporated into a risk assessment worksheet and each was given a score based on its relative degree of importance. A recommendation for diver-

sion is based on an offender's risk assessment point total, with all those scoring nine points or less on the instrument recommended for diversion.

The instrument, which is designed to be integrated into the state's sentencing guideline system, does not recommend any specific type or form of alternative punishment. The sentencing judge makes that decision at his or her discretion. Judges can follow the diversion recommendation or sentence in accordance with the original guidelines recommendation.

Findings and Recommendations

We employed three distinct, yet interrelated, analytic techniques to evaluate risk assessment in Virginia. *Part 1: Process Evaluation,* focuses on the process of developing the risk assessment instrument. *Part II: Empirical Study of Diversion and Recidivism,* examines the relationship between the risk assessment recommendation and the judicial decision to divert, and the success of the instrument in predicting recidivism. *Part III: Benefit-Cost Analysis,* goes beyond assessing whether the instrument "worked" in identifying offenders who pose a lower risk of recidivism, and clarifies the benefits and costs of making greater use of nonincarcerative sentences for nonviolent offenders. Here we will review the major issues and provide summary recommendations.

Process of Sentencing Reform

1 *Do judges and other justice system stakeholders perceive the risk assessment program as effective?*

The majority of judges and probation officers in the pilot sites felt that, given the goal of diverting offenders from prison, the risk assessment instrument was a good tool. Many judges indicated the instrument was useful in decision-making. They said it ensured consideration of factors relevant to assessing risk, whether or not they ultimately followed the recommendation. Probation officers liked the idea of an objective tool to assess offenders for diversion. They felt the instrument encouraged judges to rely on similar factors in considering offenders for diversion, and thus "leveled the playing field." On the whole, judges and probation officers recommended that risk assessment be taken statewide if the instrument effectively predicts recidivism and is cost effective. However, both groups asked that the demographic scoring factors be reexamined to ensure that they remain linked with higher rates of recidivism.

Prosecutors did not generally support programs designed to divert offenders from prison or jail. They tended to see alternative sanctions as best suited to first-time offenders deserving a second chance, usually in combination with probation. Most defense attorneys supported greater use of alternative sanctions—if imposed instead of incarceration. Many were concerned

about "net widening," that risk assessment might lead to increasing the average number of sanctions per offender and/or increased surveillance.

2 *Does risk assessment adversely affect judicial discretion?*

Most judges viewed risk assessment as a complement to the sentencing guidelines, and did not believe it infringed on judicial discretion. Furthermore, none of them were opposed to having the instrument available. Several judges added that they ultimately retain discretion because the system is voluntary. Judges sentenced in accord with the risk assessment recommendation in roughly two of every three cases. Why judges didn't follow the recommendation in many cases remains something of a mystery. Few judges provided the VCSC with rationales for their recommendations.

Recommendation: Provide a feedback mechanism for judicial agreement with the risk assessment instrument. Encourage judges to articulate reasons for not following the instrument's recommendation.

3 *Does using the risk assessment instrument increase the workload of probation officers?*

Accurate scoring of the risk assessment instrument is critical to the success of the program. Field personnel indicated that the single most important factor for ensuring scoring accuracy is an up-to-date presentence report (PSI). Without exception, probation officers found the risk assessment instrument quick and easy to complete with a PSI. Probation officers indicated their greatest concern is the accuracy of scoring the offender's prior record. They also found offenders' juvenile records very difficult to verify without a PSI.

Recommendations: Because of the clear connection between accurate worksheet completion and high presentence report (PSI) rates, efforts should be made to either increase PSI rates or to gather criminal history data that match the completeness and quality in a PSI. Increasing linkages among existing and new justice system databases using an Offense Tracking Number (OTN) is also encouraged to support more accurate worksheet completion. The VCSC should be available to provide ongoing risk assessment training and education in the pilot sites and to new sites if the program is expanded.

4 *Should risk assessment recommendations be more specific?*

The current risk instrument indicates only whether an offender is a good candidate for diversion. Could the VCSC modify the instrument so that it recommends specific alternatives? For example, given a specific offender profile, might the instrument specify a particular sanction, such as boot camp, diversion center, alcohol treatment, or ISP? Many judges felt that, in theory, revising the instrument so that it provided a more specific recommendation might be a logical expansion of the concept. But most also said that the Department of Corrections or

probation officers are best positioned to determine the most appropriate alternatives or services for offenders because they are already required to assess individuals for specific programs.

Recommendation: Continuing effort should be made to educate judges and probation officers as to the purpose and rationale of the current risk assessment instrument. This should include a review of the current Risk-Needs Assessment conducted by DOC staff.

5 *What is the relationship between "risk assessment" and "needs assessment?"*

The VCSC must distinguish between *risk* and *need* in developing and implementing any offender assessment tool. The VCSC risk assessment instrument was designed to assess an offender's *risk* to public safety. It was not designed to gauge the *needs* of individual offenders, or recommend a specific alternative punishment. This is the task of needs assessment, which identifies offenders' needs and matches offenders to programs designed to address those needs.

The VCSC decided to leave offenders' needs requirements to judges, attorneys, and probation officers. The Commission believes that probation officers, and others from DOC, are in the best position to evaluate needs. The DOC currently conducts a *Risk-Needs Assessment* during an offender's first contact with the probation office upon leaving court or exiting a facility (detention, jail, prison).

Recommendation: Continue to educate judges and probation officers on the purpose and rationale of the current risk assessment instrument. This should include reviewing the current Risk-Needs Assessment conducted by DOC staff.

6 *Are alternative punishments and a continuum of sanctions sufficiently available in the pilot sites?*

For the vast majority of offenders diverted in Virginia, "alternative sanction" means serving time in jail, and/or some form of probation. In fact, the most frequent sanction, given to approximately 39 percent of offenders in our pilot study, was a "package" of jail, supervised probation and court costs. The sanctions between jail and probation were less frequently imposed. For example, only 14 percent of offenders were sentenced to diversion centers, only 8 percent to work release, and just 6 percent to inpatient drug/alcohol treatment.

During interviews in several pilot sites, many judges said that jails offer a wide range of sanction alternatives. They easily cited substance abuse counseling, anger management sessions, intensive addiction and dual diagnosis treatment programs, GED programs, religious groups, work release, and other programs available in local jails. Judges said they liked knowing offenders would receive services at the local level that are not guaranteed in the state system. In short, judges believed there is a continuum of sanctions, but they also believed that jail offered offenders the types of programs typically associated with other sanctions.

Recommendation: Given judicial interest in making alternative sanctions available, we should continue to educate judges about the full complement of services and special programs available to offenders at the local and state levels. Judges need to know what types of services

offenders receive from local sanctions (like jail) and state programs (like detention and diversion centers). The VCSC should educate judges about the specific types of services available in state level alternative programs. The VCSC should also continue to articulate VCSC policies about which alternatives constitute diversion. One option is a "quick table" that lists sanctions we consider diversions given the guidelines recommendation.

7 *Does risk assessment affect the interaction among judges, probation officers, and attorneys inside or outside the courtroom?*

According to the majority of people we interviewed, most discussion about risk assessment occurred during the initial implementation and training period. Since, most agreed, there has been very little discussion with judges about risk assessment recommendations. The only time details of the various sentencing guideline worksheets, or the risk assessment instrument, are discussed is when a scoring mistake is suspected. Judges rely primarily on the guideline summary and sentencing recommendation of the guidelines coversheet. When discussions do occur, they tend to focus on the sentence recommendations of the guidelines coversheet.

8 *How is the scoring of young, unemployed, unmarried males on the risk assessment instrument viewed by the court community?*

One of the primary concerns of judges and probation officers is the difficulty many young males have qualifying for alternative punishment. Unemployed, unmarried, males under age 20 begin with a score of nine points, and any additional points render them ineligible for a diversion recommendation. Judges and probation officers know that VCSC research shows this type of offender has a high rate of recidivism, but they also believe this is the group most in need of services.

The VCSC deliberated at length about how to treat factors related to age, gender, employment, and marital status. The Commission concluded that these factors should remain on the worksheet, since they relate to higher rates of recidivism. They did not want to promote an instrument that recommended high-risk offenders for diversion. The Commission decided to offer the recommendation based solely on *risk assessment*, and let judges choose whom to divert on an individual basis, since the instrument is voluntary.

Empirical Study of Diversion and Recidivism

9 *Which factors on the risk assessment instrument were associated with judges' decisions to divert?*

Of principal importance is the finding that offenders with lower total risk scores are more likely to be diverted than offenders with higher scores. Judges tended to agree that better candidates for diversion had lower total risk scores. On the other hand, judges used only a handful of factors on the risk assessment instrument consistently in making the decision to divert. Those

factors most consistently used related to aspects of the offender's age and prior record. Moreover, while the risk assessment was designed to apply uniformly across eligible offense types, we found that fraud offenders were most likely to be diverted, and larceny offenders least likely.

10 *Is the total risk score positively correlated with the likelihood of recidivism?*

The total risk score—calculated by adding the scores of the 11 factors on the risk assessment instrument—has proven significant in predicting recidivism. As total risk score rises, so does the likelihood of recidivism, whether we measure recidivism by new arrest or new arrest resulting in conviction.

11 *Do the individual factors on the risk assessment instrument effectively predict recidivism? Should the VCSC consider removing or adding factors?*

Our evaluation indicated that only gender and factors related to prior record effectively predict recidivism. We found that the other demographic factors (employment status; marital status; and age of offender) and contemporaneous factors (offender alone and additional offenses at time of offense) were not significantly related to recidivism. While the type of primary offense is not included as a discrete factor on the instrument, it was found to be a useful factor for understanding recidivism, as measured by a new arrest. It should be noted that three of the factors we found related to recidivism—total risk score, prior offense score, and type of primary offense—we also found significant in judicial decisions to divert.

Recommendation: The VCSC should explore introducing offense type as a distinct scoring element, and examine the possibility of streamlining the risk assessment instrument to include only gender, age, prior record, and offense type factors. The VCSC should reconsider the utility of several controversial factors (employment status, marital status, prior juvenile adjudications) and others found insignificant in predicting recidivism (offender alone and additional offenses).

12 *Is the nine-point threshold the most appropriate demarcation of risk?*

A critical component of our risk assessment instrument is the threshold score, which differentiates high risk offenders from low risk. Currently that threshold is set at nine points. Statistical analysis shows that raising the threshold would increase the number of offenders eligible for diversion, and the number who recidivate. However, the percentage of offenders who recidivate remains relatively constant as the threshold rises. Raising the threshold is a policy decision contingent upon levels of acceptable risk and recidivism.

Of course, changing the content of the instrument (e.g., adding or dropping factors, changing scoring values) would necessitate reevaluating the threshold score. If none of the factors on the worksheet are removed or adjusted and no new factors added, raising the threshold from its present level of nine will immediately increase the number of offenders recommended for diversion.

Recommendation: If the VCSC decides to add, remove, or adjust factors on the risk assessment instrument, the threshold should be reevaluated. Whether or not adjustments are made, the VCSC can raise the threshold to allow more persons to be eligible for diversion. However, adjustments to the threshold must be based not only on empirical assessment, but also on policy decisions that address acceptable levels of risk to public safety.

Benefit-Cost Analysis

13 *Has the risk assessment pilot project been cost effective? Would statewide expansion of the program result in a net benefit or cost to Virginians?*

An important measure of the success of risk assessment is whether diverting offenders to alternative sanctions provided net benefits to the citizens of Virginia. In the six pilot sites, our analysis showed a net benefit of $1.2 million. A majority of the benefits accrued to the Commonwealth (through reduced corrections expenditures), while localities bore the bulk of the costs of funding alternative programs. If the risk assessment program had been in place statewide in 2000, we estimate that net benefit would have been between $2.9 and $3.6 million.

We found that the state accrued $7.9 million in benefits, all from eliminating prison sentences for diverted offenders. Placing offenders in alternative sanctions cost the state over $2.1 million. Reincarcerating recidivist offenders accounted for another $0.7 million in costs, borne almost entirely by the Commonwealth. Additionally, the state transferred approximately $2.3 million to localities to offset local jail costs. These transfer payments amounted to 58 percent of jail costs accrued by localities. Thus, the Commonwealth of Virginia accrued a net benefit totaling $3.1 million.

Costs to localities and crime victims offset much of the total net benefit. Locally funded alternative sanctions and reincarceration costs, discounted by state transfer payments, cost over $1.9 million. Local benefits, totaling $300,000, were modest. Thus, localities had a net cost of $1.7 million. Moreover, some diverted offenders did recidivate. We estimated that $266,000 in potentially avertable costs accrued to victims of crime because of diverted offenders who recidivated.

Recommendation: Policymakers should be informed that while the Commonwealth of Virginia experiences a net benefit of $3.1 million, localities face a cost of $1.7 million as a result of diversion. Many of the diversion programs are funded locally, but many of the monetary benefits accrued to the state. Overall, the net benefits of implementing diversion suggest that the program is worthwhile, and that statewide implementation would be cost effective.

Conclusion

The NCSC evaluation team believes that the risk assessment instrument is successful in identifying low risk candidates for diversion. Risk assessment was well received in the pilot courts by judges and probation officers. The instrument proved easy to complete when a PSI was available. Finally, this program lead to cost savings for the Commonwealth without jeopardizing the safety of its citizens.

The NCSC concludes that the theoretical framework and statistical analyses used to construct the risk assessment instrument were well conceived and employed. The Commission and staff deserve recognition for their groundbreaking work.

Recommendation: Following a revalidation of the factors included on the risk assessment instrument, the program should be expanded statewide.

1 Introduction

The Virginia General Assembly abolished parole and restructured the state's voluntary sentencing guidelines during a special session in 1994. The restructuring introduced Truth-in-Sentencing (TIS), a reform designed to substantially increase prison terms for violent offenders and those with a record of prior violent offenses.[1] At the same time, the General Assembly required the newly formed Virginia Criminal Sentencing Commission (VCSC) to study those incarcerated for nonviolent crimes, and assess the feasibility of placing 25 percent of nonviolent offenders in alternative sanctions based on a risk assessment instrument that identifies offenders with the lowest risk to public safety.

A major concern during the 1994 debate was the prospect that TIS would dramatically increase prison populations and state expenditures on corrections.[2] While it was generally acknowledged that costs associated with housing *violent* offenders would rise under TIS, legislators asked if alternative sentencing strategies might be an effective, cost-efficient way to punish *nonviolent* felons. The primary issues were whether the use of intermediate sanctions, in lieu of traditional incarceration, effectively protect public safety and, if so, whether alternative sanction programs are cost effective. Given the uncertainty on these issues, lawmakers drafted language (Code of Virginia §17-235) charging the VCSC with the following:

- Prepare guidelines that sentencing courts can use to determine appropriate candidates for alternative sanctions.
- Develop an offender risk assessment instrument for use in felony cases, based on a study of Virginia felons, which will predict the relative risk that a felon will become a threat to public safety.

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[1] The Virginia General Assembly passed truth-in-sentencing legislation in 1994. These new sentencing laws implemented a major restructuring of the state's existing system of sentencing and parole. The reforms, which went into effect on January 1, 1995, were designed to achieve four objectives: (1) Increase prison sentences for violent and repeat offenders; (2) Abolish parole; (3) Reduce "good time" allowances so as to insure that inmates serve 85 percent of their imposed sentence; and (4) Divert up to 25 percent of select nonviolent prison bound offenders to alternative sanctions. The abolition of parole and the restructuring of good time were accomplished by statute. Changes to sentencing recommendations, both incarceration and diversion, were handled through a thorough restructuring of the state's system of sentencing guidelines. For a complete review and evaluation of Virginia's move to TIS, please see Ostrom et al. *Truth-in-Sentencing in Virginia: Evaluating the Process and Impact of Sentencing Reform*, National Center for State Courts, 1999 (NIJ Grant 96-CE-VX-0005).

[2] Ibid.

- Apply the risk assessment instrument to nonviolent felony offenders, and, with due regard for public safety, examine the feasibility of placing 25 percent of such offenders into alternative sanction programs.

The VCSC interpreted the directive from the legislature to mean diverting *25 percent of nonviolent offenders who would otherwise receive incarceration* to alternative punishments.

Purpose of the Evaluation

The National Center for State Courts, with funding from the National Institute of Justice, conducted an independent evaluation of the development and impact of the risk assessment instrument. The purpose of the risk assessment instrument is to identify, among nonviolent offenders, good candidates for alternative sanctions. "Good candidates" are offenders whose profile—based on the risk assessment score—suggests they pose a minimal risk of recidivating. The utility of the risk assessment instrument is being evaluated by tracking the success (as measured by recidivism) of a group of offenders, drawn from among 5,158 drug, fraud and larceny cases resolved in six pilot jurisdictions in Virginia between December, 1997 and September, 1999, sentenced to alternative punishment. Because the six pilot sites began using the instrument at different times (between December, 1997 and March, 1999), the analysis tracked offenders for periods varying from one to three years, with an average follow-up of two years. The purpose of the evaluation is to help the VCSC decide whether to expand the risk assessment program statewide and make the instrument a permanent part of Virginia's sentencing guidelines system. This is the first comprehensive evaluation of risk assessment and intermediate sanctions, and what effect they have on the criminal justice system. An explicit and structured process for diverting nonviolent offenders from expensive prison space to less costly alternative punishments has potential as an appropriate path to more efficient use of correctional resources. The success of the risk assessment model in Virginia depends on the ability to accurately distinguish high risk from low risk offenders, and the criminal justice community accepting and using the instrument.

The central substantive question facing the VCSC is:

Which nonviolent felony offenders are at low risk of re-offending and can thus be safely placed in alternative sanction programs?

The focus of this evaluation is the effectiveness of the initial VCSC risk assessment instrument in answering this question. Effectiveness is gauged through an integrated three-step approach: (1) a thorough examination of the process used to create the risk assessment instrument, coupled with extensive interviews to assess the use and acceptance of the instrument by key actors in the criminal justice system, including judges, legislators, corrections officers, probation officers, Commonwealth attorneys, and defense counsel; (2) a comprehensive statistical analysis of the instrument's ability to accurately distinguish offenders with a high risk of recidivating from those with a low risk; and (3) the use of benefit/cost analysis to measure the scope of net benefits to the citizens of Virginia from the increased use of diversion. By clarifying the instrument's effect on judicial decision-making, sentencing outcomes, and criminal justice sys-

tem resources the partners believe that this evaluation will provide a reasoned perspective on whether the risk assessment instrument should be expanded statewide.

Evaluation Design and Organization

This evaluation employs a broad and diverse set of descriptive and analytic techniques to better understand risk assessment in Virginia. Given the scope of analysis, the substantive portion of the evaluation divides into three distinct, yet interrelated, parts.

Part I: Process Evaluation

The focus of Chapters 2, 3 and 4 is the development of the risk assessment instrument. Chapter 2 defines the basics of risk assessment in Virginia, Chapter 3 describes the statistical approach used to construct the instrument, and Chapter 4 discusses the preliminary results of the pilot study.

Part II: Empirical Study of Diversion and Recidivism

Chapter 5 provides policymakers with evidence of how judges use the risk assessment instrument to make diversion decisions, and which factors in the instrument most explain the incidences and timing of recidivism.

Part III: Benefit-Cost Analysis

Chapter 6 uses benefit/cost analysis to identify the various benefits and costs of risk assessment and alternative sanctions in Virginia.

By way of conclusion, each of the three parts—the process evaluation, the diversion and recidivism study, and the benefit-cost analysis—ends with a summary of the principal issues, as well as recommendations of the evaluation team. Relevant literature reviews and explanations of analytic techniques have been placed in sidebars throughout the chapters.

Finally, the Executive Summary provides a comprehensive overview of the complete report. This section summarizes the major issues raised in all three parts and provides a complete list of recommendations.

The evaluation can be used in several different ways. Readers interested in a "quick scan" can examine the primary results, issues, and recommendations in the Executive Summary. Chapters 2 and 3 are an in-depth introduction to risk assessment in Virginia, and readers familiar with Virginia's approach may wish to simply review these chapters. Those seeking a comprehensive understanding of risk assessment in Virginia will want to read the descriptive results of the pilot study (Chapter 4), the study of diversion and recidivism (Chapter 5) and the benefit/cost analysis (Chapter 6). However, each of these latter three chapters is designed as a self-contained analysis, and can be read without reference to the others.

Overview of Risk Assessment in Virginia

The primary mission of this evaluation is to assess whether risk assessment at the sentencing stage is a viable strategy for diverting nonviolent offenders while minimizing threats to public safety. The score obtained from a risk assessment instrument, prepared at the time of the pre-

sentence investigation report for the sentencing judge, guides decisions about diversion. The instrument was pilot tested in six of Virginia's 31 judicial circuits: Fairfax, Norfolk, Newport News, Henrico, Danville (including Franklin and Pittsylvania counties), and Suffolk (including Isle of Wight and Southampton counties and the City of Franklin).

The risk assessment instrument complements the TIS guidelines introduced in 1995. For eligible larceny, fraud, and drug offenders recommended for jail or prison terms under the guidelines (probation cases are not considered for diversion), an additional set of factors determine whether the offender is a good risk for an alternative punishment. VCSC found 11 statistically significant factors in predicting recidivism, and assigned scores that reflect their relative importance. Each factor is scored separately and the sum provides the overall risk score. Age, prior record, and prior juvenile incarceration are most heavily weighted. The VCSC considered and rejected including the offender's race on the instrument. Although race was strongly significant in the analysis, the Sentencing Commission viewed race "as a proxy for social and economic disadvantage," and decided to exclude it from the risk assessment worksheet.

The total score on the risk assessment instrument estimates the likelihood that an offender will be reconvicted of a felony within three years. Offenders scoring the lowest number of points on the instrument are considered less likely to be reconvicted of a felony than offenders with a higher score.

Offenders with any current or prior convictions for violent felonies,[3] and offenders selling an ounce or more of cocaine, are excluded from risk assessment consideration. For eligible offenders, a total score of nine or less translates into a recommendation to divert, while for a score over nine the recommendation for incarceration remains unchanged (drawing the threshold at nine achieves the 25 percent diversion goal while minimizing recidivism rates). The instrument does not recommend any specific type or form of alternative punishment. That decision is left to the discretion of the sentencing judge. In addition, judges have the option to follow the diversion recommendation, or sentence in accordance with the original guidelines recommendation. Judges are in compliance with the guidelines no matter which option they choose.

Benefits of the Evaluation

This evaluation is designed primarily to benefit Virginia policymakers and practitioners interested in an objective analysis of judicial risk assessment. However, given the wide interest in the design and use of empirically based risk assessment, there is likely to be considerable national interest in Virginia's experience. For example, other states contemplating risk assessment to divert "low risk" offenders may benefit from our analytic approach to the study of recidivism, our efforts to explain and clarify the interpretation of the statistical results, and the framework we used to conduct the benefit-cost analysis.

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[3] Code of Virginia §17.1-803

But desired objectives are not necessarily workable solutions. Sound analysis may help policymakers accurately evaluate whether a sentencing policy alternative will, in fact, accomplish the desired outcome. Understanding how risk assessment was implemented in Virginia, as well as practitioners' views on its effectiveness, may help others advocate policies compatible with their objectives. Hence, this evaluation was designed and written to clarify how sentencing reform efforts could be improved if initiated in other states.

NCSC/VCSC Evaluation Partnership

This evaluation builds on a successful partnership between the Virginia Criminal Sentencing Commission and the National Center for State Courts. This research partnership melds state of Virginia practitioners (including field officials from the Department of Corrections, the sentencing commission staff, and the sentencing commission members themselves) with researchers and consultants from the NCSC to conduct the type of research, analysis, and evaluation needed to implement sound sentencing and corrections policies at state and local levels. The partners worked successfully in past years studying the development of Virginia's existing sentencing guidelines model, and examining the impact of truth-in-sentencing.

The VCSC explicitly desired a neutral, independent evaluation of the methods used to create the risk model. While the partners worked together to conceptualize the evaluation, the NCSC team had a free hand in conducting the actual evaluation. This report was prepared by the NCSC, and the opinions and viewpoints expressed do not necessarily reflect the official position of the VCSC or the state of Virginia.

2 Risk Assessment Basics: The Virginia Model

Who is eligible for risk assessment?

The risk assessment instrument is designed to identify offenders likely to present the lowest risk to public safety. Judges are asked to view the risk profile as an additional source of information during sentencing.

Enabling legislation and direction from the Virginia Criminal Sentencing Commission (VCSC) provided the criteria for determining which offenders are eligible for risk assessment. The legislation, which called for diverting 25 percent of property and drug offenders to alternative sanctions, was ambiguous, as more than 25 percent of such offenders already receive sentences, such as probation, that do not involve incarceration. The VCSC thus interpreted the legislation to mean diverting *25 percent of property and drug offenders who would otherwise be incarcerated* to alternative sanctions. The legislation also mandated the VCSC develop an empirically based risk assessment instrument to identify offenders with the lowest risk to public safety. Legislators specified that certain types of offenders, namely those with a past or present conviction for a violent felony, be excluded from consideration for diversion.[4]

The VCSC made three further decisions that affect eligibility for risk assessment. First, the legislation called for redirecting felons from *prison* to alternative punishment programs. The VCSC decided to focus on diversion from *incarceration*. Therefore, the pool of eligible felons was expanded to include all offenders recommended for incarceration, including both prison and jail. Second, the Commission decided to exclude drug offenders convicted of selling an ounce or more of cocaine. Third, eligibility for risk assessment was restricted to three types of offenses: drug, fraud, and larceny. Given that many drug, fraud, and larceny offenders, especially first timers, would receive probation, risk assessment targeted only those offenders recommended for incarceration.

Risk assessment eligibility is thus restricted to drug, fraud, and larceny offenders of intermediate seriousness. The offender's current conviction (perhaps in combination with prior history) must be serious enough to warrant a recommendation of incarceration, so few will be first time offenders. On the other hand, their current offenses and/or prior history cannot involve any violent crimes, nor can their current offense involve the sale of an ounce or more of

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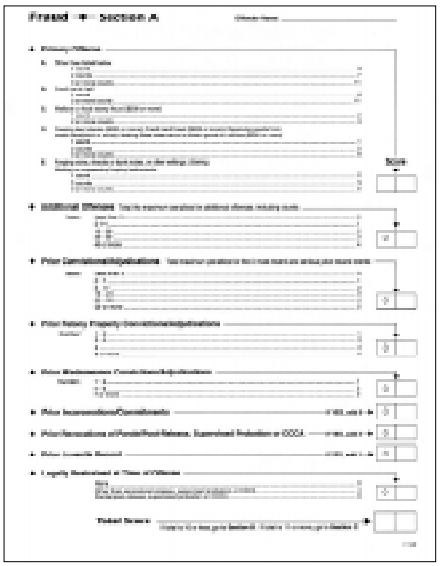
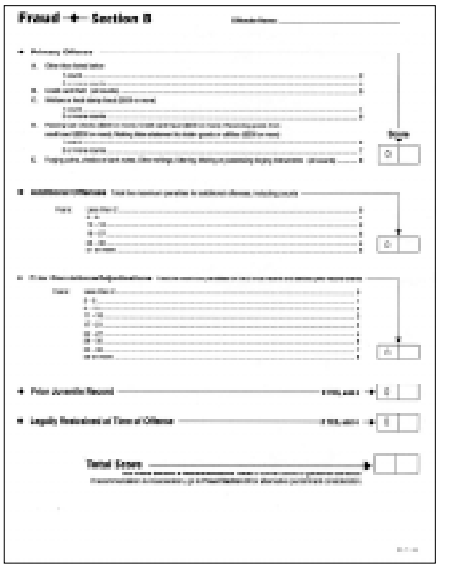
[4] The set of felony crimes excluded from consideration for risk assessment is specified in (i) subdivision 1, 2, 3 of subsection A of 17-237 and (ii) subsection C of 17-237 of the Code of Virginia.

Figure 2.1
Guideline's Worksheet A, B, C, D

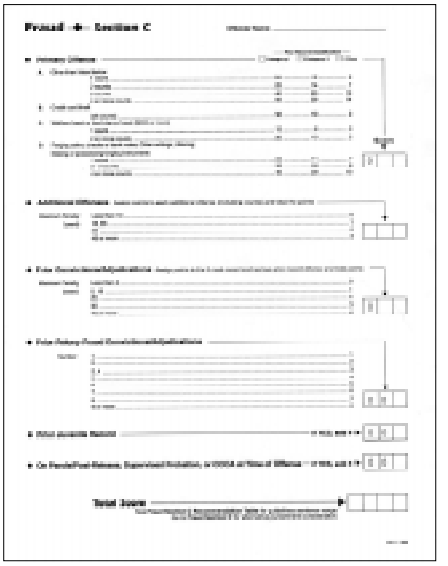
A



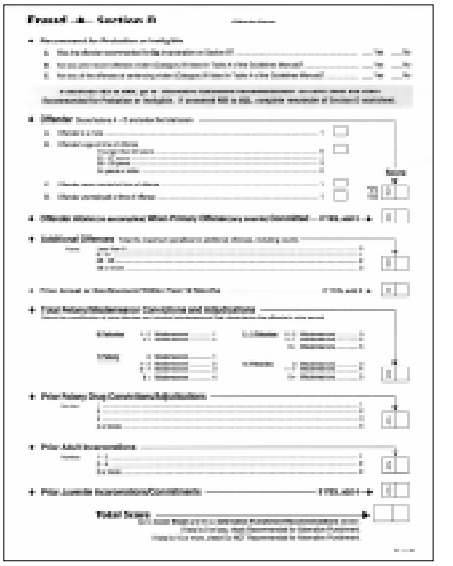
B



C



D



For a larger view of the Risk Assessment Form (Worksheet D), see Appendix D.

Note: Worksheet D remains the same for drug, fraud, and larceny while Worksheets A, B, and C (guidelines worksheets) vary among case types. Frud is shown for illustration purposes.

cocaine. An offender is deemed diverted if the guidelines recommend *prison* and the judge imposes a sentence of jail, alternative punishment, or probation, or the guidelines recommend *jail* and the judge imposes a sentence of alternative punishment or probation.

How does risk assessment fit within Virginia's structured sentencing system?

Virginia's Truth-In-Sentencing (TIS) guidelines provide judges with a sentencing recommendation prior to each felony sentencing event covered by the guidelines. The risk assessment instrument is designed to be an integral part of the TIS guideline system, but is not intended to supplant the guidelines.

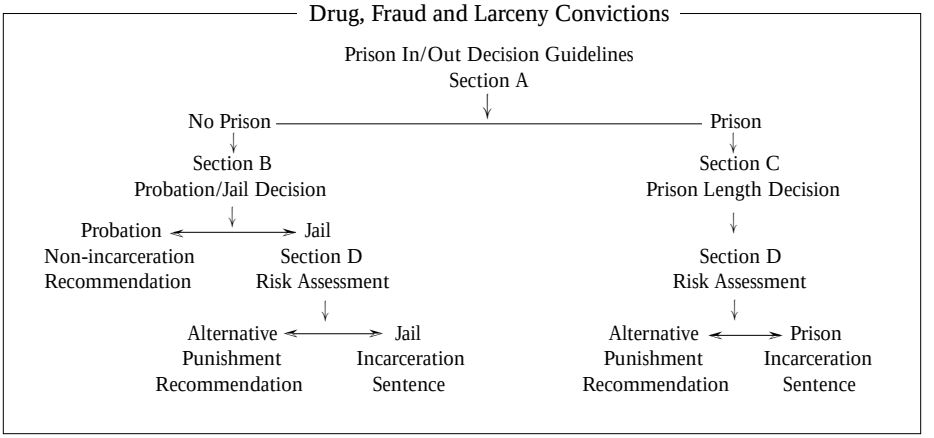
The risk assessment instrument is designed to identify offenders, otherwise recommended for incarceration by the sentencing guidelines, with the lowest probability of being reconvicted of a felony crime. These offenders are then recommended for some form of alternative punishment. Risk assessment is incorporated within the current sentencing guidelines system as an additional worksheet, known as Section D. Probation officers and Commonwealth's attorneys fill out the worksheet when the primary offense is a drug, fraud, or larceny charge, and the recommended sentence under the current guidelines includes incarceration.

Section D is the last of four integrated worksheets:

- *Section A*: determines whether an offender receives a prison or nonprison recommendation.
- *Section B*: determines whether an offender is recommended for probation or jail (if a nonprison sentence is recommended on Section A).
- *Section C*: determines the length of prison sentence (if a prison sentence is recommended on Section A).
- *Section D*: Risk Assessment Instrument.

The Section A, B, C, and D worksheets are displayed to the left; below is the typical path to risk assessment.

Figure 2.2
Sentencing Guidelines and the Path to Risk Assessment



Source: VCSC 1997 Annual Report

A recommendation for diversion is based on the risk assessment point total. All eligible offenders scoring nine points or less on the instrument are recommended for diversion. Section D results are presented to the judge, along with the sentencing guidelines recommendation from either Section B or C. In addition to the individual section worksheets, the sentencing recommendations are summarized on a fifth form, the guidelines coversheet. Judges have the option of following the diversion recommendation or sentencing in accordance with the original guidelines recommendation.

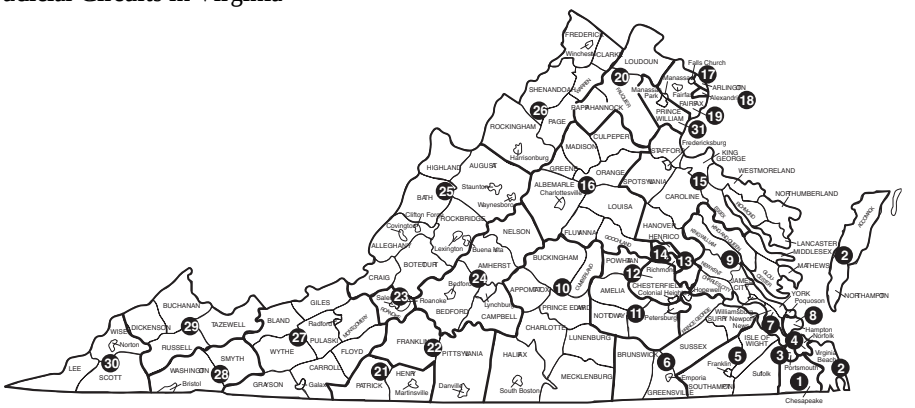
Judges are in compliance with the guidelines if they follow the recommendation for diversion or the original guidelines recommendation. Judges are asked to provide reasons for foregoing alternative sanctions when offenders are recommended for but not sentenced to an alternative. The VCSC views the reasons cited by judges during the pilot project as an important source of feedback on the use and acceptance of risk assessment.[5]

How is the utility of risk assessment being assessed?

The purpose of pilot testing was to document the instrument's effect on judicial decision-making, sentencing outcomes, and criminal justice system resources.

The risk assessment instrument is currently used in six of Virginia's 31 judicial circuits: Fairfax, Norfolk, Newport News, Henrico, Danville, and Suffolk. On December 1, 1997, Circuit 5 (the cities of Franklin and Suffolk and counties of Southampton and Isle of Wight),

Figure 2.3
Judicial Circuits in Virginia



Source: VCSC 1997 Annual Report

[5] Preliminary results show that judges do not cite a reason for choosing traditional incarceration instead of an alternative sanction in nearly two-thirds of cases that do not follow the risk assessment recommendation. When a reason was cited, judges most often questioned the offender's medical or psychological suitability, or referred to the offender's refusal to participate in alternative punishment programming (9 percent). Other reasons for sentencing offenders to incarceration included the offender's criminal lifestyle or history of criminality, or the offender's previous conviction for the same crime as the instant offense (7 percent). In other cases, judges perceived the quantity or purity of the drug involved in the case to warrant traditional incarceration (4 percent).

Circuit 14 (Henrico), and Circuit 19 (Fairfax) became the first circuits to use the risk assessment instrument. Circuit 22 (the city of Danville and counties of Franklin and Pittsylvania) joined the pilot project three months later. The pilot project was expanded to include Circuit 4 (Norfolk) and Circuit 7 (Newport News) in March of 1999 because the volume of eligible cases in the four original jurisdictions was lower than originally estimated. The results from the pilot experience will determine if statewide implementation of the risk assessment instrument is worthwhile, and enable the Commission to modify the program as necessary.

The six pilot sites were chosen to meet several goals. First, the VCSC believed it was important to select jurisdictions where caseloads were large enough to draw valid conclusions on the application of the risk assessment instrument. Fairfax, Norfolk, Henrico, and Newport News are four of the eight largest judicial circuits in Virginia, and preference was given to larger circuits because state programs tend to be located closer to population centers. Second, the availability of alternative punishment options was an important determinant. Finally, and perhaps most importantly, judges in the pilot jurisdictions more regularly order presentence investigation (PSI) reports. Equitable use of the risk assessment instrument, and correct scoring of Section D, requires the ready availability of complete and accurate information on the offender's current status and prior criminal record. PSI completion rates are in excess of 70 percent in the six pilot circuits, compared to a statewide average of 54 percent. Currently, the rate of PSI completion is set locally, and PSIs tend to be ordered in more serious, violent felony convictions but inconsistently produced for nonviolent offenders. Given that nonviolent property and drug offenders are the target population for risk assessment and alternative sanctions, successful statewide implementation of the program would require many circuits to substantially increase rates of PSIs.[6]

What sentences constitute "alternative punishment" and are counted toward meeting the goal of diverting 25 percent of eligible offenders?

The legislature outlined a wide range of punishments as appropriate candidates for alternative sanction, from unsupervised probation to traditional incarceration. In practice, anything short of a prison sentence qualifies.

The legislature stipulated "appropriate candidates for alternative sanctions which may include, but are not limited to (i) fines and day fines, (ii) boot camp, (iii) local correctional facility incarceration, (iv) diversion center incarceration, (v) detention center incarceration, (vi) home incarceration/electronic monitoring, (vii) day or evening reporting, (viii) probation supervision, (ix) intensive probation supervision, and (x) performance of community service."[7] The statute specifies qualifying state operated programs (e.g., detention centers, diversion centers, and boot camp), but is vague on the applicability of locally sponsored alternatives. The VCSC

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[6] Those completing the risk assessment instruments do not report increased workloads. The current evaluation found that probation officers and attorneys felt any increases in workload were negligible, if present at all.

[7] Section 17-235, Code of Virginia

includes in its definition of alternative punishments a broad range of local programs, many of which are administered by community services boards, including drug and alcohol treatment programs, halfway houses and residential facilities, and job training or release programs. Therefore, for practical purposes, anything short of an actual state prison sentence qualifies as an alternative sanction.

To be specific, an offender who is eligible for risk assessment is considered "diverted" if:

- Sentencing guidelines recommend *prison* and the offender is sentenced to jail, a state or local alternative punishment, and/or probation.
- Sentencing guidelines recommend *jail* and the offender is sentenced to a state or local alternative punishment, and/or probation.

The key is that the offender is recommended for incarceration by the guidelines, but does not receive a prison sentence (if recommended to prison) or a jail sentence (if recommended to jail).

Alternative Sanctions in Virginia

Intensive Supervision Program (ISPs)

Intensive Supervision in Virginia involves enhanced surveillance of offenders through increased contacts with the offender and in the community. ISP includes random urinalyses, home electronic monitoring, telephone monitoring, curfews, treatment agency referrals and follow-up, and employment and home checks. Upon completion of ISP, offenders are returned to conventional supervision. Eligibility requirements for ISP include higher risk offenders who require supervision more stringent than conventional supervision. These offenders include community corrections facility graduates and predatory sex offenders. Referrals to ISP can come directly from the courts, the parole board, the probation officer, or from a hearing officer or parole examiner.

ISP was first piloted in 1985, and is now available statewide. The ISP caseload has increased every year since inception, and now operates above capacity, requiring some conventional probation officers to supervise ISP offenders. In June of 1999 the statewide ISP caseload was 2,166 – 1,263 were probation referrals and 903 were parole referrals. In 1999 there were 45 ISP officers, 27 surveillance officers, and 14 senior probation officers responsible for ISP caseloads. The annual cost for an ISP case is $1,880.

Home Electronic and Telephonic Monitoring (HEM)

The Home Electronic Monitoring program was first piloted for parolees in Richmond and Winchester in 1989. Community corrections expanded the program in 1992 to include both parolees and probationers. The program is now available in all probation district offices and day reporting centers. Home electronic monitoring involves strict curfew monitoring through a tamper resistant transmitter worn on the ankle. Telephonic monitoring involves random paging of offenders requiring them to call the monitoring center from authorized locations. Electronic monitoring is often used in conjunction with both ISP and conventional supervision. Monitored offenders are required to pay a one-time $30 participation fee.

Telephonic monitoring of sex offenders was successfully piloted in Newport News, Richmond and Manassas in 1998. The program has since been expanded, with nine local sites now using the program. Use of the program has declined with the introduction of other sanctions and the reduction of staff time due to requirements of the Fair Labor Standards Act. In 1999, 1,418 cases were served through home electronic and telephonic monitoring.

Day Reporting Centers

Probation or parole officers staff the day reporting centers. Day reporting includes daily contact with the offender, and monitoring and random checking of daily itineraries, job interviews, counseling attendance and community service. Offenders are provided intensive substance abuse treatment services, aftercare/relapse prevention counseling, AA/NA group therapy, GED/ABE classes, life skills classes, job referrals, and vocational services. Other services, such as parenting skills, are provided as needed. Although some parolees are assigned to day reporting centers, most are probation cases.

The first day reporting center opened in Fairfax in 1993. There are now eight active day reporting centers: Fairfax, Abingdon, Richmond, Norfolk, Newport News/Hampton, Wise County, Martinsville, and Roanoke. Two additional centers, serving Harrisonburg and the Chesapeake areas, are planned. Day reporting center average rated capacities range from about 65 to 170. There were 571 people in day reporting programs in fiscal year 1999.

Boot Camp

There is one male boot camp in the state of Virginia, the Southampton Intensive Treatment Center Facility. Camp capacity is 100 persons, and offenders from across the state are eligible to participate. The program started in 1990, and consists of a disciplined, 17-week boot camp with military style training, control, and ceremony. There is a mandatory period of probation supervision upon release, including an initial intensive supervision period. The program includes short haircuts, no smoking, no speaking without permission, and limited telephone privileges. Offenders participate in physical fitness training, work ethic development, and community service projects. They also attend GED/ABE classes, vocational and job skills development, and life skills and substance abuse education courses. There are probation officers assigned to the camp to provide offenders with counseling and traditional planning services. Participation in the boot camp program is voluntary.

To be eligible for boot camp the offender must have been convicted of a nonviolent offense, as defined by the code of Virginia, or deemed nonviolent by the court. The offender may not be over 24 years old at time of conviction, and there is no minimum age. Offenders can have no more than one prior incarceration and cannot have been a state responsible inmate in the past. Offenders must be mentally and physically capable of participating in the program.

The program was expanded to four months in 1998, to be consistent with diversion and detention center programs and to enhance the chances of transitional success. In 1999, the boot camp received 324 offenders and graduated 229 — 95 offenders were terminated, 50 for medical reasons, 19 for disciplinary reasons, 22 for voluntary reasons, and 4 for other reasons. There is no women's boot camp in Virginia and the state contracts with Michigan for females.

Diversion Centers

The diversion center is a four- to six-month residential program. The program staff monitors offenders working in the community at paid jobs. There is random urinalysis testing, employment counseling, substance abuse education, and NA/AA group therapy, basic education/GED preparation, parenting skills and independent living training, transitional services, and training in coping with domestic violence. Court costs and restitutions are collected, and community service work is regularly performed. There is a mandatory year of probation supervision upon release, including an initial period of intensive supervision.

The offender must have been convicted of a nonviolent offense, as defined in the code of Virginia, to be eligible for a diversion center. There is no age restriction, but the offender must have been tried and convicted as an adult. There is an evaluation period of up to 45 days by the Department of Corrections before an offender is accepted to the program.

The first diversion center for female offenders opened in Richmond in 1996. A diversion center for men opened in Chesterfield County in 1997. In 1999, there were three other diversion centers: Southampton, Harrisonburg, and Chatham. The combined capacity of these centers was 398.

Detention Centers

Detention centers offer four- to six-month programs emphasizing military drill, military discipline, strict hygiene and limited privileges. Detainees perform physical labor as part of organized public works or community service projects. In some instances, work is performed in prison complexes. Detainees participate in random urinalysis testing, medical and psychological counseling, Breaking Barriers programs, transitional services, substance abuse treatment, life skills, GED/ABE classes, and are evaluated for therapeutic treatment groups. There is a mandatory one-year period of probation supervision upon release, following an initial period of intensive supervision. The offender must have been convicted of a nonviolent offense, as defined in the Code of Virginia, to be eligible for a detention center sanction. There are no age restrictions, but the offender must have been tried and convicted as an adult.

There are five detention centers in Virginia: Southampton Men's Detention Center, Stafford Men's Detention Center, Tidewater Detention Center for Women, Appalachian Men's Detention Center, and White Post Work Center. These five detention centers had a capacity of 608 beds in 1999.

Local Sanctions

Offenders in the six pilot sites, as well as across Virginia, can participate in many local alternative programs. The number and type of programs available varies by jurisdiction, although most localities offer some type of mental health, alcohol, and drug treatment programs. Community services boards often aid financially, and coordinate services in conjunction with local probation and parole offices. Services can also include supervised transitional living programs for offenders involved with the criminal justice system. Probation offices often serve as meeting places for many local treatment and counseling programs.

Fairfax County offers a wide range of services, perhaps the most resources, and the widest array of programs. Counseling includes anger management classes. The Men's Program in Fairfax provides assistance in finding alternatives to violence, through verbal resolution of conflicts and constructive (nonviolent) expression of feelings.

The Fairfax Detoxification program provides medical and social detoxification services for adults, as well as methadone detoxification and detoxification diversion. New Beginning is an eight- to 12-week residential treatment program for adults; Crossroads is a nine- to 18-month therapeutic community for adolescents and adults. Outpatient Services are provided at four sites throughout Fairfax County, and consist of individual and group counseling services for adult alcohol and drug abusers and their families. Intensive day treatment is available at four sites, one for men, two for women, and one for persons with both mental health and substance abuse problems.

The community services board in Norfolk provides a coalition of professionals from various public service agencies dedicated to planning services for individuals diagnosed with mental illness, mental retardation, or substance abuse disorders. Prescreening institutional referrals and predischarge planning are also offered. Other pilot sites have similar programs, providing halfway houses, counseling and reintegration services.

Jail Farms are used in two of the pilot sites, Newport News and Danville. These are secure facilities where inmates also work in the community. About 1,500 offenders pass through the Newport News jail farm every year. The inmates do approximately $3 million of work a year for the city. In addition to saving money, the program can also serve as a rehabilitative program for some offenders. Danville's jail farm is also used as an alternative sanctioning option, with inmates involved in major road maintenance and other community improvement programs.

3 Designing the Instrument: Virginia's Approach to Nonviolent Offender Risk Assessment

What is "statistical risk assessment?"

The Virginia General Assembly asked the VCSC to determine the feasibility, with due regard for public safety, of diverting 25 percent (or more) of eligible felony offenders from traditional incarceration to alternative sanctions. An offender's score on a "risk assessment" instrument, incorporated into the guidelines worksheets, and the presentence investigation report prepared for the sentencing judge, guide decisions about diversion.

Risk assessment estimates the likelihood that an offender will continue to be involved in crime, and classifies that offender according to the relative risk of continued involvement. Risk assessment is already practiced *informally* at many points in the criminal justice process, such as the arrest, pretrial confinement, and prosecution stages. Statistical risk assessment is *formal* rather than informal. It is developed from offender profiles based on factors at least partially successful in predicting recidivism.

Actuarial (or "statistical") risk assessment develops profiles, or composites, based on overall group outcomes. A group is defined by a number of shared, statistically relevant factors, factors that predict the likelihood of repeat offending. High-risk groups have a high probability of re-offending. This statistically-based approach to criminal behavior is an outgrowth of life-table analysis, used by demographers, actuaries, and other scientific disciplines.

The medical field provides a useful analogy. Medical researchers study cohorts of individuals to identify the correlates of the development or progression of disease. The general risk profiles, however, do not fit every individual. For example, some heavy smokers never develop lung cancer. Similarly, not every offender fitting the lower risk profile will refrain from future criminal activity. No risk assessment research can ever predict an outcome with 100 percent accuracy. Rather, the goal is to produce an instrument that is broadly accurate, and provides useful information to decision-makers. The standard by which to judge the success of risk classification is not perfect prediction, but the degree to which the instrument improves on decisions made without reference to the tool.

Recidivism rate is the standard by which failure is usually measured in the criminal justice system. Recidivism can be measured in several ways, ranging from any new arrest to a recommitment to prison. The VCSC chose any subsequent felony conviction as the primary measure of recidivism. However, this evaluation also examines the instrument's utility in predicting the

likelihood of any new arrest. The bar chart below compiled by the VCSC staff during the construction of the risk assessment instrument, shows how recidivism rates vary depending on how they are measured. In general, recidivism rates decrease as offenders make their way through the criminal justice system.

Figure 3.1
Recidivism Rates for Offenders Released From Prison in 1993*

* Analysis covers 962 offenders released from prison in 1993 who were tracked for three years.
Source: *Truth-In-Sentencing in Virginia, Evaluating the Process and Impact of Sentencing Reform,* National Center for State Courts, 1999.

How is statistical risk assessment used?

The VCSC's statistical approach to assessing the risk of recidivism is part of a long tradition within the criminal justice community towards making more responsible and informed decisions. Predicting the future occurrence of targeted "risk" behavior lies at the heart of all risk assessment procedures. When "risk" is defined as the likelihood of recidivism, statistical (or "actuarial") risk assessment is used to group offenders based on the likelihood that they will reoffend (Blumstein 1986; Champion 1994; and Gottfredson and Gottfredson 1980). The goal is to effectively group offenders using an explicit set of factors found to correlate with re-offending. Offenders within a particular group are expected to re-offend at similar rates.

As the VCSC illustrated, the most commonly used sources of information for developing risk assessment instruments have been official records - presentencing investigation reports, case records, and parole and probation reports (Mears 1998). Historically, the type of information used includes the offender's past criminal history (previous arrests, history of violence, previous performance on probation or parole), the nature of offenses and the number of victims, social variables like the offender's age, educational and employment history, socio-economic and family background, psychological profile (mental health evaluations and tests, expressions of remorse, behavior subsequent to the offense), and an offender's history of substance abuse (Domurad 1999). Different combinations of these sorts of variables have been used to predict recidivism for sex offenders (Korth and Gladston 1999), elderly offenders (Brown 1998), and violent offenders (McCann 1997). Risk assessment is also used in bail and pretrial release decisions by judges and magistrates (Goldkamp 1985), in probation decisions (Champion 1994), as well as in predicting the behavior of parolees (Palacios 1994). As regards the VCSC instrument, reviews of the effectiveness of guideline-based actuarial risk assessment for use by judges at the time of sentencing are nonexistent, because no other Sentencing Commission currently uses this tool.

In most studies, the likelihood of recidivism is most closely related to a few familiar criteria - offender age, employment, criminal history, and drug history. However, the predictive power of these studies is limited. The percentage of recidivists correctly predicted tends to be small, on the order of 15 to 30 percent (Monahan 1981).

What data were used to construct the instrument?

The VCSC developed a risk assessment instrument based on a statistical study of felony offenders sentenced in the early 1990s. The VCSC study, drawing on an extensive source of data gathered from PSIs, identified specific factors correlated with repeat offending.

No other state currently uses an actuarial risk assessment tool to impose alternative sanctions at the sentencing stage. With no blueprint to work from, the VCSC employed a two-step process. First, the VCSC selected a sample of offenders matching the basic eligibility criteria set by the legislature and Sentencing Commission from existing automated data sources. The sample contained 2,013 fraud, drug, and larceny offenders released from incarceration between July 1, 1991 and December 31, 1992.[8] The VCSC then examined the pattern of recidivism within this cohort. VCSC staff reviewed the subsequent criminal records for all 2,013 offenders to determine which had been reconvicted for a felony by December 31, 1995. Thus, all offenders were followed for at least three years. This database was used to determine the likelihood of felony reconviction for a set of potentially eligible offenders.

The VCSC used a stratified sampling technique in step one to increase the chance of including offenders with juvenile criminal records, as juvenile behavior, particularly delinquency, is known to be a common precursor to later adult crime. The staff also stratified the sample to draw equal numbers of drug, fraud, and larceny cases, as well as an equal split between offenders released from jail and prison. This sampling strategy ensured that there was an adequate number of each type of offense in the study. The sampled cases were then weighted to reflect their actual proportions in the universe of felony convictions. The principal data source for this early study was the automated pre- and postsentence investigation (PSI) database, complemented by the supplemental data taken from the PSI narratives. The PSI reports contain the most complete account of the offender's prior criminal record, and major portions of the reports are already automated.[9]

The sample provided a useful profile of the type of nonviolent drug, fraud, and larceny offenders the VCSC expected to be eligible for alternative punishments under risk assessment. Of the offenders included in the final sample, 17 percent were convicted of fraud, 30 percent of larceny offenses, and 53 percent of drug crimes. The large majority of the offenders, 78 percent, were male. The offenders ranged in age from 17 to 64, almost all of them over the age of 18, with an average age of 29. About 36 percent were white, and 62 percent were African-American. The majority of offenders, 60 percent, had never married, and over half, 57 percent, had not completed high school.

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[8] The VCSC initially approved analyses that included offenders with certain burglary offenses, to determine if some of these proved to be low risk offenders. However, VCSC found that they were among the higher recidivists. This finding persuaded the VCSC to exclude offenders with current or past burglary convictions from consideration for alternative punishment recommendation.

[9] The VCSC staff attempted to supplement juvenile history information with local court visits, and reviews of the offender's juvenile court files, for a large proportion of the sample with PSIs. However, the research team found very little useful data on offenders' childhood experiences and early environmental influences and, as a result, no new information was added to the database. Consequently, if early life experiences contribute significantly to the likelihood of adult criminality in ways not captured by the automated juvenile record, then the relative impact of this factor is understated.

About 36 percent of the offenders were working full-time when they committed their offense, while 10 percent were holding part-time work, and 54 percent were unemployed. Almost 25 percent of the sample had a relatively stable employment history, 14 percent reported steady employment with frequent job changes, and 61 percent had an irregular work history. Of working offenders, 14 percent were employed in skilled labor, 35 percent in semi-skilled positions, and over half, 51 percent, were unskilled laborers.

Court-appointed attorneys represented about eight in 10 offenders. The VCSC took this as a proxy for the offender's income level, as in 1996 an offender living alone needed an annual income below $9,675 to qualify for court-appointed counsel. Multiple indicators of substance abuse suggested a high level of use and abuse among sampled offenders, perhaps explained in part by the high percentage of drug offenders in the study sample. The majority, 85 percent, had prior adult records and approximately 29 percent had known juvenile records. About 72 percent of the offenders had at least one previous criminal misdemeanor conviction, and over half, 56 percent, had been incarcerated before their current instant offense.

Recall that the VCSC drew this sample from offenders released from incarceration between July 1, 1991 and December 31, 1992. The VCSC designed the risk assessment instrument in 1996. To determine whether the original offender sample was still representative four years later, the VCSC compared it to the population of fraud, drug, and larceny felons convicted in 1995, the most recent year for which PSI data are available. The 1995 data revealed that over half of the cases were drug convictions, about 29 percent were larceny convictions, and 18 percent involved fraud crimes. Most of the offenders were male. The average age of the offenders was about 30, and most were single. Almost half were unemployed, and, for those employed, work histories were erratic. There was a great deal of substance abuse among the offenders. Finally, the majority of these felons had prior adult records, and more than 25 percent had documented juvenile records.

The VCSC concluded that the sample of offenders used to construct the risk assessment instrument was quite similar to the population of offenders likely eligible for risk assessment consideration.

What specific factors are included on the risk assessment instrument?

The VCSC used the statistical technique known as logistic regression to estimate recidivism rates for fraud, drug, and larceny offenders. VCSC included on the final instrument 11 factors significant in predicting recidivism, drawn from elements of the current offense, offender demographics, prior adult record, and prior juvenile record.

The VCSC used the probability of felony reconviction as the measure of risk. In the sample of 2,013 offenders used to develop the risk assessment instrument, each offender's probability of recidivism was predicted based on characteristics associated with reconviction. For example, if the group of offenders with a large number of prior misdemeanors is disproportionately reconvicted, then prior misdemeanors will likely prove a significant predictor of subsequent felony convictions. Therefore, offenders with several prior misdemeanors would be more likely to reoffend than those with no prior misdemeanor convictions.

VCSC analysts used multivariate logistic regression to examine several potential predictors simultaneously. The worksheet score for each predictor was based on its contribution to the

prediction of reconviction, taking into account the other significant factors associated with recidivism. As a result, an offender's probability of reconviction can be determined through the unique contribution of several factors to the offender's overall likelihood of conviction for a new felony crime.

The VCSC included the factors proving statistically significant in predicting future recidivism in a final model. Using the results from discriminant analysis, a companion technique, the statistically significant predictors, the values for those predictors associated with higher levels of reconviction, were converted into worksheet scores on Section D of the sentencing guidelines.

The VCSC found four general types of factors significant in predicting risk: offender characteristics and demographics, current offense information, prior adult criminal record, and prior juvenile contact with legal authorities. Eleven specific factors were incorporated into a worksheet (Section D) based on their relative degree of importance.
Those factors were:

Offender Characteristics and Demographics:

1. Offender gender
2. Offender age
3. Offender marital status
4. Offender employment status

Current Offense Information:

5. Whether the offender acted alone when committing the crime
6. Whether there were additional offenses at conviction

Prior Adult Criminal Record

7. Whether the offender had been arrested or confined within the past 12 months
8. Offender's prior criminal record
9. Whether the offender had prior drug felony convictions
10. Whether the offender had been incarcerated as an adult

Prior Juvenile Record

11. Whether the offender had been incarcerated as a juvenile

How each factor is scored, and the total risk score determined, is shown on the copy of the risk assessment instrument (Appendix D).

The influence of race as a predictor variable

The VCSC used the "statistical significance" of each potential factor to determine which factors would be included on the risk assessment instrument, with one exception. The VCSC chose not to include the offender's race. Although race was statistically significant in the analysis, VCSC thought that race was "standing in" for other factors that are difficult, and often impossible, to measure. These factors include economic deprivation, inadequate educational facilities, family instability, and limited employment opportunities, many of which disproportionately apply to the African-American population.

The Commission concluded that including "offender race" on the risk assessment instrument was inappropriate. Once this decision was made, VCSC research staff removed the

influence of race from the risk assessment model to avoid biasing the 11 remaining factors on the instrument.[10]

Statistical v. Clinical Risk Assessment

Actuarial risk assessment is not in common use. Most decision-making within the criminal justice system remains informal, relying on professional intuition and judgment. The literature on risk assessment labels predictions, based on empirically derived tools as "statistical," and predictions based on individual discretion as "clinical" (Gabor 1986). The question is whether one method outperforms the other.

Constraints on judicial discretion in criminal sentencing have increased over the last several decades. The indeterminate sentencing model is largely "clinical," in that judicial discretion is wide and largely unchecked, save for legislatively specified maximums and (less commonly) minimums. Judges are asked to impose a sentence that is tailored and "just" for each individual offender. Structured sentencing, including guidelines, arose in response to what were perceived as undesirable features of indeterminate sentencing (Ostrom et al. 1998). Some critics claimed that judges promoted sentencing disparity (offenders with identical offenses and prior records receiving vastly different sentences) when they were given no guidance in incorporating all relevant factors in a consistent fashion. With structured sentencing and risk assessment, "statistical" rationality (predictable and uniform application of rules) replaces the more "clinical" intuition and discretion. In Virginia, the move to guidelines has brought a significant increase in the consistency of sentencing and a consequent drop in disparity (Ostrom et al. 1999).

Virginia's experience highlights what many view as the most serious weakness of the "clinical" approach—the large role personal discretion plays in decision-making (Bonta 1996). The decision-maker is free to use whatever information he or she deems most relevant to the case at hand, constrained only by unwritten professional norms and practices. As a consequence, external observers of clinical situations are often at a loss to identify how and why a particular decision was made, and it is not unusual for different professionals to come to different conclusions about similarly situated offenders (Andrews and Bonta 1994, Gottfredson and Gottfredson 1986).

In contrast, "statistical" classification is rooted in objective information, uses criteria that are uniform case to case, produces predictive statements that can be validated in a straightforward manner, and can be used with a minimum of training. Beginning with Paul Meehl's early, highly influential study, Clinical vs. Statistical Prediction (1954), preponderant evidence shows that statistical techniques of risk assessment are clearly superior to clinical assessments (Meehl 1954; Sawyer 1966; Gottfredson and Gottfredson 1979; Monahan 1981 and 1984; Miller 1985). For example, studies show that statistical methods outperform both mental health professionals and correctional caseworkers in predicting recidivism (Holland, Holt, Levi, and Beckett 1983). As such, Gottfredson and Gottfredson (1986) conclude, "in virtually every decision-making situation for which the issue has been studied, it has been found that statistically developed predictive devices outperform human judgment."

[10] This procedure is comparable to using the mean value for race in a regression equation to obtain the race-neutral estimate of a dependent variable such as income. In the development of the risk assessment scale, this was accomplished statistically by estimating a discriminant function equation that included race and a constant, but treating the constant and the coefficient for race as being equal to zero. Using this approach, the constant (as well as any other part of the equation taking on a constant value) would not have any intrinsic meaning, and, thereby, could be effectively discarded after the estimation phase. While this procedure inevitably led to the loss of some predictive efficiency, it provided weights for the remaining variables that were relatively free from the effects of race.

The approach used by the VCSC is called "actuarial risk assessment." It classifies offenders into groups based on common characteristics (Blumstein 1986; Champion 1994; Glaser 1984; and Gottfredson and Gottfredson 1980). When "risk" is defined as the likelihood of future recidivism, the offenders are grouped based on correlates of reoffending, such as prior record and demographic characteristics. Offenders within a particular grouping are expected to reoffend at similar rates. The VCSC's approach was appropriate because such aggregate predictive tools have been widely documented to be more accurate than clinical predictions of offender risk (see sidebar). Within the context of structured sentencing it is not possible to compare the effectiveness of the VCSC instrument to other actuarial risk assessment instruments, because no other sentencing commission currently uses this tool (Greenwood 1982; Smith and Smith 1992). However, we can examine the predictive power of the instrument, as well as the significance of the individual factors that make up the risk score, through the results of the pilot study, the focus of the next chapter.

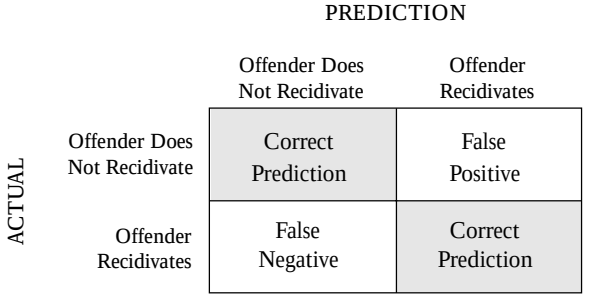
How was the diversion threshold determined?

A score of nine or less on the risk assessment instrument translates to a recommendation that the offender is a good candidate for alternative punishment. The Commission believes this threshold value meets the legislative mandate of diverting 25 percent of otherwise prison bound offenders, while ensuring public safety.

Virginia's General Assembly directed the Sentencing Commission to determine if 25 percent of qualified felons could be safely diverted from traditional incarceration to alternative punishment. The VCSC staff's statistical study of risk and recidivism convinced the Commission that it was possible to recommend 25 percent of otherwise prison bound offenders for alternative punishments and ensure public safety at the same time. The Commission based its conclusion on the sample of offenders released from incarceration between July 1, 1991 and December 31, 1992, with subsequent felony convictions tracked through December 31, 1995. Based on this cohort, the Commission estimated that placing all offenders who scored nine points or less on the risk assessment instrument in an alternative punishment would divert 25 percent of felons otherwise bound for prison. Further, historical analysis showed that, on average, offenders scoring nine points or less had less than one chance in eight (12 percent) of being reconvicted of a felony within three years.

Statistical risk assessment instruments must be tested to determine the accuracy of their predictions. The question is, does the instrument successfully predict who among convicted fraud, drug, and larceny offenders will recidivate? There are two pertinent forms of prediction error (Monahan 1981; Clear 1988). First, the model may err with a false prediction of "no recidivism." The offender is deemed a "good risk," given an alternative punishment rather than traditional incarceration, but then subsequently reoffends. This type of error is called a "false negative" and has obvious implications for public safety. Second, the model may err with a false "recidivism" prediction. The offender's profile suggests the individual is a "bad risk," and receives traditional incarceration, when in fact he or she will not reoffend. Offenders mistakenly labeled in this manner are referred to as "false positives." The rate of false positives has implications for fairness and equity, and, given the high cost of incarceration, for budgeting.

In the Commission's view, the different types of prediction error are not equally important. An error that results in diverting an offender who then reoffends (false negative) is considered the more serious because it can endanger public safety. Therefore, the cutoff level for low risk was based on very low levels of false negatives. The following figure illustrates the relevance of prediction error to recidivism research.



All criminological prediction schemes are based on socially determined levels of acceptable risk and harm (Morris and Miller 1985; Steadman 1980), and how the burden of risk is apportioned between actual or potential offenders and the community at large. The problem is to balance risks to public safety against the risk of depriving potential but unlikely offenders of liberty. That is, to balance false negatives and false positives, and how to justify the equation. The resolution of this problem has profound implications for a variety of public safety policy issues, including prison populations and their management, crime control and policing, and prosecutorial strategies.

How are risk classification results used?

Determining which offenders are low risks depends on a policy decision. Namely, how much risk is society willing to accept in a community corrections setting? The statistical models developed by the VCSC assigned a probability of being reconvicted within three years to each offender, based on risk factors discussed previously. No offender has zero risk of reconviction, and conversely, none has a 100 percent risk of reconviction.

A key issue for this evaluation is determining the extent to which judges follow the risk assessment recommendations. Do they abide by the established nine-point threshold? Do they appear to base their diversion decisions on the 11 factors conceived by the Commission? Selecting the threshold value involves a trade-off between correctional costs and public safety. A higher threshold means more prison-bound offenders will be given alternative punishments, and a likely reduction in expenditures on traditional incarceration. On the other hand, a higher threshold also means diverting a larger number of offenders with higher risk scores, a concomitant expectation of more recidivism, and a potentially greater threat to public safety.

Recall that not all offenders recommended for alternative punishment will be sentenced to one. Likewise, many offenders not recommended for diversion will nevertheless be diverted. Virginia's guidelines are voluntary, and judges have discretion to sentence as they deem appropriate.

4 Using the Instrument: Descriptive Results from the Pilot Study

How many offenders were sentenced using risk assessment?

Over 2,000 drug, fraud, and larceny offenders were eligible for risk assessment in the six court pilot study. One-third of them received alternative punishment, but most diverted offenders scored above the nine point diversionary threshold.

Between December 1, 1997 and September 30, 1999, the VCSC received 5,158 fraud, drug and larceny cases from the six pilot sites. All the offenders examined and tracked during the evaluation were originally sentenced during this 22-month period. Over one-third of the cases came from Circuit 19 (Fairfax), and an additional one-quarter were sentenced in Circuit 14 (Henrico). Of the two newest pilot sites, Circuit 4 (Norfolk) submitted nearly twice as many cases as Circuit 7 (Newport News). Drug cases accounted for 46 percent of the total, and larceny and fraud cases accounted for 36 percent and 18 percent respectively.

Not all 5,158 drug, fraud, and larceny offenders are eligible for diversion through risk assessment. An offender with a prior violent conviction (655 cases in the sample), or one charged with a concurrent violent offense (62 cases in the sample), is automatically ineligible.[11] Additionally, offenders recommended by the state sentencing guidelines for probation with no active incarceration are also excluded, since risk assessment is restricted to offenders recommended for confinement. This restriction excluded another 1,920 offenders in the sample. Finally, another 478 offenders were excluded because of problems or inconsistencies on the completed risk assessment score sheets (including missing information, errors and question marks found on the form, etc).

Thus 2,043 offenders, 40 percent of the total, were potentially eligible for screening on the risk assessment instrument. These offenders had a profile similar to those originally tracked by the VCSC in creating the instrument in 1995. Roughly 75 percent were male, about half were unemployed, and just under 60 percent had never married. The average age was 32 (average age in VCSC sample was 29), with an age range of 18-71 (range in the VCSC sample was 17-64). Offenders were convicted of similar offenses and came from similar geographic locations across the pilot sites.

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[11] Offenders who sell one ounce or more of cocaine are also excluded. However, there were zero such cases in the six pilot sites.

According to the VCSC database, 674 persons were diverted to an alternative sentence. These 674 offenders comprise 33 percent of the 2,043 cases eligible for risk assessment screening. Of the 674 offenders diverted, only 40 percent met the basic criteria of scoring nine points or less on the risk assessment instrument.

The goal of the evaluation was to obtain a sample of 500 offenders sentenced to alternative punishment using the risk assessment instrument. To reduce data collection costs while maintaining a representative follow-up group, 75 randomly selected offenders from Fairfax County were excluded from the sample of eligible offenders who were diverted. Additionally, of the 599 offenders left in the sample, 44 were excluded because their files could not be located at the relevant probation office. Therefore, the final sample for evaluation consisted of 555 offenders eligible for risk assessment who received a diversionary sentence. Figure 4.1 provides an overview of the data selection process.[12]

Figure 4.1
How the Follow-up Group Was Selected . . .

Pilot Site	Number of Cases
Danville	559
Fairfax	1,594
Henrico	1,262
Newport News	404
Suffolk	573
Norfolk	766
Total Number of Drug, Fraud, & Larceny Cases Sentenced Between 9/97 – 12/99	5,158

Some Offenders are Ineligible for Diversion	Number of Cases
Offender Recommended for Probation	1,920
Problems on Worksheets (missing information, errors, question marks)	478
Violent Prior Record	655
Violent Current Offense (additional offense)	62
Total Ineligible	3,115
Total Eligible for Diversion (5,158-3,115)	2,043

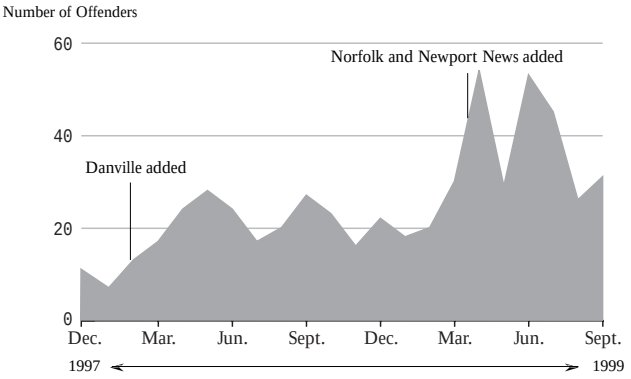
Number of Eligible Offenders Checked as Receiving Diversion 674

All Diverted Offenders Tracked 555
(minus sample from Fairfax and missing files)

[12] See Appendix A for a more detailed discussion of the data collection process.

The 555 offenders in the sample were sentenced between December 1997 and September 1999. Figure 4.2 shows the effect of adding Norfolk and Newport News to the pilot study in early 1999. The sample includes many offenders sentenced toward the end of the study period, which affects tracking of recidivism rates. Multiple forms of a statistical technique called "survival analysis" (see Chapter 5) allow rates of recidivism to be calculated based on the varying follow-up times the different sentencing dates reflect. We used survival analysis to account for the fact that some offenders have more "street time" in which to reoffend.

Figure 4.2
When Was Sentencing for the 555 Diverted Offenders?



How often do judges agree with the risk assessment recommendation?

Judicial compliance with the risk assessment recommendation is voluntary. Just over half of offenders scoring nine points or less, 56 percent, were diverted. In addition, of 674 diverted offenders, 404, or 60 percent, scored above nine on the instrument.

Offenders scoring nine points or less on the risk assessment worksheet are considered good candidates for alternative punishment. During the 22-month study period, 24 percent of eligible offenders scored at or below the nine-point threshold, and were therefore recommended for sanctions other than traditional incarceration. The average score for screened offenders was 12.5 points.

Figure 4.3
Judicial Agreement With Risk Assessment and Number of Offenders Diverted

Risk Assessment Score	Diverted	Not Diverted	Total Offenders
9 or less	270	215	485 (24%)
10 or more	404	1,154	1,558 (76%)
	674 (33%)	1,369 (67%)	2,043

Note: Percents in parentheses and judicial agreement in bold.

By categorizing eligible offenders into four groups based on (1) whether the offender was recommended for alternative punishment by the instrument, and (2) whether the judge subsequently diverted the offender, we can assess judicial agreement with the risk assessment recommendations. Clearly, judicial discretion and intuition remain guiding forces in sentencing nonviolent offenders. Of the 2,043 offenders screened with the risk assessment instrument, 270, or 13 percent, were recommended for, and sentenced to, an alternative punishment. Another 215, 11 percent, were sentenced to a traditional term of incarceration despite scoring nine points or less on the risk instrument. The largest number of offenders sentenced to alternative punishment, 404, some 20 percent, scored above the nine-point threshold. Over half the screened cases, 1,154, 56 percent of the total, were not recommended for an alternative, and the judges agreed, sentencing these offenders to traditional incarceration.

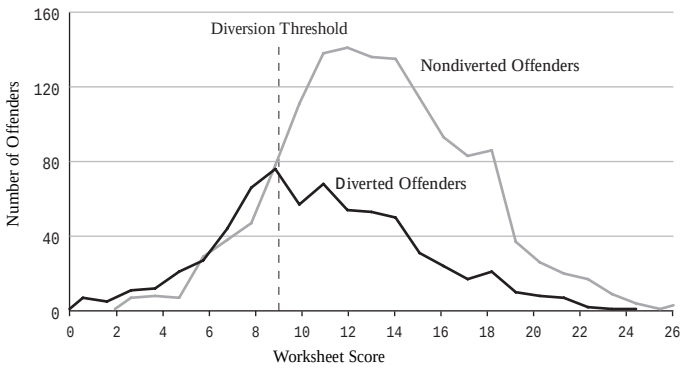
Judicial compliance with the risk assessment recommendation is voluntary. When offenders are recommended for an alternative but not sentenced to one, judges are asked to provide a reason for not choosing an alternative punishment. The judges' reasons provide the VCSC with a potentially important source of information on judicial perception of the utility of the instrument. In nearly two-thirds of these cases, however, judges did not cite a reason for choosing traditional incarceration instead of an alternative sanction. Where a reason was cited, judges most often questioned the offender's medical or psychological stability, or referred to the offender's refusal to enter an alternative punishment program.

How do risk assessment scores of diverted offenders compare to scores for offenders not diverted?

A majority of diverted offenders scoring greater than nine had risk assessment scores close to the diversion threshold.

Many offenders not recommended for an alternative punishment, but sentenced to one, scored just above the nine-point threshold. Figure 4.4 shows total risk assessment scores for all 2,043 eligible offenders: the bottom line (in black) shows the 674 diverted offenders, and the

Figure 4.4
Risk Assessment Scores for Eligible Diverted and Nondiverted Offenders



top line (in gray) shows the 1,369 offenders not diverted. The dotted line marks the diversion threshold value of nine. The diverted offenders have an average score of 10.9, and those not diverted have an average score of 13.3.[13]

Of the 674 diverted offenders, only 270, or 40 percent, scored at or below the threshold. Of the remaining 404, 60 percent of diverted offenders, 179 scored just above the threshold, with scores between 10 and 12, and an additional 134 scored between 13 and 15. The remaining 91 diverted offenders scored 16 or more.

It is notable that 215 offenders, or 44 percent, recommended for alternative punishment received traditional incarceration. Of those offenders, 163 scored between seven and nine, and the remaining 52 scored six or less. Therefore, when judges did not comply with the recommendations of the risk assessment instrument, most offender risk scores fell within +/- 3 of the nine-point threshold. Figure 4.5 illustrates judicial agreement with the risk assessment recommendation by type of offense.[14] The significant variation in diversion patterns suggests that judges do not apply the risk assessment criteria equally to the three types of offense. Offenders committing fraud are most likely to be diverted when recommended by the risk instrument, some 65 percent in our sample. By contrast, judges follow the recommendation to divert in larceny cases only 40 percent of the time. But when it comes to a risk assessment recommendation of traditional incarceration, judges comply 79 percent of the time for larceny offenders, and only 57 percent of the time for fraud. Drug cases chart an intermediate course.

Figure 4.5
Agreement With Risk Assessment Instrument by Offense

Offense	Worksheet Score	Diverted	Not Diverted
Drug	9 or less	155 (59.6%)	105 (40.4%)
	10 or more	159 (22.9)	534 (77.1)
Fraud	9 or less	65 (65.0)	35 (35.0)
	10 or more	129 (42.9)	172 (57.1)
Larceny	9 or less	50 (40.0)	75 (60.0)
	10 or more	116 (20.6)	448 (79.4)

Note: Judicial compliance is in bold.

What types of alternative punishments were given diverted offenders?

The Code of Virginia specifies a list of state and local alternative punishments that define a "continuum of sanctions" between probation and incarceration. In practice, the most common alternative punishments meted out were probation and jail.

Judges have the option to impose a wide variety of alternative sanctions on offenders diverted from prison. The Code of Virginia (§17.1-803) states that "alternative sanctions"

[13] The means for these two populations are significantly different.

[14] Overall, 32.9 percent of eligible drug offenders are diverted, 48.4 percent of fraud offenders, and 24.1 percent of larceny offenders.

include fines and day fines, boot camp, local correctional facilities (jail), detention centers, diversion centers, home incarceration, day or evening reporting, intensive probation, probation, and community service. The statute further states that judges and probation officers can determine other services or punishments, such as inpatient and outpatient treatment and payment of court costs and fines.

The 555 diverted offenders received 2,053 state and local sanctions, or an average of 3.7 sanctions per offender.[15] This suggests diverted offenders typically receive a "package" of state and/or local sanctions at the time of sentencing. Figure 4.6 shows that the three most common sanctions were court costs (given to 75 percent of offenders), supervised probation (received by 70 percent),[16] and jail (given to 45 percent).[17] Probation files revealed the three most common "packages" of sanctions:

- The most frequently imposed package, given to approximately 39 percent of offenders, was jail, supervised probation and court costs.
- A package that included jail, supervised probation, additional behavioral restrictions (maintain a full-time job and stay away from a specific person and/or property), and court costs was given to 17 percent of offenders.
- A sanction set of supervised probation and court costs was given to 14 percent of offenders.

Therefore, 70 percent of diverted offenders were given traditional sanctions—the endpoints of what is commonly called the "continuum of sanctions."

The sanctions between jail and probation are less frequently imposed. For example, only 133 offenders, 24 percent of the total, were sentenced to outpatient drug/alcohol treatment, only 78, 14 percent, to diversion centers, 77, 14 percent, to detention centers, 44, 8 percent, to work release, and 36, 6 percent of offenders, to inpatient drug/alcohol treatment. Only a handful of diverted offenders received inpatient treatment or prolonged mental health and addiction services.[18]

In some larger jurisdictions, such as Fairfax and Norfolk, good substance abuse and mental health programs are found within the local jail. In Fairfax, for example, judges and probation officers praised both the range and quality of programs available in the Fairfax County jail. For this reason, Fairfax County judges will often opt for a jail sentence, knowing that the jail provides services equal to, or better than, services outside the jail. Other, primarily smaller, localities have fewer programs within the jail, and must look to community-based services. But for the vast majority of diverted offenders, once an alternative sanction is imposed, supervision is

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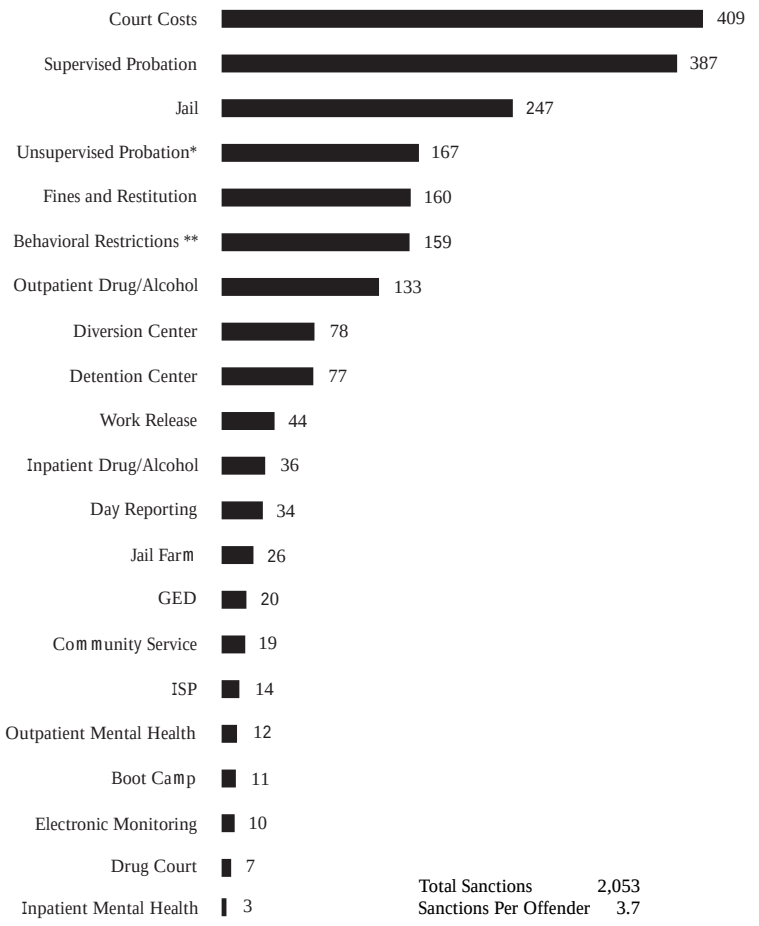
[15] The number of sanctions per offender does not include sanctions that are considered standard for all diverted offenders. These pro forma sanctions include: submitting to urinalysis, no drug use, no unauthorized out-of-state travel, etc. Only non pro forma sanctions are counted.

[16] It should be noted that practically all offenders with suspended prison sentences are assigned probation. Offenders recommended for incarceration under the sentencing guidelines who are eligible for diversion are sometimes given regular probation as a sentence. These offenders may or may not have had additional restrictions placed on them by the judge. The practice of suspending an imposed prison sentence and placing an offender on probation is popular in Virginia since judges feel they have added leverage to later impose a period of incarceration if a revocation occurs.

Figure 4.6
Number of State and Local Sanctions Received



Notes:
*Unsupervised Probation includes both unsupervised and indefinite probation.
**Behavioral Restriction includes: full-time job, license suspended; away from person; away from property.

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[17] Five of the six judicial circuits sentenced diverted offenders to supervised probation at least 70 percent of the time. On the other hand, Henrico sentenced only 20 out of 127 (16 percent) diverted offenders to supervised probation.

[18] The high cost of inpatient services (an average of $9,700 for mental health, alcohol and drug inpatient treatment compared to $900 per offender for outpatient treatment) keeps many from having access to the most intensive and long-term alternative programs. In addition, access to alternative sanction programs in Virginia varies considerably by the size and location of the jurisdiction.

managed by the Virginia Department of Corrections (or an assigned agency). Understanding the type of sanction imposed, and the overall sanctioning philosophy, means understanding more generally the Department of Corrections approach to offender supervision.

All pilot site probation offices reported using a "balanced approach" for offender supervision. A Department of Corrections policy directive articulates this approach to offender supervision.[19] Probation offices indicated that they provide every offender individual treatment, considering, among other things, the offender's history of substance abuse, violence, employment, and mental illness. All pilot sites reported using a variety of counseling and treatment services, as well as a number of surveillance techniques, including random urine screens (urinalysis is standard Department of Corrections policy statewide) and surprise home or work visits. Probation officers said they use the least intrusive supervision methods possible, consistent with the person remaining crime free. On the other hand, persons with a propensity to violence, even if not on probation for a violent crime, are dealt with swiftly if they violate even minor conditions of probation. For all other offenders, the general philosophy is that the supervising officer should exhaust all reasonable alternatives before filing a violation report with the court.

Many probation officers reported that diversionary programs are increasingly conceived as surveillance strategies rather than treatment modalities. These probation officers reported that in recent years there has been greater emphasis on drug and urinalysis testing and unannounced home visits, and less on counseling and treatment. While not all probation officers agreed with the trend toward more active surveillance strategies, others indicated that the handling of diversion sanctions is now more correctly "balanced."

Interviews with chief probation officers in each pilot site revealed no dramatic differences in philosophy regarding the importance of mixing surveillance and offender treatment strategies. Moreover, they acknowledged that individual officers retain discretion in supervising offenders, although measures are in place to serve as reasonable checks and balances. For example, though probation officers have the authority to send a person back to court for a revocation hearing, probation supervisors have the authority to override the revocation decision. Chief probation officers indicated that this does happen on occasion, most often with newer officers. More seasoned officers learn to work with the judges, and often adopt an approach that closely matches the jurisdiction's "culture, standards, and expectations" of supervision.

Issues and Recommendations

The purpose of the risk assessment instrument is to identify, from among nonviolent offenders recommended for jail or prison by Virginia's sentencing guidelines, good candidates for alternative sanction. Chapters 2 through 4 evaluate the process used by the VCSC to implement risk assessment in Virginia. This section weaves together what we learned from our overview of the

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[19] "A Balanced Approach," Virginia Department of Corrections, Community Corrections, Status Report, July, 1998-June 30, 1999.

design, development, and preliminary use of the risk assessment instrument with information from the field. During the summer of 2000, the NCSC evaluation team visited the pilot sites to speak with judges, Commonwealth attorneys, defense counsel, and probation officers about risk assessment. Respondents answered questions about using alternative sanctions, the mechanics of the risk assessment instrument, effects on local legal cultures, recommendations for improvements to the program, and whether they support expansion of the pilot project statewide. Responses and recommendations varied by locality and occupation, but some common themes emerged. The evaluation team believes combining the results of the process analysis with themes that emerged from the field leads to eight primary issues for consideration by the Commission. We have laid out those issues, and recommendations for the future, in the following pages.

Issue 1: Do judges and other justice system stakeholders perceive the risk assessment program as effective?

Judges

Although many players have a role during the sentencing phase, judges are ultimately responsible for handing down sanctions. Thus, if Virginia's risk assessment instrument is to be effective, and successful, their acceptance of the risk assessment program is crucial. The majority of judges in the pilot sites felt that, if the goal is to divert offenders from prison, the risk assessment instrument was a good way to go about it. Many judges indicated that the instrument is a useful aid to decision-making, ensuring that they consider factors relevant to assessing risk, regardless of whether they ultimately follow the instrument's recommendation. One judge described the instrument as a good summary of factors already considered "common sense factors" in the sentencing process. Of those judges less than enthusiastic about statewide expansion of the program, most felt "it couldn't hurt" the sentencing process, especially if it remained discretionary.

As a group, judges believed that risk assessment should be expanded statewide if the instrument effectively predicts recidivism, and is cost effective. In particular, many judges asked that the demographic factors on the worksheet (age, gender, etc.) be re-examined to see if they remain linked with higher rates of recidivism (see *Diversion and Recidivism in the Context of Risk Assessment*). They added that feedback from the Department of Corrections regarding which state and local alternative programs work best for different types of offenders would be useful. Tangentially, a number of pilot site judges (as well as other officials) were concerned that diverted offenders often waited too long, usually in jail, before being placed into an alternative program. Wait times for state run programs were reported to be longer than locally run programs, with waits approaching six months in some cases. With such long wait times, an offender can, in effect, serve a jail sentence plus the imposed alternative sanction.

Probation officers

Probation officers, familiar with the day-to-day routine of scoring offenders with the instrument, liked the idea of an objective tool for assessing offenders. They felt the instrument helped "level the playing field," and encouraged judges to rely on similar factors when considering offenders for diversion. Probation officers, like judges, felt that the instrument would be

most useful statewide if the demographic scoring factors were re-examined. Probation officers were also very aware of the problems associated with long wait times, as they often provide in-between services to offenders awaiting placement.

There was a general consensus among probation officers that judges new to the bench were more likely to review and use the instrument during sentencing than more experienced judges. Some felt that newer judges appreciated the instrument as another tool for developing a sense of appropriate sentencing practices.

Commonwealth and defense attorneys

Prosecutors did not generally support programs intended to divert offenders recommended for prison under the guidelines. They tended to view alternative sanctions as best suited for first-time offenders deserving a second chance, usually in combination with straight probation. Prosecutors saw risk assessment as effective if the instrument is used to determine who is a bad risk, and to ensure sanctions that result in secure confinement for those persons.

Most defense attorneys supported the greater use of alternative sanctions—if they are imposed instead of incarceration. Many expressed concern about "net widening" if risk assessment leads to an increase in the average number of sanctions per offender and/or increased surveillance. The general hope was that judges would resist enhancing sentences by routinely adding an alternative punishment to jail or short prison sentences.

Offenders do not always appreciate alternative punishment, even if it means no incarceration, and Virginia law permits offenders to opt out of certain sanctions. Some defense counsel suggested that "opting out" could be minimized if more care were taken to tailor sanctions to specific offender risks, needs, and capabilities. In a related observation, defense attorneys also noted that "date certainty," in part explains offenders' resistance to alternative sanctions. That is, offenders can typically predict when they will be released from jail or prison, but have greater uncertainty about release dates from alternative programs like boot camp, detention, or diversion centers. In sum, defense attorneys thought the instrument was effective if it helped keep their clients out of prison or jail.

Recommendation: Identify bottlenecks in the existing alternative sanction infrastructure. Present facilities may be unable to handle current needs and will be more severely strained by statewide implementation of risk assessment. In addition, increase awareness among judges and probation officers on the capacities of alternative sanction programs. Excessive wait times caused by limited program availability (or any other reason) will erode the perceived effectiveness of the instrument if a recommendation to divert is not carried out in a timely manner.

Issue 2: Does risk assessment adversely affect judicial discretion?

Most judges viewed risk assessment as a valuable complement to the sentencing guidelines, and did not see the instrument as an infringement on judicial discretion. Furthermore, none of the judges were opposed to using or having the risk assessment instrument available to them. One of the less supportive judges said "it didn't hurt having the instrument," and added that the information scored on the instrument was already contained in the presentence report, and was already considered in making a sentencing decision.

Several judges added that, since the system is voluntary, they ultimately retain discretion. From this perspective, the voluntary nature of the instrument is appropriate because no risk profile is 100 percent accurate. Even the least supportive judges were not opposed to incorporating voluntary risk assessment into the diversion decision if mandated by the General Assembly. While there was general support for the concept of risk assessment, opinions on how risk assessment should work in practice, particularly which factors should be scored, varied. In fact, several judges stated that the arguments of attorneys, the complete PSI, and DOC's willingness to accept a person into a program were at least as important as the risk score in making the decision to divert.

The profile of diverted offenders underscores that judges feel free to sanction outside the risk assessment recommendations. Judges did not divert in 44 percent of cases where offenders were recommended for diversion (scored nine or less). Likewise, judges imposed an alternative sanction in 26 percent of cases where offenders were not recommended for diversion (a score of 10 or more). All together, judges sentenced outside the risk assessment recommendation in roughly one of every three cases. But why judges didn't comply with the recommendation in so many cases remains something of a mystery. Few judges currently provide the VCSC with a rationale for departing from the recommendation.

Recommendation: Judges should be encouraged to provide feedback on the utility of the risk assessment instrument, and to articulate reasons for not following the instrument's recommendation.

Issue 3. Does using the risk assessment instrument increase the workloads of probation officers?

Accurate scoring of the risk assessment instrument is critical to the success of the program. Inaccurate scores can produce inequities, and damage confidence in the recommendation, especially if higher risk offenders are incorrectly classified as low risk. Field personnel indicated that the single most important factor for ensuring accuracy is the availability of an up-to-date presentence report (PSI). PSIs, which take several hours to complete, provide much of the background material to complete the risk assessment. Without exception, probation officers found the risk assessment instrument easy to use when they had a PSI, and reported no real increase in workload because of the instrument. It is possible to complete the instrument without a PSI, but there is a greater likelihood of error. Probation officers indicated their greatest concern is the accuracy of scoring the offender's prior record. Moreover, they found offenders' juvenile records very difficult to verify without a PSI.

Statewide, just over half of nonviolent cases have a completed presentence report. However, in the pilot sites PSI completion rates are in excess of 70 percent. Although probation officers indicated that the instrument could be completed without a PSI, *accurate* scoring of the instrument will generate more work for probation officers *if* there is no PSI.

In some pilot sites, prosecutors completed the instrument when there was no PSI. In these cases, both probation officers and Commonwealth attorneys believed accurately scored and completed worksheets were less certain. Both groups felt that when a presentence report was ordered, and when a probation officer completed the risk assessment instrument, the instrument was more likely to be completed correctly.

The VCSC addresses issues of workload and scoring accuracy through ongoing training and education. The significance of this effort became clear when VCSC staff sponsored education sessions in each pilot site during October and November 1997. The sessions reduced relatively high rates of worksheet error as judges, probation officers, Commonwealth attorneys, and defense counsel became familiar with the purpose of risk assessment, and how to complete the risk assessment worksheets. VCSC staff publicized the event and distributed manuals explaining the scoring of the new worksheets. The Commission offered continuing legal education credit to attorneys, and Department of Corrections educational credits to probation officers.

Recommendation A: There is a clear connection between accurate completion of the risk assessment instrument and the availability of a presentence report (PSI). Therefore, efforts should be made to increase PSI rates, or to gather the specific data contained on the risk assessment instrument in a way that matches the completeness and quality of a PSI. To support more accurate worksheet completion, increasing the links between existing justice system databases and new ones using an Offense Tracking Number (OTN) should also be encouraged.

Recommendation B: The VCSC should continue risk assessment education and training in the pilot sites. Education and training in all other jurisdictions will be critical if the risk assessment program is expanded statewide.

Issue 4. Should risk assessment recommendations be more specific?

The current instrument indicates only whether an offender is a good candidate for diversion. The sole objective is to make a dichotomous recommendation to divert the offender or not. By design, the instrument is not intended to match a specific sanction recommendation with a specific offender. Any alternative sanction the court decides upon is considered a valid diversion.

The VCSC wonders whether the risk instrument could be modified to recommend specific alternatives. For example, given a specific offender profile, might the instrument specify a particular sanction, such as boot camp, diversion center, alcohol treatment, or ISP? Many judges said that, in theory, revising the instrument so that it provides a more specific recommendation might be a worthwhile and logical expansion of the concept. Yet, most went on to say that offering more specific recommendations was not necessary at this stage of risk assessment development.

Most judges believed that probation officers or the Department of Corrections could best determine the specific alternatives or services most appropriate for an offender. In practice, the Department of Corrections is already required to assess whether an individual qualifies for a particular program, and it uses criteria that excludes some people from particular programs. For example, some offenders with physical disabilities, problems with obesity, or mental health problems, may not be accepted for more physically rigorous programs, such as boot camp. There are so many factors involved in assessing offender needs that incorporating a specific needs assessment would make the instrument unduly complicated.

Recommendation: At this point in time, the instrument should continue to assess only an offender's risk of recidivating if diverted from incarceration. Those best trained to conduct needs assessment should assist the court in determining specific placements for offenders.

Issue 5. What is the relationship between "risk assessment" and "needs assessment?"

Distinguishing between *risk* and *need* is important for developing and implementing any offender assessment and screening tool. The design of the current evaluation reflects the fact that the VCSC risk assessment does not gauge the needs of individual offenders, or recommend a specific alternative punishment. The purpose of the VCSC instrument is to assess the offender's risk to public safety. Needs assessment, on the other hand, identifies an offender's needs and matches the offender to programs designed to address those needs.

For practical purposes, we can generally assess sentenced felons in three ways. First, we can assess their *risk* of recidivism, which is measured along a continuum ranging from rearrest to recommitment. Second, we can assess according to an offender's *need* for services. These services can range from counseling and treatment, to more restrictive secure facility settings, such as detention centers and more traditional forms of incarceration—jail or prison. Third, we can assess offenders in terms of both their *risk* of reoffending and their *need* for services.

The VCSC adopted, and interpreted literally, the General Assembly's mandate in conceptualizing and designing the instrument:

> "*The commission shall…develop an offender risk assessment instrument for use in all felony cases, based on a study of Virginia felons, that will be predictive of the relative risk that a felon will become a threat to public safety." §17.1-803 [5]*

The VCSC defined "risk to public safety" as recidivism. Risk could thus be measured objectively, and the instrument could be based on factors that best predict recidivism. VCSC decided to leave an offender's need requirements to the judges, attorneys, and probation officers involved in the case. The Commission believed that probation officers and others from DOC were in the best position to evaluate an offender's needs when the court handed down a sentence less restrictive than full incarceration.

The DOC currently uses a *Risk-Needs Assessment* during an offender's first contact with the probation office after leaving court or exiting a facility (detention, jail, prison).[20] It is worth noting that the DOC Risk-Needs Assessment is conducted postsentence, and sometimes months after the sentencing hearing. The primary purpose of the assessment is to determine the level of supervision, and the specific services, an offender needs. First developed in Wisconsin, the instrument has been used in Virginia since the early 1980s. DOC, using Virginia offender data, has twice validated the instrument.[21]

The Risk-Needs Assessment scores offenders along two dimensions. The first dimension measures risk, and scores a set of factors to determine the level of supervision an offender will receive. Risk factors include address changes, substance abuse, employment, attitude, prior record, and history of violence. Offenders can be placed on one of three probationary levels, level I being ISP and level III being the least restrictive. The second dimension measures needs,

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[20] Department of Corrections Risk-Needs Assessment (PPS 14 and PPS 15), and Risk Reassessment (PPS 16) Procedure, revised 6-11-86.

[21] Interview with Walt Pulliam, DOC 4/3/01. The last validation was performed as part of an Old Dominion University doctoral dissertation in 1998.

and scores a different set of factors, including academic skills, employment, financial management, alcohol and drug use, and mental health. The results are used to determine a minimal, medium, and maximum need for services.

Other screening devices are also used to determine the need for offender services, including the popular Addiction Severity Index (ASI), administered by probation officers.[22] The ASI is designed to obtain a wide range of information on addiction levels and types, and treatment needs. Much of this information can also be found on the PSI form, if one is completed. The

Risk vs. Needs Assessment

Past research distinguishes between offender *risk* and offender *need* in the context of recidivism. Risk assessment focuses on measuring the extent to which an offender is a risk to public safety and, as such, fits within a "just deserts" philosophy in which sentences are tied to offense seriousness and past criminal history. The just deserts model emphasizes allocating scaled penalties as the deserved punishment, rather than as a means for rehabilitation. In contrast, needs assessment focuses more on the rehabilitative ideal by matching the offender to particular programs designed to address and treat particular needs.

Andrews, Bonta, and Hoge (1990) conclude that effective programs follow certain principles. The first of these is the risk principle, which suggests that the intensity of the treatment should be matched to the risk level of the offender. Within this framework, low risk offenders need few or no services, while high-risk offenders require intensive levels of service. In fact, evidence suggests that intensive levels of services with low risk offenders has no effect on recidivism, and may even increase recidivism (Bonta, Wallace-Capretta, and Rooney 2000).

The second principle is the need principle, which claims that appropriate interventions designed to address individual needs can decrease offender recidivism. Identifying needs can help inform decisions about which offenders are the best candidates for rehabilitation and which programs they should be matched with. The needs principle makes a distinction between criminogenic and noncriminogenic needs (Bonta, Wallace-Capretta, and Rooney 2000). Values and behaviors (e.g., antisocial personality, substance abuse, employment problems) shape an offender's criminogenic needs, while factors outside the individual's direct control (e.g., age, previous convictions, or race) are viewed as noncriminogenic needs (Gendreau, Little, and Goggin). Underlying this principle is the notion that the best chance to reduce recidivism comes from targeting the most malleable criminogenic attributes. Success requires matching modes of treatment and service with the abilities and learning styles of the particular offender. The likelihood of ongoing criminal activity falls if treatment is successful (Dowden and Andrews, 452).[23] Therefore, simply matching programs to offender risk level, while ignoring criminogenic needs, is insufficient for effective programming. Examples of assessment tools that purport to address both risk and need include the Wisconsin Needs Scale and the Canadian Level of Service Inventory.

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[22] A. Thomas McLellan, Ph.D. and colleagues at the University of Pennsylvania developed the ASI (5th edition, last updated 1997). It is designed for clinicians and researchers to assess treatment planning and outcomes within seven functional areas including medical status, employment, drug use, alcohol use, legal status, family/social relationships, and psychiatric status.

[23] Additional principles for effective programs include the responsivity principle and the professional discretion principle. The former holds that styles and modes of treatment service must be closely matched to the abilities and learning styles of the offender, and the latter suggests that after reviewing risk, need, and responsivity, professional judgment can improve final assessments.

judge is provided the ASI score prior to sentencing if a presentence report is ordered and if the initial substance abuse screening indicates the need for the ASI assessment.

Participants in the evaluation frequently voiced the difficulty they have in separating risk from need. Confusion and dissatisfaction regarding the goals of the VCSC risk instrument surfaced during interviews in the pilot sites. Some judges and probation officers did not see risk as easily separable from need, nor did they think it desirable to separate them. Indeed, several of the demographic factors on the risk instrument are also indicators of need. It was often mentioned that young, unemployed, unmarried, males were precisely the group of offenders who were most in "need" of intervention services (in the form of alternative sanctions). But under risk assessment, those attributes can push an individual over the threshold of a diversion recommendation. There was little debate that many would fail if diverted, but many believed that success could also mean turning an individual's life around.

The argument is about the role of individual discretion in assessing offenders. Statistical risk assessment applies a standard set of criteria in a uniform way to all offenders. The strength of this approach is that all offenders are measured with the same yardstick, and the groups identified as "high risk" tend to recidivate at higher rates than the groups identified as "low risk." This approach measures risk in the aggregate, and does not produce an individualized prediction for a particular offender. Risk assessment is based on statistical regularities that show that offenders of a certain profile (e.g., young, unemployed, unmarried, and male) tend to recidivate at higher levels. But, of course, not everyone with that profile recidivates, and that is the crux of the issue for those opposed to the statistical risk model. Certain officials believe that their expertise and intuition can improve on the predictive power of the blunt statistical measures, especially when an offender's substance abuse history, employment record, education, as well as a host of other factors that may identify an offender's needs, are known. Many believe, given access to this additional information and face-to-face communication, they can differentiate finer gradations of risk within a particular profile.

Recommendation: Continuing effort should be made to discuss the purpose and rationale of the current risk assessment instrument with judges and probation officers. This should include a review of the Risk-Needs Assessment used by DOC staff.

Issue 6. Are alternative punishment and a continuum of sanction sufficiently available in the pilot sites?

For the vast majority of offenders diverted in Virginia, imposing an alternative sanction means serving time in jail, and/or some form of probation. These two sanctions represent the end points of what some suggest should be a "continuum of alternatives." To evaluate the types of sentences imposed in practice, we must discuss how actors in the court system perceive the availability of alternative sanctions.

We asked judges, Commonwealth attorneys, and defense attorneys their views on the use and availability of alternative sanctions in their jurisdictions. Our goal was to uncover whether the limited set of sanctions actually used in diversion is a function of the lack of alternatives available in the sites, a function of a perceived lack of availability, or if judges use a subset of sanctions as a proxy for others.

Perspectives on whether sanctions were adequate depended on several factors, including jurisdiction, occupation, and notions of how alternatives are defined. An open-ended interviewing format led to a wide range of responses, but some commonalities surfaced. For example, judges did not tend to distinguish between state and local programs, and the consequent differences in management and funding. Judges most often pointed to treatment-oriented services, such as those related to mental health and drug addiction (typically funded at the local level), when asked which programs were missing from an ideal sanctioning continuum. They were also concerned by perceived limitations of slots in detention and diversion centers (which are state-funded programs).

Several judges noted that one problem with placing an offender in alternative sanctions was that many persons convicted in a given pilot site actually lived in a neighboring jurisdiction. This was of particular concern in Fairfax, where several officials expressed a reluctance to spend local resources supervising someone who would eventually leave the county and return to Washington, DC. On the other hand, judges expressed the desire to provide the right mixes of sanctions to all convicted offenders, and, given the poor quality of programs available in DC, were often unwilling to transfer supervision to DC.

In general, Commonwealth attorneys expressed little interest or concern about an adequate continuum of sanctions. They were concerned that sanctions be appropriate to the crime, and that they be properly monitored and enforced. In many instances, they stated that straight probation was inadequate and should be enhanced with additional, more punitive measures. One Commonwealth attorney summed up the widespread view on the suitability of treatment, saying it is not the court's job to "fix people's problems." He added that the judicial system viewed the sentencing process in terms of punishment reluctantly, and that courts are not well positioned to provide meaningful services to offenders.

Some defense attorneys (including public defenders) felt that there were enough alternative sanctions available to treat offenders, but that judges were too reluctant to place offenders in these programs. The perception among many was that judges make considerable use of the detention center program, and often impose the diversion center alternative *following* the completion of a prison or jail sentence. One defense lawyer said that the risk assessment instrument put "blinders on probation officers," in that many offenders who would have been recommended for diversion prior to risk assessment are now being incarcerated. On the other hand, others said that some clients prefer incarceration to certain alternative sanctions. Many offenders are primarily concerned with the bottom line, and, unless straight probation is an option, prefer the "date certainty" associated with incarceration.

The VCSC concluded, after monitoring sentencing practices over the last several years, that many judges prefer keeping offenders in local facilities when incarceration is recommended under the sentencing guidelines. Reasons for keeping offenders in the community vary, but two major themes emerged. First, judges often feel it is important to keep offenders local to maintain family ties. Several judges and probation officers said that a family support network is the most, and often only, secure foundation for an offender meeting sanction requirements, either while incarcerated or upon release. This support network erodes when offenders enter the state system, often housed hours away from their families. Secondly, judges said they are

more familiar with programs in local jails than with state-level programs. Judges easily cited substance abuse counseling, anger management sessions, intensive addiction and dual diagnosis treatment programs, GED programs, religious groups, work release, and many other programs available in local jails. Judges said they liked knowing offenders would receive services at the local level that cannot be guaranteed in the state system.

The tendency of courts to lean toward local confinement was even more apparent in the jail farm sites. Jail farms were often cited as the diversion sanction of choice, where they are available, rather than the diversion/detention center combination. In some cases, offenders who might, in another jurisdiction, receive probation get jail sentences because of the jail farm program. All the judges interviewed believed that jails were doing a reasonable to very good job providing a blend of services to incarcerated offenders.

Judges, Commonwealth attorneys, and defense attorneys view the issue of a continuum of sanctions through different sets of perceptual lenses. Judges feel that there is a continuum of sanctions, but often rely on jail because they feel that this is an arena in which offenders receive services typically associated with other sanctions. Commonwealth attorneys, on the other hand, place primacy on punishment and restraints, and are less concerned with sanctions that deal with treatment issues. Finally, defense attorneys believe that a range of sanctions exist, but that judges, ultimately, use them reluctantly.

Recommendation A: Given the interest among judges in having alternative sanctions available, continuing effort should be made to educate judges on the full spectrum of offender services and special programs available at the local and state level.
Recommendation B: Judges need to know what type of services diverted offenders receive when comparing local sanctions (like jail) to state programs (like detention and diversion centers). We should educate judges about the specific types of services offenders receive in state level alternative programs.
Recommendation C: We should continually educate judges about VCSC policies regarding which alternatives constitute diversions. One option might be a "quick table" that lists which sanctions are considered diversions given the guidelines recommendation.

Issue 7. Does risk assessment affect the interaction among judges, probation officers, and attorneys inside or outside the courtroom?

According to the majority of people interviewed, most discussion about risk assessment came during the initial implementation and training period. Now, most agreed, very little discussion with the judge about risk assessment recommendations occurs in court, or by telephone. The only time details of the various sentencing guideline worksheets, or the risk assessment instrument, are discussed in court is when a scoring mistake is suspected. Instead, judges rely primarily on the guideline summary and sentencing recommendation of the sentencing guidelines coversheet.

Judges and probation officers in the six pilot jurisdictions said they rarely discussed particular sentencing recommendations. In fact, most sites have formal or informal policies that limit discussions to those times when all parties are present. Most prosecutors and defense attorneys did not recall specific instances when risk assessment was discussed, either inside or

outside the courtroom. Moreover, attorneys apparently do not rely on the risk assessment forms during plea or sentence negotiations. Defense attorneys also indicated they did not discuss the risk assessment instrument with their clients before trial.

The judges reported that though the risk assessment instrument and the scoring factors are not routinely discussed, they often do discuss the sentence recommendations on the guidelines cover sheet. Defense attorneys make their arguments for an alternative if they feel a client is going to receive active time. This occurs no matter what the risk assessment instrument recommends.

Issue 8: How is the scoring of young, unemployed, unmarried males on the risk assessment instrument viewed by the court community?

Judges and probation officers generally supported the idea of risk assessment, and were comfortable with the development of the instrument. However, one of their primary concerns is the difficulty many young males have qualifying for alternative punishment. Unemployed, unmarried, males under age 20 begin with a score of nine points, and any additional scoring renders them ineligible for a diversion recommendation. They were aware that VCSC research shows this type of offender to have a high rate of recidivism, but they also felt this was the group most in need of services.

Both supporters and critics of the risk assessment instrument voiced concerns about including various demographic factors. Some believed it more cost-effective to divert young offenders than older offenders, since many alternative programs work to reduce recidivism. One judge indicated that the problem was tying the goal of reducing recidivism to the instrument. He felt that recidivism should be tied to individual programs rather than the risk assessment instrument, and further added that he would like to see more people given another chance through diversion, even if it led to lower overall success rates. Another judge said that determining which young people had a good chance of succeeding in an alternative placement was based on factors not reflected on the worksheet. He looked for signs of stability that separated lower from higher risk young offenders, such as signs of a past stable relationship, perhaps with a grandparent, church, sport, or community organization. He added that many such young offenders might be more salvageable than older persons who never had legitimate, stable, or worthwhile ties to the community. He did not know, however, how these factors could be objectively scored on the instrument.

Yet another judge felt the appropriateness of scoring demographic factors should depend on the goals of the risk assessment instrument. If the goal is to decrease risk at all costs, he thought targeting young offenders made sense, because young, unemployed offenders are very high risk. On the other hand, if the goal is placing young people in diversion programs earlier rather than later (since they are most in need of discipline and other treatment services), he believed it counterproductive to penalize younger offenders. This question of *risk vs. need* is discussed more fully under Issue 5 above.

The VCSC deliberated at length about how to treat factors related to age, gender, employment, and marital status. The Commission concluded that these factors should remain on the worksheet, since they relate to increased rates of recidivism. They did not want to promote an

instrument that recommended high-risk offenders for diversion. The Commission decided to offer the recommendation based solely on *risk assessment,* and let judges choose whom to divert on an individual basis, since the instrument is voluntary.

As part of the current evaluation, the predictive utility of the demographic factors on the worksheet has been re-examined. The next chapter assesses these factors with bivariate and multivariate statistical techniques, using several different measures of recidivism.

5 Diversion and Recidivism in the Context of Risk Assessment

Introduction

We can gauge the effectiveness of Virginia's risk assessment instrument by its ability to distinguish high risk from low risk offenders. Risk is defined, in this context, as the likelihood of future recidivism. The decision to make Worksheet D a permanent part of the Virginia sentencing guidelines rests largely on whether judges find the instrument a useful tool and aid in making sentencing decisions.[24] From the perspective of the VCSC, and most participants of the pilot study, the bottom-line is the extent to which the risk assessment instrument estimates offender recidivism.

In this chapter we will use multiple analytical methods to examine a range of questions related to understanding the instrument's success in predicting recidivism, such as: Which offender characteristics are important in the decision to divert? What is the relationship between a total risk score and the likelihood of recidivism? How does the timing of recidivism vary among offenders? Our goal is to break the analysis of recidivism into discrete parts to provide Virginia policymakers with evidence of how judges use the instrument in making diversion decisions, and to understand which worksheet factors most explain the incidence and timing of recidivism.

We designed the recidivism analysis to answer specific questions posed by the VCSC as well as by judges, probation officers, and attorneys in the pilot sites. From our earlier discussion on the process used to build the risk assessment instrument, and the descriptive results of the pilot study, there emerged three important issues for our analysis of recidivism. First, fully two-thirds of diverted offenders scored above the nine-point threshold. In practice, it appears that the criteria judges use in the diversion decision varies from, or is at least weighted differently, than the elements laid out on Worksheet D. Because the Virginia guidelines are voluntary, judges are free to comply or not with the guideline recommendation. Our first step is to examine which factors on the risk assessment instrument judges use in a systematic fashion to distinguish offenders who are diverted from those who are not.

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[24] The terms risk assessment instrument and Worksheet D are used interchangeably.

Secondly, many judges and probation officers in the pilot sites were concerned about the specific content of the factors on the risk assessment instrument, and how each related to recidivism. They did not challenge the statistical work done by VCSC analysts in designing the instrument, nor that the factors included on the worksheet are associated with recidivism *in the aggregate*. Rather, most judges noted that in making an *individual* assessment of an *individual* offender, certain worksheet factors—most notably the demographic factors (e.g., age, gender, employment status, marital status)—were sometimes aggravating and other times mitigating. That is, for one type of offender profile, certain criteria (e.g., young age) led them to divert the offender, while for another type of profile the same criteria led them to incarcerate the offender. In fact, when we probed more deeply during the interviews, many judges stated that the information contained in the full PSI, along with their experience and intuition, provided the best estimate of the likelihood of recidivism. Simply stated, many judges said that careful review of all relevant material allowed them to assemble a more accurate picture of the offender's risk and need than a cursory review of the 11 factor risk score on Worksheet D. These judges argued that individual judicial discretion predicted recidivism better than a uniformly applied risk assessment instrument. Thus, we examined the extent to which each factor on the risk assessment instrument predicts the likelihood of recidivism.

Thirdly, in addition to the number of offenders who recidivate, there was considerable interest in understanding the effects that different offender characteristics have on the timing of recidivism. We used a technique called "survival analysis" to examine this issue.

These three issues framed our analysis to ensure that we addressed the most pertinent questions about the use and success of risk assessment in Virginia. Our analysis proceeded in two stages. In the first stage, we used a statistical technique called logistic regression to analyze the influence of offense and offender characteristics on the judicial decision to *divert*. This analysis provided a clearer understanding of how, *in practice*, judges actually used the information on the worksheet. It identifies the factors judges emphasized most consistently in their decisions to divert, as well as the factors that varied the most.

Once we clarified the diversion decision, the second stage turned to an in-depth look at the success of the instrument in predicting *recidivism*. The factors included in the analysis were all elements from Worksheet D, the risk total score, offense type, and pilot site location. Our goal was to determine which of the many potentially important factors did the best job of "explaining" the likelihood and timing of recidivism.

We conducted the analysis in the form of a natural experiment. During the period of the pilot study, 2,043 offenders met the basic risk assessment eligibility criteria for diversion. Of this total, about one-third (674) were actually diverted. The designers of the instrument found all of the factors on Worksheet D significant in differentiating offenders more likely to recidivate from those less likely to do so. However, some practitioners in the pilot sites challenged the utility of selected elements on Worksheet D (particularly the demographic factors), and claimed that the actual decision to divert is a more nuanced and individualized process. Because judges used the risk assessment instrument voluntarily, we were able to observe the way judges actually used the instrument criteria in practice. We will identify those factors most influential in the decision to divert and, once diverted, which factors best predicted recidivism. Moreover, because our sample

of diverted offenders (555) contained a wide range of risk total scores, we could test the effectiveness of the risk total threshold (nine points) on our ability to predict recidivism.

At this stage of the analysis, we were clearly aware that we were not investigating a random sample. Judges consciously selected the offenders who were diverted. It is no great leap to assume that judges tended to divert offenders they believed were the lower risk to public safety. The issue is determining how closely judicial practice aligned with the risk assessment recommendations. How did the pool of offenders actually diverted compare to the pool of offenders recommended for diversion by the instrument? In effect, the instrument went head-to-head with judges who were free to use the factors on Worksheet D or not as they made their diversion decisions.[25]

First, we examined which worksheet factors judges emphasized in deciding whether to divert—all, some, or none? Second, once the pool of diverted offenders was identified, we examined the incidence and timing of recidivism. How well did the factors on Worksheet D predict the likelihood of recidivism among the offenders actually selected for diversion? The results helped clarify the relationship and success of individualized judicial decisions compared to a structured risk assessment instrument within the context of Virginia's voluntary guidelines.

The Decision to Divert

Before recidivism becomes an issue in the context of risk assessment, the offender must receive an alternative punishment. That is, the judge must decide to divert an offender *before* the offender can have the opportunity to recidivate. Therefore, to better understand the relationship between recidivism and alternative punishment, we looked first at the characteristics of offenders who passed the initial screening by judges and were diverted. This analysis required us to examine all of the 2,043 offenders in our sample who were eligible for risk assessment. The goal was to better understand which factors differentiate the 674 offenders who were diverted from the 1,369 offenders who were not.

The statistical model.

Given the voluntary nature of Virginia's guideline system, it was impossible to predict with certainty whether offenders eligible for consideration on Worksheet D would be diverted or incarcerated. However, it was possible to reasonably estimate the probability of diversion by examining the statistical relationship between the characteristics of the person sentenced and the observed pattern of judicial diversion. If judges used the risk assessment instrument as intended by the VCSC, then the likelihood of diversion should have been influenced by factors included on the worksheet. However, given that many of the diverted offenders had total risk

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[25] The analysis did not examine the pattern of recidivism among offenders sentenced to alternative punishment as compared to offenders who received traditional incarceration. While this was never the goal of the project, it was also impossible due to time and budget constraints. We estimated that offenders sentenced to traditional incarceration in our sample would serve an average of 27.3 months in prison. The project time frame could simply not accommodate the time for incarceration and follow-up. For a more detailed look at the risk assessment instrument's ability to predict recidivism, see Appendix B.

scores above the threshold, the analysis also examined the relevance of variation among pilot sites, crime type, and total risk score. The figure below shows the 10 factors from the worksheet, the three offense types, as well as the six pilot locations and the risk total score included in the model.[26]

We developed a statistical model to compare and contrast how these multiple factors interacted to explain diversion. Such analysis was necessary to control *simultaneously* for the influence of this set of factors (called *independent* or *predictor* variables) on the likelihood of diversion. This statistical technique enabled us to discern the unique contribution of each of the individual independent variables in explaining variation in diversion rates (called the *dependent* variable). We used a multivariate analysis technique called logistic regression, which is appropriate with dichotomous dependent variables. In this context, "diversion" is dichotomous because we coded the decision in one of two ways: "one" if the offender was diverted, "zero" if the offender was not diverted.

Figure 5.1
Description of Variables Used to Predict the Decision to Divert (N=2,043)

Variable Name	Coding	Mean	Std. Dev
Gender	1=Male	0.72	0.45
Age less than 20?	1=age less than 20	0.02	0.14
Age between 20 and 27?	1=age 20-27	0.34	0.47
Age 28 or Older?	1=age 28 and over	0.64	0.48
Ever Married?	1=Never Married	0.59	0.49
Employment Status	1=Unemployed	0.48	0.50
Offender Alone?	1=Offender Alone	0.71	0.45
Additional Offenses?	1=6 or more additional offenses	0.18	0.38
Arrest/Confined Past 12 mos?	1=Arrest/Conf Past 12 mos	0.64	0.48
Prior Felony/Misd Conv/Adj?	1=score of 1 or more on priors	0.93	0.25
Prior Felony Drug Conv/Adj?	1=one or more prior drug conv/adj	0.34	0.47
Prior Adult Incarceration?	1= one or more prior adult incarcer	0.79	0.41
Drug Offense?	1=Drug Offense	0.47	0.50
Fraud Offense?	1=Fraud Offense	0.20	0.40
Larceny Offense?	1=Larceny Offense	0.34	0.47
From Norfolk?	1=Norfolk	0.16	0.36
From Suffolk?	1=Suffolk	0.13	0.33
From Newport News?	1=Newport News	0.06	0.23
From Henrico?	1=Henrico	0.23	0.42
From Danville?	1=Danville	0.14	0.35
From Fairfax?	1=Fairfax	0.28	0.45
Risk total less than 7?	1= risk total <7	0.07	0.25
Risk total between 7 and 9?	1= risk total 7-9	0.17	0.38
Risk total between 10 and 12?	1= risk total 10-12	0.28	0.45
Risk total between 13 and 15?	1= risk total 13-15	0.25	0.44
Risk total over 15?	1= risk total >15	0.23	0.42

Note: All variables coded as 0 or 1

[26] Prior juvenile incarcerations/commitments are excluded from this analysis. The low number of offenders with a prior juvenile record (36) indicates to us that there is a data problem related to this factor. This point is expanded on later in this chapter.

The results of the regression analysis, and the variables that are statistically significant in explaining diversion, are displayed in the figure below. The entries in the figure are the *regression coefficients* (called *logits* in logistic regression) for each independent variable. The coefficients indicate the relative influence of each independent variable on the probability that an offender will be diverted. A positive coefficient indicates that larger values of the independent variable are associated with an increased probability of diversion, while a negative coefficient indicates a diminished probability of diversion.

Overall significance.

The percentage of cases correctly predicted by the model (last row of the figure) shows the overall success of the model in correctly predicting whether an offender was diverted.[27] This

Figure 5.2
Logit Results for the Diversion Decision

	Coef.	Std. Err.	z	P>|z|	95% Conf.	Interval
Gender	-0.07	0.12	-0.60	0.55	-0.31	0.17
Age less than 20?	-0.13	0.42	-0.31	0.76	-0.95	0.69
Age between 20 and 27?	0.24	0.13	1.83	0.07	-0.02	0.51
Ever Married?	-0.10	0.12	-0.80	0.43	-0.34	0.14
Employment Status	0.06	0.11	0.51	0.61	-0.16	0.27
Offender Alone?	-0.01	0.06	-0.22	0.83	-0.13	0.11
Additional Offenses?	-0.15	0.14	-1.08	0.28	-0.43	0.13
Arrest/Confined Past 12 mos?	-0.01	0.06	-0.23	0.82	-0.13	0.11
Prior Felony/Misd Conv/Adj?	-0.40	0.23	-1.76	0.08	-0.85	0.05
Prior Felony Drug Conv/Adj?	-0.43	0.13	-3.30	0.00	-0.68	-0.17
Prior Adult Incarceration?	-0.17	0.15	-1.13	0.26	-0.46	0.12
Drug Offense?	0.29	0.13	2.20	0.03	0.03	0.54
Fraud Offense?	1.05	0.15	7.11	0.00	0.76	1.34
From Norfolk?	0.25	0.16	1.56	0.12	-0.06	0.56
From Suffolk?	-0.24	0.18	-1.40	0.16	-0.59	0.10
From Newport News?	-0.08	0.23	-0.33	0.74	-0.53	0.38
From Henrico?	-0.34	0.14	-2.38	0.02	-0.62	-0.06
From Danville?	-0.96	0.19	-5.14	0.00	-1.32	-0.59
Risk total less than 7?	1.41	0.32	4.47	0.00	0.79	2.04
Risk total between 7 and 9?	1.27	0.22	5.68	0.00	0.83	1.71
Risk total between 10 and 12?	0.42	0.18	2.27	0.02	0.06	0.78
Risk total between 13 and 15?	0.21	0.17	1.25	0.21	-0.12	0.53
Constant	-0.70	0.43	-1.64	0.10	-1.53	0.14

Log likelihood = -1141.18
LR chi2(22) = 297.78
Prob > chi2 = 0.0000
Percentage of cases correctly predicted = 72%

[27] The primary measures of "goodness of fit" are displayed at the bottom of the Figure. The most frequently used indicator in logit is called the "-2 log likelihood." Based on this measure, the models are significant. In this case, the -2 log likelihoods are Chi-square variates with 22 degrees of freedom (because there are 22 explanatory variables in this model). It is the analog of the F-statistic in linear regression and tests the hypothesis that all of the coefficients are equal to zero. The figure shows that the diversion model meets the accepted standard of significance.

percentage is compared to the "null hypothesis," defined as the most frequent outcome of the diversion decision, which in this case is 67 percent.[28] Notice that the regression model predicting diversion improves on our ability to identify the offenders most likely to be diverted and not be diverted over chance alone (67 percent vs. 72 percent).

Discussion

The results from the logistic regression (Figure 5.2) help clarify the extent to which judges used the information on Worksheet D in making the decision to divert. We will begin by discussing the influence of the individual factors on Worksheet D, the overall risk total score, offense type, and pilot site location, on the decision to divert. To further aid interpretation of these results, we will end this section with a set of scenarios that show the impact of significant factors—in combination—on the likelihood of diversion.[29]

Do judges use the individual factors on Worksheet D in a consistent fashion in making the diversion decision?

The logistic regression results show that judges used only a small subset of factors on Worksheet D in a consistent way in deciding whether to divert an offender eligible for risk assessment. In this case, the term "consistent" means that there is statistical evidence that most judges employed a particular factor in the same way during the diversion decision-making process. Those factors used most consistently relate to aspects of the offender's prior record and age. Offenders with a prior history of felony/misdemeanor convictions and adjudications were less likely to be diverted than offenders without this past criminal history.[30] Similarly, offenders with one or more prior felony drug convictions and adjudications were less likely to be

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[28] That is, in about 33 percent of the cases in our sample, the offender *was* diverted, meaning that in about 67 percent of the cases the offender was *not* diverted. Therefore, the null hypothesis, or best guess, would be to predict no diversion, and one would be right about 67 percent of the time.

[29] To check for the presence of multicollinearity, we employed the variance inflation factor (VIF), defined as follows: VIF (b) = $1/(1-R_i^2)$. Where R_i^2 is the squared multiple correlation coefficient between xi and the other explanatory variables. Maddalla (1988, 228) interprets this quantity as the ratio of the actual variance of the coefficient to what it would have been if the x variable were uncorrelated with all of the other x's in the model. Kennedy (1985, 153) indicates that as a rule of thumb, whenever VIF > 10 there is an indication of harmful multicollinearity. Collinearity diagnostics in Stata reveal that the condition index between the independent variables is 4.26. None of the VIF's associated with the independent variables exceed 10. Therefore, potential problems associated with multicollinearity can be ruled out.

[30] On Worksheet D this factor is a composite of the number of prior misdemeanor and felony convictions and adjudications. For example, a score of one on the worksheet may result from an offender having no prior felonies and one or two misdemeanors or one felony and no misdemeanors. As seen on the worksheet, there are often many ways to receive a particular score. Moreover, there is no way to differentiate prior felony from prior misdemeanor convictions. Analysts examined many alternative ways of coding this variable before adopting the current coding scheme. In this analysis, a score of one or more points on this variable is coded "1" and a score of zero is coded "0." Thus, the analysis distinguishes offenders that have no prior felony or misdemeanor convictions and adjudications from those that do, rather than the number of prior misdemeanor and felony convictions and adjudications.

diverted than offenders without a prior felony drug conviction and adjudication. In addition, judges took into account the age of offenders in deciding whom to divert. Offenders 20 to 27 years of age were more likely to be diverted than offenders under the age of 20 or over the age of 27.[31] While it is unclear why these differences exist, judges did seem to treat offenders in the middle age range differently from those younger and older. Finally, there is no evidence that the remaining factors on Worksheet D—the other demographic information (gender, employment status, and marital status), instant offense information (offender alone and additional offenses), and a subset of the prior record information (prior arrest or confinement in the past 12 months and prior adult incarcerations)—were used in a consistent way by judges in the decision to divert.

We might interpret this to mean that the decision to divert was not shaped much by the worksheet factors, but to do so might mean that we are ignoring the forest for the trees. Judges likely differ on the relevance of particular factors, or precisely how each factor should be "weighted," relative to other factors in the diversion decision. Recall that there are many potential configurations among the 11 factors, and that there are many ways to obtain a particular risk score. So, while some judges may discount a particular factor, other judges emphasize it, and the ultimate result may be that positive scores on more factors (leading to a higher total risk score) drives the diversion decision. The decision to divert may therefore rest more on the *aggregate* risk score than on the score of any particular factor on the worksheet.

The notion that total risk score is an offender *gestalt* is strongly supported by our analysis. Offenders with lower risk scores were more likely to be diverted than offenders with higher scores. As can be seen in Figure 5.4, offenders with total risk scores of 12 or less were more likely to be diverted than offenders with risk scores over 12. Moreover, offenders with total risk scores under seven were more likely to be diverted than offenders who scored between seven and nine, and both groups were more likely to be diverted than offenders who scored between 10 and 12. Once again, the results suggest that judges used a more "bottom line" metric in making the decision to divert, rather than a multitude of individual risk factors.

What role did offense type play in the decision to divert?

The risk assessment instrument is designed to apply uniformly across offense types. However, the logit results reveal that judges placed a primacy on offense type in deciding on diversion. Fraud offenders were significantly more likely to be diverted than drug and larceny offenders, and drug offenders were more likely to be diverted than larceny offenders. The source of significance in our analysis is clear from the following figure, which shows the actual rate of diversion for eligible offenders based on offense type and the worksheet recommendation.

Of offenders who scored nine or less on Worksheet D, 65 percent of fraud offenders and 60 percent of drug offenders were diverted, but only 40 percent of larceny offenders. The figure shows that, no matter whether an offender was recommended for diversion or not,

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[31] When using dummy variables to represent a set of categories, the number of these variables required is one less than the number of categories. As such, for age the reference category is 28 years and older, for offense type it is fraud, for the pilot sites it is Fairfax, and for the risk scores it is 16 and over.

larceny was the least diverted offense type, and fraud the most. Hence, even after controlling for all the factors on Worksheet D, the analysis shows that judges used offense type as a cue in deciding whether to divert a particular offender, and that they were significantly less likely to divert larceny offenders, whom they viewed as the greatest risk.

Figure 5.3
Diversion of Eligible Offenders by Offense Type and Risk Recommendation

	Drug	Fraud	Larceny
9 or Less			
Not Diverted	105 (40%)	35 (35%)	75 (60%)
Diverted	155 (60)	65 (65)	50 (40)
Greater than 9			
Not Diverted	534 (77)	172 (57)	448 (79)
Diverted	159 (23)	129 (43)	116 (21)

Was there variation between the pilot sites regarding the likelihood of diversion?

In addition to the distinction based on offense type, the logistic regression also shows there was variation in the likelihood of diversion among the pilot sites. The results indicate that judges in Henrico and Danville were less likely to divert offenders than those in Fairfax County. This difference may be a function of different local legal cultures, or simply a function of the availability of alternatives in these sites.

How do we bring these results together?

The logistic regression results provide a picture of which factors are important predictors of diversion. However, our above discussion focused on the impact of one factor at a time. For a greater understanding of the combined impact of some of these significant predictors, we have constructed a figure that shows the likelihood of diversion under different conditions while holding all other factors at their mean. This allows us to see how the probability of diversion varies across a range of situations.

Figure 5.4 illustrates the impact of three distinct factors on the likelihood of diversion. The figure shows offenders with no prior record or prior drug offense on the top half, and

Figure 5.4
Probability of Diversion Under Varying Conditions

	Risk Score				
	<7	7 to 9	10 to 12	13 to 15	>15
No Prior/No Prior Drug					
Drug	0.65	0.61	0.40	0.35	0.31
Fraud	0.80	0.77	0.59	0.54	0.49
Larceny	0.58	0.54	0.33	0.29	0.25
Prior/Prior Drug					
Drug	0.44	0.41	0.23	0.19	0.16
Fraud	0.63	0.60	0.39	0.34	0.29
Larceny	0.37	0.34	0.18	0.15	0.13

offenders with a prior record score of one or more and a prior drug score of one or more, on the bottom half. Offense type and total risk score are also provided. Each cell in the figure shows the likelihood of diversion under varying combinations of these three factors. For example, a fraud offender with no prior record and a risk score less than seven has a .80 chance of being diverted, while a larceny offender with a prior record and prior drug offense and a risk score greater than 15 has a .13 chance of being diverted.[32]

There is a noticeable drop-off in the likelihood of diversion as an offender's risk score goes from less than or equal to nine to over nine. For example, the marginal difference in the likelihood of diversion for a drug offender with no priors and a risk score less than seven compared to a similar offender with a risk score between seven and nine is .04 (.65-.61). By contrast, the difference for these same offenders with scores of seven to nine and 10 to 12 is .21 (.61-.40). This trend can be found throughout the different offense types, and for offenders with and without priors. This suggests that judges viewed the established threshold of nine as an important delineator of risk.

As we can see, judges were selective in the factors they used in making the decision to divert. They tended to focus on only a few of the Worksheet D factors (prior score, prior felony drug convictions, and age), and two general cues (the offense type and the risk total). Specifically, prior felony and misdemeanor convictions, as well as prior drug convictions, reduced the likelihood of diversion. As well, offenders aged 20 to 27 were more likely to be diverted than either older or younger offenders. Further, as risk totals increase the likelihood of diversion falls. Finally, larceny offenders were less likely to be diverted than fraud or drug offenders.

In the next section we will look at how well the factors on the risk assessment instrument predicted the likelihood of recidivism. From this we will be able to determine how well judicial intuition about which offenders to divert, based upon cues and a subset of factors, fit with recidivism. How closely is the limited set of factors judges used most consistently in their diversion decisions related to future recidivism? Are there other factors on Worksheet D that predict recidivism, and hence risk?

Recidivism in the Context of Risk Assessment

Recidivism analysis is complex. There is substantial literature on the subject, with many alternative ways to define, measure, and estimate acts of recidivism. For this reason, we will proceed in a deliberate fashion–tying our particular research design decisions to the literature, and explaining the mechanics and interpretation of the statistical techniques we employed. The analysis that follows uses a multifaceted approach to examine the relationship between recidivism and the risk assessment instrument. In the first part of this section, we will provide an overview of the approaches to measuring recidivism and detail our specific measurement strategies. In the

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[32] The likelihood of diversion when all factors are held at their mean is .31. The likelihood of diversion for unemployed, unmarried male, offenders less than 20 years of age is .28, when all other factors are held at their mean.

second part, we will clarify the relationship between a range of offender characteristics and the likelihood of recidivism. In doing so, we will use the "survival analysis" techniques of Kaplan-Meier and Cox regression to examine the incidence and timing of recidivism.

Measuring Recidivism

The word recidivism derives from the Latin *recidere*, meaning to fall back. Maltz wrote, a "recidivist is one who, after release from custody for having committed a crime, is not rehabilitated. Instead, he or she falls back or relapses into former behavior patterns and commits more crimes" (54). The rate of recidivism is the fraction of a population (sample) that has experienced at least one failure (e.g., new arrest or new conviction) in a specified time period (Greenwood and Turner, 270). Numerous studies focused on recidivism differ along several dimensions. Three basic criteria must be defined:

1. What is the operational definition of recidivism (e.g., a new arrest, a new conviction, a new commitment to prison)?
2. In studying recidivism, how long should offenders be tracked following release (e.g., one year, three years)?
3. What methodological approach is most applicable for studies of recidivism (e.g., a simple measure of recidivate/not recidivate, or more comprehensive survival models)?

In the next section we outline the pros and cons of alternative approaches to the study of recidivism, and clarify the rationale for the method we used.

How do we define recidivism?

The three most common measures of recidivism are *rearrest* (DeJong 1997; Gainey, Payne and O'Toole 2000; Stanz and Tewksbury 2000; Uggen 2000), *reconviction* (Bonta, Wallace-Capretta, and Rooney 2000; Bunday 1992; Witte and Schmidt 1977), and *recommitment to prison* (Florida Department of Corrections 1999; Joo, Ekland-Olson, and Kelly 1995; Schmidt and Witte 1988). While many studies focus on only one measure of recidivism, some studies use multiple measures (e.g., both rearrest and reconviction) to gain a broader perspective on recidivist activity (Beck 1989; Lanza-Kaduce, Parker, and Turner 1999; Turner and Petersilia 1996). Each way of measuring recidivism has advantages and disadvantages, and in many cases the measure chosen is related to the availability of data (Schmidt and Witte, 9).[33]

Opinions differ on which measure is best. A review of the literature highlights several reasons why some analysts use a broad concept of recidivism (arrest) while others prefer a narrow concept (conviction and commitment). For example, Beck and Shipley stated,"[i]n previous studies of recidivism, criminologists have concluded that in the aggregate rearrest is

[33] The availability of data, particularly individuals' criminal history, is a natural constraint on recidivism studies. Thus, many studies are forced to use the measure of recidivism that is available or most easily accessible. For example, Schmidt and Witte (1988) use timing of return to prison because "this was the only definition of recidivism that our data would support" (9).

the most reliably reported measure of recidivism" (2). Maltz (1984) believes arrest is a better indicator of offender conduct than conviction because, at conviction, plea-bargaining can make the charge bear little resemblance to the offense committed (57-58). Of course, one potential problem with arrest as the measure of recidivism is that standards for arrest are less rigorous than for conviction. However, Beck and Shipley (1989) believe that while some rearrested individuals may be innocent of the crime they are charged with, using conviction as the sole measure of recidivism understates "true recidivism rates," because not all offenders are prosecuted or go to jail (2).[34]

By contrast, Bonta, Wallace-Capretta, and Rooney (2000) chose reconviction as the measure of recidivism because it is based on a finding of guilt in court. The authors believe that using conviction reduces the possibility of overstating criminal behavior. Likewise, Nirel et al. (1997) use conviction to measure recidivism, claiming that it is a less arbitrary and more legally accurate measure, and that it reflects the notion that arrested individuals may not be guilty of the offense for which they are being tried (78). Finally, a report by the Florida Department of Corrections (1999) recognized that arrest is the broadest measure of recidivism, but that it does not guarantee that a new offense actually occurred. Conviction, on the other hand, indicates a new arrest, but not the seriousness of the offense. Thus, the report used commitment as the measure of recidivism because it indicates that a new offense of a serious nature did occur.

Finding: Studies of recidivism should attempt, when feasible, to incorporate multiple measures to improve validity.

Choosing how to measure recidivism should also be guided by the purposes of the study. If the issue is estimating the general cost of repeat offending, a broad measure such as "new arrests" is appropriate. But if the purpose is to estimate the impact of recidivism on corrections resources then felony reconviction/recommitment may be best.

Given the considerations discussed above, we used two distinct measures of recidivism, one based on arrest, and one on conviction. The first measure defines recidivism as any new felony or misdemeanor arrest. Time to recidivism is measured as the number of days between entering a program and the time of a new arrest.

The second measure treats recidivism as any new felony or misdemeanor conviction. This measures the time to recidivism as the number of days until a new arrest *for those offenders subsequently convicted*. We used this measure to remove the influence of differences in court processing time that may exist in convicting offenders. Using multiple measures of recidivism allows for both a broad and narrow conception of recidivism. The two measures incorporate both felonies and misdemeanors to ensure that the number of events is large enough for statistical analysis. The number of recidivistic events for the 555 diverted offenders tracked in our evaluation is shown in Figure 5.5.

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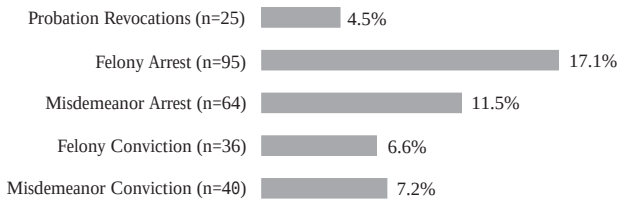
[34] It should be noted that measures of arrest, reconviction, and recommitment might all be deflated due to the fact that many illegal activities and crimes go undetected and thus unreported. In addition, Beck and Shipley, in a study of 108,580 persons released from prisons in eleven states in 1983, noted that one of every eight rearrests occurred in states other than the state in which the prisoner was released (1). Consequently, many of these recidivistic events are incapable of being tracked across states and are not captured in studies of recidivism.

Of the 555 diverted offenders, 159 offenders (28.6 percent) were rearrested for a new felony or misdemeanor offense, while 76 offenders (13.8 percent) were reconvicted on a new felony or misdemeanor. As mentioned earlier, the VCSC measured "risk" (or failure after release from custody or supervision) as reconviction for a new felony offense. While we recognize that the risk assessment instrument was constructed to "identify those offenders recommended by the sentencing guidelines for a term of incarceration who have the lowest probability of being reconvicted of a felony crime" (Virginia Criminal Sentencing Commission, Annual Report, 1999, p. 77), the few felony reconvictions in the follow-up group, only 36 of 555 offenders, renders this measure of recidivism inapplicable. Instead, our analysis uses two measures of recidivism: (1) arrest for a new misdemeanor or felony, and (2) conviction for a new misdemeanor or felony.

Figure 5.5
Recidivism Measures



How long should offenders be tracked in studies of recidivism?

Another issue on which previous studies have taken different approaches regards the length of time that individuals should be tracked in studies of recidivism. The National Advisory Commission on Criminal Justice Standards and Goals recommended that studies of recidivism use a three-year follow-up period. Maltz, on the other hand, argued that this is an arbitrary figure, and pointed out that most studies focus only on one year (1984, 22 ft. note 4). We reviewed recidivist studies that used follow-up times of one year (Bonta, Wallace-Capretta, and Rooney 2000; Greenwood and Turner 1993; Lanza-Kaduce, Parker, and Thomas 1999), three years or less (Beck and Shipley 1989; Florida Department of Corrections 1999; Gross et al. 2000; Joo et al.1995; Nirel et al. 1997) and five years or more (Stanz and Tewksbury 2000). The major determinant of choosing a follow-up time is, once again, the availability of data, as well as the time between the enactment of a program and the date of evaluation. Nevertheless, using shorter rather than longer follow-up times can lead to different conclusions about the recidivist process.

Recidivism rates are usually the highest within the first year of release from incarceration or a judicial intervention (Beck and Shipley 1989; Uggen 2000). In one study of 108,580 persons released from prison in 11 states in 1983, Beck and Shipley found that four of every 10 persons were rearrested within the first year, and an estimated 63 percent were rearrested within three years (3). Similarly, nearly one in four were convicted of a new crime within the first year, and an estimated 46.8 percent were reconvicted within three years. Ostrom et al. (1999), in a study

of recidivism in Virginia, noted that 60 percent of offenders rearrested for any crime, and 56 percent of offenders re-arrested for a felony, were arrested in the first 12 months following release. Therefore, recidivism studies that use a short follow-up period (e.g., one year) should be aware that most recidivism occurs during this limited period, but it is not representative of the entire process. Studies using longer follow-up periods offer a more complete picture of recidivism, a picture that encompasses short-term deterrence (offender returns to criminal behavior after a short period), long-term deterrence (return after an extended period), and desisting (offender never returns to criminal behavior).

Finding: Most experts recommend a follow-up time period of one to three years for recidivism studies. However, in reality, follow-up time is typically a function of the availability of data.

In this study we used a follow-up period averaging 24 months for all offenders. The actual follow-up times vary from roughly one to three years, based on the offender's sentencing date. The variation in tracking time is a direct result of how the pilot project was implemented. Four of our pilot sites were underway by March 1998, and two additional sites were added in March 1999. Offenders sentenced prior to September 1999 were eligible for inclusion in the study. All offenders were monitored for evidence of recidivism through August 2000. The evaluation team recognizes the limitations of using a limited follow-up period, but we were constrained by the different start dates of the various pilot sites, and by the evaluation timeframe established by the National Institute of Justice.

What methodological approach is most applicable for assessing recidivism?

Studies of recidivism vary in the statistical techniques employed and whether the time to recidivism is taken explicitly into account. These differences affect both the conclusions and the generalizations one can draw from the results. Hence, it is important to understand the differences between approaches and the various strengths and limitations of each.

Several studies of recidivism treat recidivism as a dichotomous dependent variable—did the subject recidivate or not (Beck and Shipley 1989; Gross et al. 2000; Nirel et al. 1997). The statistical technique of logistic regression is typically used to estimate models of this type. The concern is that this is a static technique, that it does not account for the timing of the recidivistic event. Logit models assume that failure on the first day of study is equivalent to failure on the last day. This implies that individuals who fail early in the observation period possess the same characteristics and tendencies as those who fail late. However, Visher, Lattimore, and Linter (1991) noted that it is more likely that subpopulations of early and late failures have different characteristics (338). In addition, Chung, Schmidt, and Witte (1991) believe that logit analysis produces inefficient estimates because it exaggerates variance, which widens the confidence intervals and makes testing hypotheses more difficult. Thus, the authors concluded, "[i]f information on timing of return is available it should be used" (66).

Event history (or survival) models that incorporate the timing of recidivism represent an alternative approach (Chung, Schmidt, and Witte 1991; Fowles and Christensen 1995; Hepburn and Albonetti 1994; Schmidt and Witte 1988; Uggen 2000; Witte and Schmidt 1977). Survival modeling originated in biostatistics and operations research, and it allows one to analyze the

length of time until an event occurs (e.g., time until death of medical patients, time until equipment failure, time until a recidivistic event). This technique is superior to logit analysis because it incorporates the timing of recidivism directly into the analysis, making it more statistically efficient (Schmidt and Witte 1988). Models of this type are used to predict the number of individuals who will fail after any given length of time, and estimate the effects of various individual characteristics (called covariates) on the time to recidivism. They also serve as a way to control for relevant explanatory variables.

Why study recidivism?

Recidivism studies typically fall within two categories. They aim to evaluate the effect of some sort of intervention or to estimate the relationship between offender characteristics and recidivism rates. The first category has focused on the effectiveness of specific interventions (programs, types of sanctions, or institutional changes) in reducing recidivism. These interventions include electronic monitoring (Bonta, Wallace-Capretta, and Rooney 2000), the role of incarceration as a deterrent to future acts (DeJong 1997; Gainey, Payne, and O'Toole 2000), education and training programs (Fowles and Christensen 1995), programs for juvenile offenders (Greenwood and Turner 1993), private prisons versus public prisons (Lanza-Kaduce, Parker, and Thomas 1999), work release programs (Turner and Petersilia 1996), and changes in the administration of criminal justice (Joo, Ekland-Olson, and Kelly 1995). These studies are grounded in the literature of offender rehabilitation.

The notion that specific programs or interventions impact individuals, or rehabilitate them, has been the subject of much debate. In 1974, Martinson reviewed 231 studies of interventions to reduce recidivism and concluded that there was "little hope that we … have found a sure way of reducing recidivism through rehabilitation" (49). The claim that "nothing worked" led to changes in philosophical approaches regarding sentencing, away from rehabilitative ideals towards punishment and deterrence. Nevertheless, more recent meta-analyses (Andrews, Bonta and Hoge 1990; Gendreau, Little, Goggin 1996) showed that some programs are successful in reducing rates of recidivism. Successful programs were found to be the result of cognitive-behavioral interventions (Dowdens and Andrews 2000), programmatic factors like staff characteristics and setting (Palmer 1995), and programs that addressed criminogenic needs (Andrews, Bonta, and Hoge 1990; Gendreau, Little, and Goggin 1996).

The second category of recidivism studies identifies factors or covariates that predict recidivism. These characteristics are typically demographic or relate to an individual's interaction with the criminal justice system. Recidivism studies focused on individual characteristics (Beck and Shipley 1989; Florida Department of Corrections 1999; Gendreau, Little, and Goggin 1996; Heilbrun et al. 2000; Joo, Ekland-Olson, and Kelly 1995; Ostrom et al. 1999; Stanz and Tewksbury 2000) have included such factors as age, age at first adult arrest, education level attained, gender, incarceration length, offense type, prior record, and race. The goal of these studies is to assess whether certain characteristics (e.g., age, prior record, or offense type) are associated with higher levels of recidivism, and to aid in identifying factors associated with higher risks. For example, Beck and Shipley (1989) concluded that recidivism rates were highest among men, blacks, Hispanics, and persons who had not completed high school. Therefore, recidivism analyses should include carefully chosen, theoretically grounded covariates, so that factors associated with recidivism can be identified and risks assessed.

An important additional benefit of survival analysis is that it allows for *censored* observations. Censored observations refer to cases in which individuals do not recidivate (fail) before the end of the follow-up period. For example, the study follows offender A for one year, and during this time offender A does not recidivate. This observation is "censored" because we don't know how long, if ever, offender A will go without recidivating. We do know, however, that offender A did not recidivate at least during the study period. We refer to offenders who recidivate during the study period as *uncensored*, because we know their survival times exactly. The less desirable option for any analysis strategy is to ignore what might happen in the future. Chung, Schmidt, and Witte (1991) noted, "censoring must be taken into account in estimation, because it is not legitimate either to drop the observations with unobserved survival times (the nonrecidivists) or to set survival times for these observations equal to the length of the follow-up period" (64).

Finding: Recidivism studies should use survival analyses that address the issues of the timing of recidivistic events and censored observations, including Kaplan-Meier survival analysis and Cox regression.

An Empirical Evaluation of the Risk Assessment Instrument

In this section, we will evaluate the relationship between the risk assessment instrument and recidivism using Kaplan-Meier survival analysis and Cox regression. We will provide estimates of the probability of survival (not recidivating) at several discrete time points for various risk total thresholds and "covariates" (the different factors that comprise Worksheet D). We will also examine the effect on recidivism of shifting the risk total threshold required for a recommendation to divert. Finally, we will assess the covariates to determine whether they are significantly associated with recidivism.

We will report the results of two different measures of recidivism: (1) new arrest and (2) new arrest resulting in conviction. The former casts the widest net for measuring recidivism, and consequently provides the most comprehensive measure. However, as noted in the literature, many arrests do not result in convictions because of insufficient evidence, because the subject's rights were violated, or because the person did not commit the crime for which they were arrested. Consequently, to control for the "quality" of the arrest, we used arrests resulting in conviction as the other measure of recidivism.

The following analysis is based on the 555 offenders in our pilot study who were diverted and tracked following diversion. This sample contains individuals who were recommended for diversion by the risk assessment instrument (a score of nine or less), as well as those who were not (a score greater than nine). The diversity of offender risk scores allows us to examine the impact of shifting the threshold to various risk totals. We examined the 555 offenders by subpopulations (e.g., offenders nine or less vs. offenders more than nine) to determine how offenders recommended for diversion differed from those not recommended. We will begin with the results of our Kaplan-Meier survival analysis.

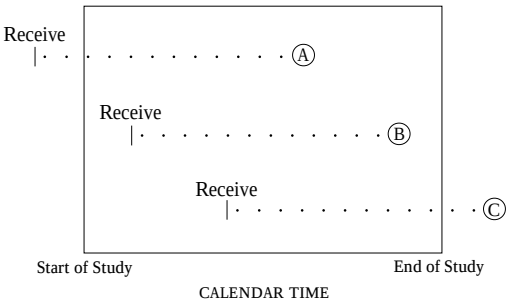
What is Kaplan-Meier survival analysis?

Kaplan-Meier (KM) survival analysis is an analytic technique, derived from biostatistics and operations research, which allows one to estimate the probability of an event not occurring

for a specified group during a designated time interval.[35] Typically, in biomedical research the event being investigated is death, and, thus, KM estimates the probability of survival (not dying). For the purposes of this evaluation, survival means that an individual has not recidivated following diversion, and KM provides an estimate of the probability they will not recidivate (they will continue to survive) at any pertinent future time.

The time between specific events is the dependent variable in KM. The duration is from a specified initial event (e.g., sentenced to alternative punishment) until a specified terminal event—a recidivistic act or the end of the study period.

Figure 5.6
An Example of Time Until Arrest and Censored Cases



The three scenarios depicted in the figure above offer an overview of key concepts. Scenario A illustrates the offender sentenced to an alternative punishment before the start of the evaluation. This scenario does not apply to the present study because the evaluation only monitored offenders sentenced to alternative punishment after the introduction of risk assessment in the six pilot sites. Scenario B represents the offender sentenced to an alternative punishment who recidivated before the end of data collection period. This individual is a recidivist (uncensored) whose survival time was the period between entering a program and the recidivistic event.[36] Finally, Scenario C represents the individual received into a program during the study who did not recidivate before the study ended (a censored observation). However, this does not imply that the individual will never commit a recidivistic act, only that it did not occur during the time under study. Therefore, the true survival time for these individuals is not known with certainty, and we need a methodological approach that can accommodate these censored observations.

Acknowledging and accounting for censored observations is essential to estimating the probability of recidivism accurately. KM survival analysis is a bivariate descriptive method that

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[35] KM utilizes a non-parametric survival function and, therefore, does not make assumptions about the functional form of the survival distribution.

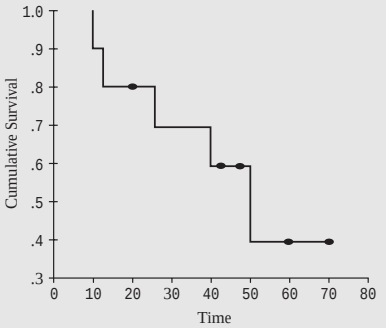
[36] It should be noted that individuals could be received into programs at various times during the period of study. Therefore, the time until recidivism is a function of the date received and the date of the recidivistic event, which both vary for different individuals within the sample.

estimates the probability of survival for sub-groups of a population (e.g., distinguishing by gender, age, etc.). There is an overview of the output, interpretation, and statistical significance of the KM procedure in the accompanying sidebar.

Kaplan-Meier results

Our analysis focuses on two fundamental issues: (1) estimating the impact on recidivism of shifting the threshold from its current value of nine points, and (2) gauging the importance of the individual risk factors on Worksheet D on our ability to predict recidivism.

Figure 5.7
Kaplan-Meier Survival Analysis: An Example



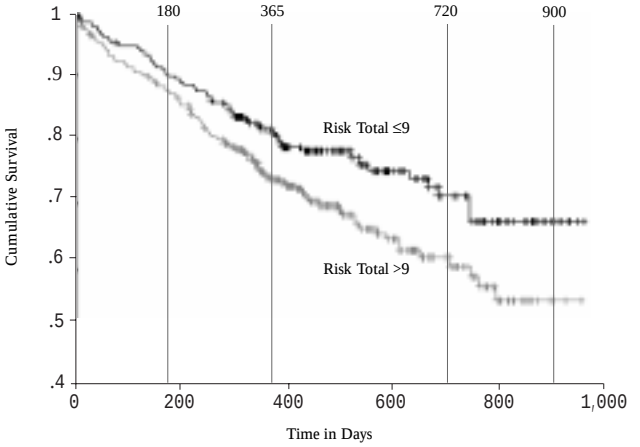
Survival Time	Status	Cumulative Survival	How Calculated
10	1	0.9	(9/10)
12	1	0.8	(8/9)(.9)
20	0	0.8	
25	1	0.686	(6/7)*(.8)
40	1	0.571	(5/6)*(.686)
42	0	0.571	
48	0	0.571	
50	1	0.381	(2/3)*(.571)
60	0	0.381	
70	0	0.381	

The KM survival function appears as a series of declining steps.[37] The downward steps represent the occurrence of an event (recidivism) and the straight line between events symbolizes a constant probability of survival. Thus, the probability of survival declines only with a recidivistic event. In the example above there are ten individuals under study. Five of these individuals commit a recidivistic act (status=1) and five are considered censored (status=0).[38] To compute the probability of survival to this point, one must calculate the probability of surviving to the end of the time interval, conditional on being a survivor at the beginning of the interval. In the example, nine out of the 10 (.9) individuals survived 10 days. At the next time point corresponding to a recidivistic event, 12 days, eight of nine individuals survived (.889). However, this only represents the conditional probability of surviving between the tenth and twelfth day. The overall probability of surviving is .889 times the probability of surviving up to that point (0.9), or 0.8. When there is a censored observation (e.g., at 20 days) we know that the individual did not recidivate up to this point, and the probability of surviving 20 days is also 0.8. Nevertheless, the censored observation acts to reduce the number of individuals surviving in future time periods, so that at the next point in time the number of individuals surviving is reduced by the censored case. In this example, at 25 days the cumulative probability of survival is (6/7)*(.8), or .686. This calculation process is continued until the last event is accounted for (Bland and Altman 1998).

[37] The series in Figure 5.7 represents a hypothetical set of data to illustrate the mechanics of the KM procedure.
[38] Recidivism is represented by declines in the cumulative survival curve, and the bullets on the curve represent censored observations.

Figure 5.8 displays the output for the cumulative survival functions of individuals scoring nine or less on the risk assessment instrument, and of those scoring more than nine.

Figure 5.8
An Example of Kaplan-Meier Survival Analysis for Risk Total



Of the 555 individuals tracked in the evaluation, 218 scored nine or less, 53 recidivated (non-felony or felony arrest), leaving 165 censored cases. On the other hand, 337 individuals scored nine or more, 106 recidivated, leaving 231 censored cases. A look at the figure reveals that the cumulative survival functions for both population groups decline over time. That is, the probability of recidivism increases over time, as fewer people recidivate in the first 180 days than in the first 365 days.

In addition, we can see that individuals who scored more than nine on the risk assessment instrument failed at a faster rate than individuals who scored nine or less. For example, the probability of surviving 180 days is .90 for those who scored nine or less, and .87 for those who scored more than nine. This means that individuals deemed lower risk had 90 chances in a hundred of not recidivating before 180 days. Conversely, at 180 days, the probability of recidivating (failure) for those of low risk was .10. Additionally, at 365 days those deemed lower risk had a .82 probability of survival, and those who scored more than nine had a .74 probability of survival. Furthermore, lower risk individuals had a 71 percent chance of surviving 720 days, and higher risk individuals had a 61percent chance of not recidivating during this duration. Finally, at 900 days the probabilities of survival were .68 and .55 respectively.

When we look at the survival curves in their entirety the question arises, were there significant differences in survival rates between those who scored nine or less on the risk assessment instrument and those who scored more than nine? The log-rank test provides a way to answer this question. In the example above, the two series are significantly different (.026) at the .05 level, and we can thus conclude that offenders characterized as lower risk recidivated at a lesser rate than individuals characterized as high risk.

Does shifting the threshold from the risk score of nine affect the probability of survival and the number of offenders who recidivate?

A critical component of a risk assessment instrument is the threshold score, which differentiates high from low risk groups. Choosing a threshold score is usually informed by the results of statistical analysis, but it is ultimately a policy decision based on the level of risk tolerable to policymakers. Because our sample of diverted offenders contained a wide range of risk scores, it was possible to examine if and how recidivism rates varied along the spectrum of risk scores. We produced sub-populations by dividing offenders into groups based on risk score totals (e.g., seven, nine, 12). We then tested to determine whether offenders within certain sub-populations recidivated at similar rates, or different rates, than offenders in other sub-populations. The Kaplan-Meier survival technique generated probabilities of survival over discrete points in time for various sub-groups, and allowed for a comparison of differences between groups.

Figures 5.9 (recidivism as felony/misdemeanor rearrest) and 5.10 (recidivism as rearrest resulting in felony/misdemeanor conviction) provide an overview of the probability of surviving 180, 365, 720, and 900 days for threshold cut-points seven through 15. In general, as the risk score is raised, the probability of surviving to each time point declines. This finding supports the general notion that the instrument is tapping into risk related factors, so that higher scores correlate with higher rates of recidivism.

Figure 5.9
Survival Probability at 180, 365, 720, and 900 Days By Risk Score (Arrest)

	180 Days	365 Days	720 Days	900 Days
Risk Total ≤ 7	0.87	0.83	0.80	0.80
Risk Total > 7	0.88	0.76	0.62	0.56
Risk Total ≤ 8	0.89	0.80	0.76	0.74
Risk Total > 8	0.88	0.76	0.60	0.55
Risk Total ≤ 9	**0.90**	**0.82**	**0.71**	**0.68**
Risk Total > 9	**0.87**	**0.74**	**0.61**	**0.55**
Risk Total ≤ 10	0.89	0.81	0.7	0.67
Risk Total > 10	0.88	0.74	0.6	0.53
Risk Total ≤ 11	0.88	0.79	0.69	0.66
Risk Total > 11	0.88	0.75	0.58	0.48
Risk Total ≤ 12	0.88	0.79	0.70	0.64
Risk Total > 12	0.89	0.75	0.54	0.54
Risk Total ≤ 13	0.88	0.79	0.69	0.64
Risk Total > 13	0.90	0.74	0.51	N/A
Risk Total ≤ 14	0.89	0.79	0.69	0.64
Risk Total > 14	0.87	0.69	0.48	N/A
Risk Total ≤ 15	0.88	0.78	0.67	0.62
Risk Total > 15	0.89	0.70	0.54	N/A

Note: Current worksheet threshold in bold

But does the analysis indicate that moving the threshold of nine down to, say, seven or up to, say, 10, 12, or even 15, produces a significant difference in the rate of recidivism? Figures 5.11 and 5.12 show the survival curves obtained by grouping offenders according to a series of different thresholds. In essence, they show what happens when we redefine "low risk" and "high risk" offenders by moving the threshold value up or down. For example, the first figure in 5.11 compares the likelihood of recidivism between offenders who scored seven or less on the instrument to those who scored above seven. In contrast, the final figure in 5.11 compares recidivism rates between offenders who scored 15 or less on the instrument to those who scored more than 15. In all instances, offenders in the "high risk" group had a statistically higher rate of recidivism than offenders in the "low risk" group. Moreover, it did not matter whether "low risk" was defined as seven points or less, defined as 15 points or less, or which measure of recidivism we used.[39] This result shows that a wide range of threshold values will divide offenders into groups that recidivate at significantly different rates. The primary policy issue is that more offenders will be recommended for diversion as the threshold rises, and the number of offenders diverted will directly affect recidivism.

Figure 5.10
Survival Probability at 180, 365, 720, and 900 Days By Risk Score (Arrest Resulting in Conviction)

	180 Days	365 Days	720 Days	900 Days
Risk Total ≤ 7	0.91	0.89	0.89	0.89
Risk Total > 7	0.93	0.87	0.82	0.82
Risk Total ≤ 8	0.93	0.90	0.88	0.88
Risk Total > 8	0.93	0.86	0.82	0.80
Risk Total ≤ 9	**0.92**	**0.90**	**0.88**	**0.85**
Risk Total > 9	**0.92**	**0.84**	**0.81**	**0.81**
Risk Total ≤ 10	0.92	0.90	0.88	0.86
Risk Total > 10	0.93	0.84	0.80	0.80
Risk Total ≤ 11	0.93	0.89	0.87	0.86
Risk Total > 11	0.93	0.84	0.78	0.78
Risk Total ≤ 12	0.92	0.88	0.87	0.85
Risk Total > 12	0.92	0.84	0.77	0.77
Risk Total ≤ 13	0.92	0.89	0.86	0.85
Risk Total > 13	0.94	0.82	0.75	N/A
Risk Total ≤ 14	0.93	0.89	0.86	0.85
Risk Total > 14	0.92	0.79	0.72	N/A
Risk Total ≤ 15	0.93	0.88	0.85	0.84
Risk Total > 15	0.90	0.78	0.75	N/A

Note: Current worksheet threshold in bold

[39] We used the log rank test as a test of significance. The only value that did not reveal a significant difference was when the threshold was drawn at seven or eight, and arrest resulting in conviction was used as a measure of recidivism. The lack of significance for these cut points is a function of the limited number of recidivistic events for the lowest groups.

Figure 5.11
Kaplan-Meier Survival Curves for Risk Total (recidivism measured as arrest)

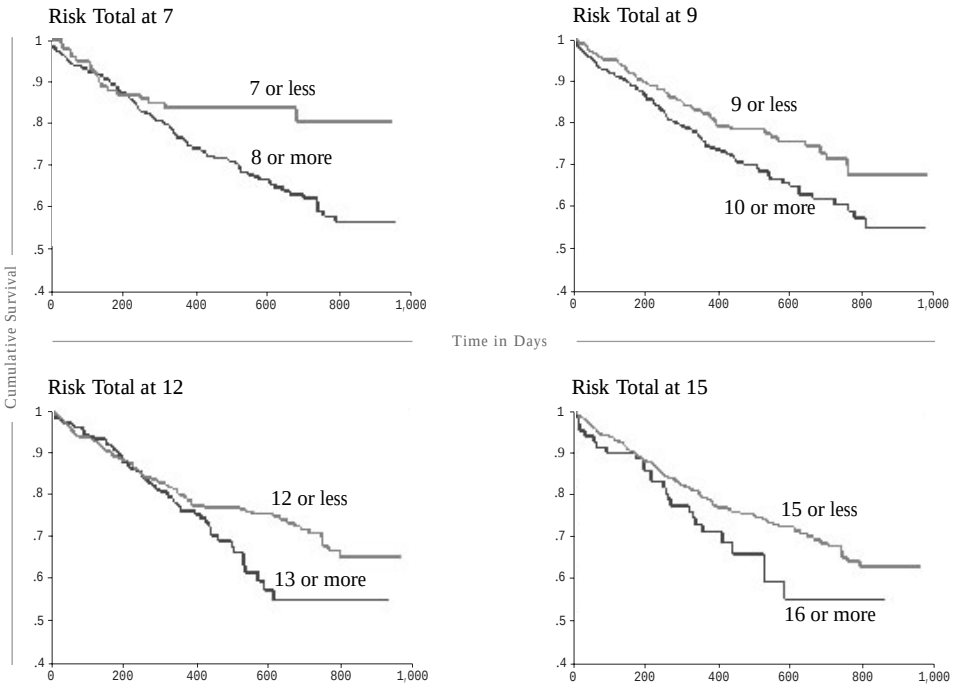
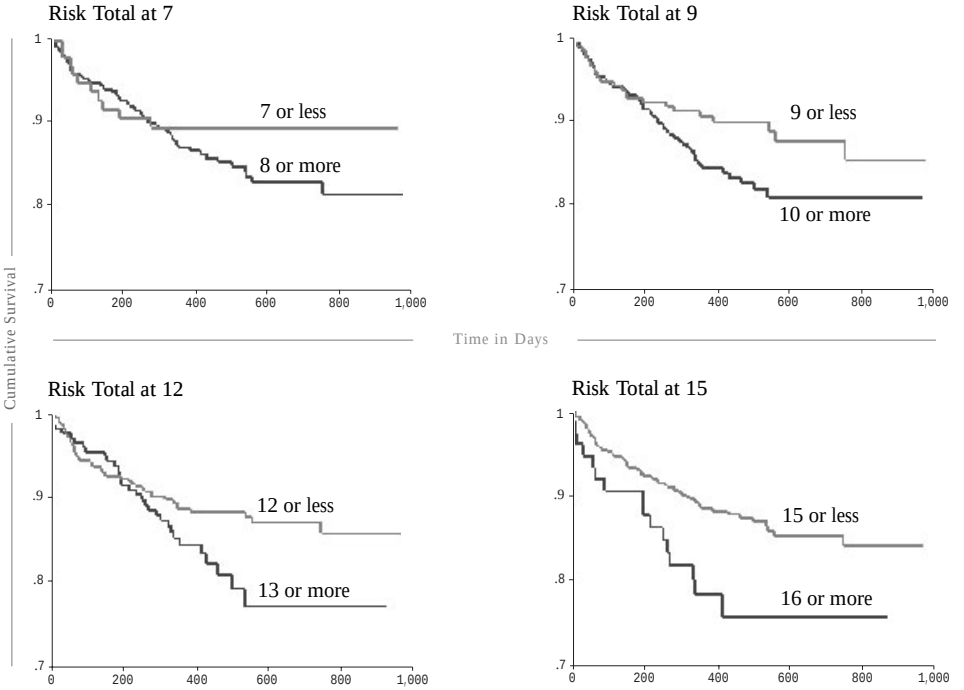


Figure 5.12
Kaplan-Meier Survival Curves for Risk Total (recidivism measured as arrest resulting in conviction)



Figures 5.13 (arrest) and 5.14 (arrest resulting in conviction) illustrate that as the risk threshold is increased the number of offenders recommended for diversion increases. For example, at a threshold of nine 218 offenders were recommended for diversion. But the number of offenders recommended for diversion rises to 481 if the threshold is increased to 15. Therefore, shifting the threshold increased the number of eligible offenders recommended for diversion. However, increasing the number of recommended offenders would also increase the number of offenders deemed low risk who actually recidivate (false negatives). For example, at the threshold of nine, only 53 low risk offenders were rearrested, while a threshold of 15 results in 133 offenders being rearrested.[40] *Nevertheless, while the raw number of recidivist offenders increases, the percentage of recidivist offenders remains relatively constant for threshold values between nine and 15.*

Figure 5.13
Recidivism Rates By Risk Score (Arrest)

	Total Number of Cases	Number Who Recidivate	Percent Recidivating
Risk Total ≤ 7	100	18	18.0%
Risk Total > 7	455	141	31.0
Risk Total ≤ 8	151	33	21.9
Risk Total > 8	404	126	31.2
Risk Total ≤ 9	**218**	**53**	**24.3**
Risk Total > 9	**337**	**106**	**31.5**
Risk Total ≤ 10	269	66	24.5
Risk Total > 10	286	93	32.5
Risk Total ≤ 11	327	87	26.6
Risk Total > 11	228	72	31.5
Risk Total ≤ 12	368	99	26.9
Risk Total > 12	187	60	32.1
Risk Total ≤ 13	411	110	26.8
Risk Total > 13	144	49	34.0
Risk Total ≤ 14	456	121	26.5
Risk Total > 14	99	38	38.4
Risk Total ≤ 15	481	133	27.7
Risk Total > 15	74	26	35.1

Note: Current worksheet threshold in bold

[40] It should be noted that judicial agreement with the risk assessment recommendations might change if the threshold were shifted. A shift in the threshold may lead judges to act differently, and some of the 555 offenders diverted would not be diverted, or some offenders not previously diverted would be. For the discussion that follows, we assumed that judicial behavior would remain consistent, since we are unable to predict what impact these changes may have on judicial compliance.

When the threshold is set at the low level of seven (only 100 offenders are recommended for diversion), 18 percent of offenders are rearrested. When the threshold is increased to nine, 24.3 percent of offenders are rearrested. Increasing the threshold value to 15 raises the share of recidivist offenders only slightly, to 27.7 percent. We observed a similar pattern when recidivism was counted as an arrest resulting in a felony/misdemeanor reconviction.

These results imply that Virginia policymakers may want to consider raising the threshold value so that more eligible offenders are recommended for diversion. Raising the threshold would not dramatically increase the percentage of "low risk" offenders who recidivate. However, it is important to stress that raising the threshold would increase the raw number of recommended offenders who do recidivate. Thus, it is apparent that raising the threshold, or setting an appropriate threshold, is a policy decision that depends on the level of risk deemed acceptable, and the number of recidivist offenders deemed tolerable.

Finding A: Raising the threshold increases the raw number of offenders deemed low risk who actually recidivate. However, the percent of offenders deemed low risk that recidivate remains relatively constant if the threshold is increased.

Finding B: Raising the threshold is a policy decision that is contingent upon the level of acceptable risk and the number of recidivistic events deemed tolerable.

Figure 5.14
Recidivism Rates By Risk Score (Arrest Resulting in Conviction)

	Total Number of Cases	Number Who Recidivate	Percent Recidivating
Risk Total ≤ 7	100	11	11.0%
Risk Total > 7	455	65	14.3
Risk Total ≤ 8	151	16	10.6
Risk Total > 8	404	60	14.9
Risk Total ≤ 9	**218**	**24**	**11.0**
Risk Total > 9	**337**	**52**	**15.4**
Risk Total ≤ 10	269	30	11.2
Risk Total > 10	286	46	16.1
Risk Total ≤ 11	327	38	11.6
Risk Total > 11	228	38	16.7
Risk Total ≤ 12	368	44	12.0
Risk Total > 12	187	32	17.1
Risk Total ≤ 13	411	49	11.9
Risk Total > 13	144	27	18.8
Risk Total ≤ 14	456	54	11.8
Risk Total > 14	99	22	22.2
Risk Total ≤ 15	481	60	12.5
Risk Total > 15	74	16	21.6

Note: Current worksheet threshold in bold

What risk factors are important in predicting recidivism?

The risk total on Worksheet D is calculated by summing the scores of 11 separate factors. We have just shown that as the risk total rises, so does the likelihood of future recidivism. But what is the relationship between each of the 11 individual factors (also called covariates) on Worksheet D and our ability to predict recidivism? We found that only a subset of factors on the instrument (i.e. prior record) correlated with an offender's diversion. Would we have a similar finding with recidivism? Moreover, are the factors targeted by judges in the diversion decision also

Figure 5.15
Survival Probability at 180, 365, 720, and 900 Days By Covariates (Arrest)

	180 Days	365 Days	720 Days	900 Days
Female	0.93	0.84	0.70	0.66
Male	0.86	0.75	0.63	0.58
Age 28+	0.88	0.76	0.66	0.62
Age <28	0.88	0.80	0.64	0.58
Married	0.87	0.76	0.63	0.61
Never Married	0.89	0.78	0.67	0.60
Employed	0.88	0.80	0.68	0.63
Unemployed	0.89	0.74	0.61	0.58
Offender Not Alone When Primary Offense Committed	0.88	0.79	0.67	0.64
Offender Alone When Primary Offense Committed	0.88	0.76	0.64	0.59
Additional Offenses (<6)	0.88	0.77	0.69	0.63
Additional Offenses (≥6)	0.91	0.78	0.49	N/A
No Prior Arrest/Confine Past 12 Mos.	0.90	0.80	0.71	0.67
Prior Arrest/Confine Past 12 Mos.	0.87	0.75	0.60	0.54
Total Fel/Mis Conv/Adjud. (Risk Score ≤ 1)	0.90	0.82	0.73	0.68
Total Fel/Mis Conv/Adjud. (Risk Score > 1)	0.87	0.75	0.61	0.57
No Prior Felony Drug Conv/Adj	0.88	0.79	0.67	0.62
Prior Felony Drug Conv/Adj	0.87	0.71	0.58	0.54
No Prior Adult Incarcerations	0.92	0.84	0.7	0.68
Prior Adult Incarcerations (1-2)	0.88	0.77	0.68	0.62
Prior Adult Incarcerations (≥3)	0.85	0.7	0.55	0.51
No Prior Juv. Incarcerations/Commitments	0.88	0.77	0.65	0.61
Prior Juv. Incarcerations/Commitments	0.94	0.77	0.64	N/A
Drug	0.88	0.78	0.71	0.7
Fraud	0.91	0.81	0.63	0.57
Larceny	0.88	0.72	0.56	0.43

Note: Covariates found to have significant differences are in bold.

significantly related to the likelihood of recidivism? In this section, we used KM to evaluate each factor on the risk instrument, and its significance in predicting recidivism. This analysis focused solely on the 555 diverted offenders.

We defined recidivism as (1) rearrest, and (2) rearrest resulting in conviction. Figures 5.15 and 5.16 illustrate the probability of survival at discrete time points for the covariates on Worksheet D, and the type of offense (drug, fraud, and larceny) for each measure of recidivism. The covariates in bold express significant differences between subgroups, including gender,

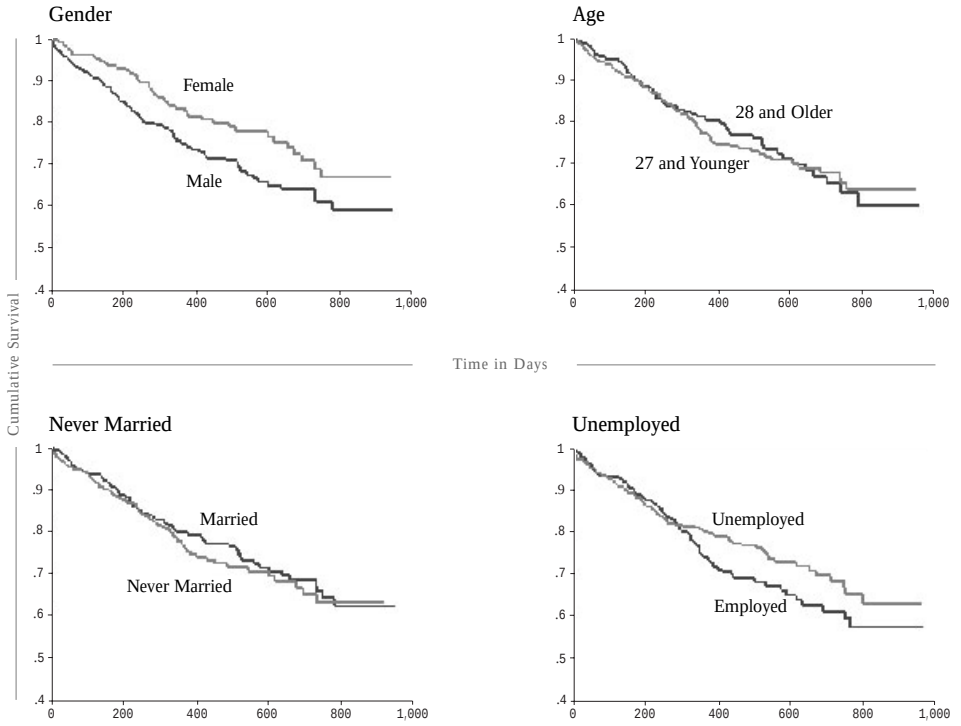
Figure 5.16
Survival Probability at 180, 365, 720, and 900 Days By Covariates (Arrest Resulting in Conviction)

	180 Days	365 Days	720 Days	900 Days
Female	**0.96**	**0.92**	**0.90**	**0.88**
Male	**0.91**	**0.84**	**0.80**	**0.80**
Age 28+	0.92	0.87	0.83	0.81
Age <28	0.93	0.88	0.85	0.85
Married	0.92	0.86	0.83	0.83
Never Married	0.93	0.87	0.85	0.83
Employed	0.91	0.86	0.82	0.80
Unemployed	0.94	0.88	0.86	0.86
Offender Not Alone When Primary Offense Committed	0.92	0.86	0.84	0.84
Offender Alone When Primary Offense Committed	0.93	0.87	0.84	0.82
Additional Offenses (<6)	0.92	0.87	0.84	0.83
Additional Offenses (≥ 6)	0.94	0.86	0.81	N/A
No Prior Arrest/Confine Past 12 Mos.	**0.95**	**0.91**	**0.90**	**0.88**
Prior Arrest/Confine Past 12 Mos.	**0.91**	**0.84**	**0.79**	**0.79**
Total Fel/Mis Conv/Adjud. (Risk Score ≤ 1)	**0.94**	**0.91**	**0.89**	**0.89**
Total Fel/Mis Conv/Adjud. (Risk Score > 1)	**0.92**	**0.85**	**0.81**	**0.79**
No Prior Felony Drug Conv/Adj	0.93	0.88	0.85	0.85
Prior Felony Drug Conv/Adj	0.92	0.83	0.79	0.75
No Prior Adult Incarcerations	**0.95**	**0.93**	**0.92**	**0.92**
Prior Adult Incarcerations (1-2)	**0.92**	**0.87**	**0.84**	**0.82**
Prior Adult Incarcerations (≥ 3)	**0.90**	**0.80**	**0.73**	**0.73**
No Prior Juvenile Incarcerations/Commit.	0.92	0.87	0.84	0.83
Prior Juvenile Incarcerations/Commit.	0.97	0.84	0.78	N/A
Drug	**0.92**	**0.86**	**0.85**	**0.85**
Fraud	0.95	0.92	0.87	0.83
Larceny	**0.91**	**0.84**	**0.78**	**0.78**

Note: Covariates found to have significant differences are in bold.

arrest or confinement within the preceding 12 months, total felony/misdemeanor convictions or adjudications, prior felony drug convictions or adjudications, prior adult incarcerations, and type of offense.[41] The results are further illustrated in Figures 5.17, 5.18, 5.19 and 5.20.[42] Specifically, the results suggest that men had a higher probability of recidivating than women. Offenders who had no prior arrest or confinement within the preceding 12 months were less likely to recidivate than those who did. Offenders who had a limited number of prior felony/misdemeanor convictions or adjudications were less likely to recidivate than offenders who had more.

Figure 5.17
Kaplan-Meier Survival Curves for Demographic Factors (Recidivism Measured as Arrest)



Note: Age, marital status, and employment are not statistically significant.

[41] Prior felony drug is not a significant covariate for arrest resulting in conviction.
[42] All demographic covariates are shown, while only significant covariates are shown for the remaining factors.

Figure 5.18
Kaplan-Meier Survival Curves for Criminal Factors (Recidivism Measured as Arrest)

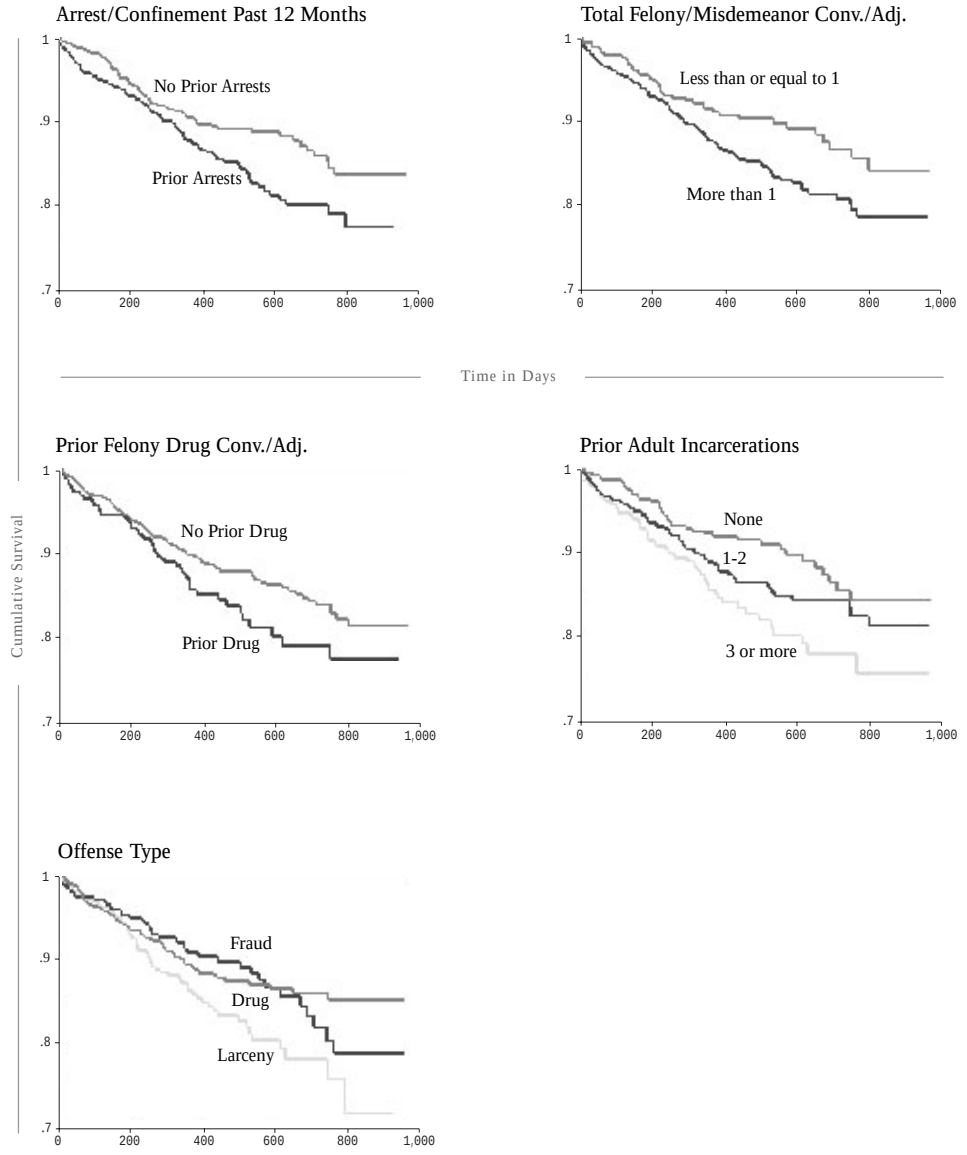


Figure 5.19
Kaplan-Meier Survival Curves for Demographic Factors (Recidivism Measured as an Arrest Resulting in Conviction)

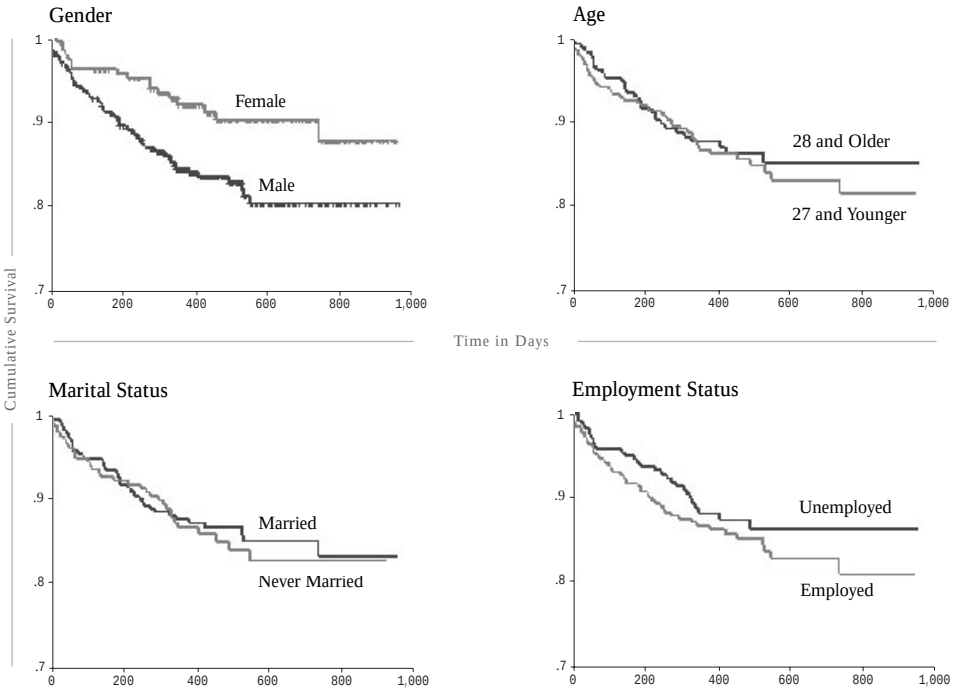
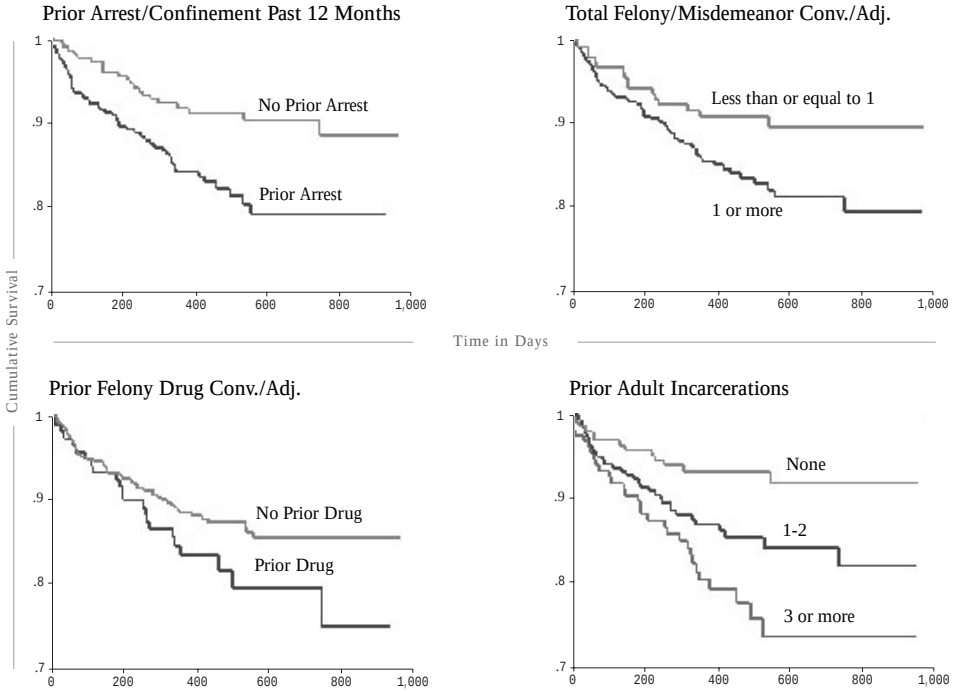


Figure 5.20
Kaplan-Meier Survival Curves for Criminal Factors (Recidivism Measured as an Arrest Resulting in Conviction)



Note: Age, marital status, and employment are not statistically significant.

Offenders who had no prior felony drug convictions or adjudications were less likely to recidivate than offenders who did. Offenders who had no prior adult incarcerations were less likely to recidivate than offenders with them. Finally, offenders who committed fraud and drug offenses were less likely to recidivate than offenders who committed larceny offenses.

The results suggest that Worksheet D may overemphasize demographic factors in predicting recidivism. The only demographic factor found to significantly differentiate recidivism among subgroups was gender. The other demographic factors (age at time of offense, marital status at time of offense, and employment status at time of offense) proved poor predictors of recidivism. Additionally, we found that contemporaneous factors, whether the offender was alone when committing the primary offense, and whether there were additional offenses, were also poor predictors of recidivism. On the other hand, we found all the variables associated with prior records, except for prior juvenile incarcerations or commitments, to be good predictors. This suggests that the instrument might be reweighted to place more emphasis on prior criminal behavior and less on the demographic and contemporaneous factors. This finding is consistent with the comments we collected from probation officers during the field interviews for this evaluation. Additionally, the instrument might be expanded to include type of offense, either by having separate worksheets based on offense type, or including offense type as a distinct factor in the calculation of risk on Worksheet D.

Finding C: Worksheet D may overemphasize demographic factors as predictors of recidivism.

Finding D: The best predictors of recidivism are those that deal with prior records and type of offense.

Furthermore, we found that prior juvenile incarcerations or commitments were not an important predictor of recidivism. This counterintuitive result may be the result of the lack of data available to probation officers and Commonwealth attorneys at the time they filled out Worksheet D. Despite recent legislation that required that juvenile records be included on rap sheets, there seems to be evidence that this is not in fact happening. Of our 555 diverted offenders, we found that only 36 were coded as having a prior juvenile incarceration or commitment (see Figures 5.21 and 5.22). By contrast, we found that 376 offenders had prior adult incarcerations. The disparity between these two figures, and the relatively small number of offenders with prior juvenile records, suggests that this may not be a good factor to include on the Worksheet D risk assessment.[43]

Finding E: The problems associated with locating and verifying prior juvenile records means that this factor is not currently a good measure to include on the risk assessment instrument.

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[43] Several authors note that utilizing official records (presentencing investigation reports, case records, and parole and probation reports) have limited use in developing reliable risk assessment instruments due to often incomplete and inconsistent data records (Steer 1973; Wilkins 1980; Farrington and Tarling 1985; Mears 1998).

Figure 5.21
Recidivism Rates By Covariates (Arrest)

	Total Number of Cases	Number Who Recidivate	Percent Recidivating
Female	189	46	24.3%
Male	366	113	30.9
Age 28+	325	94	28.9
Age <28	230	65	28.3
Married	243	72	29.6
Never Married	312	87	27.9
Employed	307	80	26.1
Unemployed	248	79	31.9
Offender Not Alone When Primary Offense Committed	183	50	27.3
Offender Alone When Primary Offense Committed	372	109	29.3
Additional Offenses (<6)	460	129	28.0
Additional Offenses (≥ 6)	95	30	31.6
No Prior Arrest/Confine Past 12 Mos.	247	61	24.7
Prior Arrest/Confine Past 12 Mos.	308	98	31.8
Total Fel/Mis Conv/Adjud (Risk Score ≤ 1)	168	39	23.2
Total Fel/Mis Conv/Adjud (Risk Score > 1)	387	120	31.0
No Prior Felony Drug Conv/Adj	424	114	26.9
Prior Felony Drug Conv/Adj	131	45	34.4
No Prior Adult Incarcerations	179	40	22.3
Prior Adult Incarcerations (1-2)	231	67	29.0
Prior Adult Incarcerations (≥ 3)	145	52	35.9
No Prior Juvenile Incarcerations/ Commitments	519	149	28.7
Prior Juvenile Incarcerations/ Commitments	36	10	27.7
Drug	259	66	25.5
Fraud	155	41	26.5
Larceny	141	52	36.9

Figure 5.22
Recidivism Rates By Covariates (Arrest Resulting in Conviction)

	Total Number of Cases	Number Who Recidivate	Percent Recidivating
Female	189	17	9.0%
Male	366	59	16.1
Age 28+	325	46	14.2
Age <28	230	30	13.0
Married	243	34	14.0
Never Married	312	42	13.5
Employed	307	47	15.3
Unemployed	248	29	11.7
Offender Not Alone When Primary Offense Committed	183	27	14.8
Offender Alone When Primary Offense Committed	372	49	13.2
Additional Offenses (<6)	460	62	13.5
Additional Offenses (≥ 6)	95	14	14.7
No Prior Arrest/Confine Past 12 Mos.	247	23	9.3
Prior Arrest/Confine Past 12 Mos.	308	53	17.2
Total Fel/Mis Conv/Adjud (Risk Score ≤ 1)	168	16	9.5
Total Fel/Mis Conv/Adjud (Risk Score > 1)	387	60	15.5
No Prior Felony Drug Conv/Adj	424	53	12.5
Prior Felony Drug Conv/Adj	131	23	17.6
No Prior Adult Incarcerations	179	13	7.3
Prior Adult Incarcerations (1-2)	231	33	14.3
Prior Adult Incarcerations (≥ 3)	145	30	20.7
No Prior Juvenile Incarcerations/ Commitments	519	70	13.5
Prior Juvenile Incarcerations/ Commitments	36	6	16.7
Drug	259	35	13.5
Fraud	155	16	10.3
Larceny	141	25	17.7

The NCSC evaluation team recognized that the risk assessment instrument was constructed through an empirical analysis that defined recidivism as conviction on a new felony offense. Thus, we conducted Kaplan Meier survival analysis with this definition of recidivism, despite the small number of reconvictions for new felony offenses (36) among the 555 diverted offenders we tracked. Figure 5.23 shows that, no matter which definition of recidivism we used, the factors that show significant differences in the probability of survival were consistent. The only factor significant for other measures of recidivism that we didn't find significant when we treated recidivism as reconviction for a new felony offense was offense type. This finding adds validity to the broader measures we chose for this study.

Figure 5.23
Significant Covariates for KM by Recidivism Measure

	Arrest (felony/misd)	Conviction (felony/misd)	Conviction (felony)
Male	X	X	X
Age			
Never Married			
Offender Alone			
Additional Offense			
Arrest/Confinement Past 12 Mos.	X	X	X
Priors	X	X	X
Prior Drug	X		X
Adult Incarcerations	X	X	X
Juvenile Incarcerations			
Offense Type	X	X	

Cox Regression Results

The Kaplan-Meier analyses were instructive because they identified factors related to the probability of recidivism in the six pilot sites. However, the limitation of Kaplan-Meier is that it only assesses factors one at a time. Looking at several factors *simultaneously* almost always improves our ability to predict a phenomenon like recidivism relative to any single factor. We need a technique that allows us to assess the influence of several explanatory factors in concert, so that we can determine the impact of each explanatory factor on the probability of recidivism in a statistically valid way. Cox regression is the method that satisfies these needs. We developed separate Cox regression models to identify predictive factors of two types of recidivism, (1) new arrest, and (2) new arrest resulting in conviction.

Total risk score and recidivism.

Are higher scores on the risk assessment instrument associated with a greater likelihood of recidivism? To answer this question, we evaluated a basic model consisting of three explanatory factors (*type of offense*,[44] *pilot site*, and *risk total*, the total score on Worksheet D) with Cox

[44] Type of offense was dummy-coded since it consists of three categories: larceny, drug, and fraud. The dummy coding resulted in two new variables, drug and fraud. The drug variable assesses the cumulative probability of

regression. This model allowed us to focus on key factors found useful in explaining the variation observed in the cumulative probability of recidivism in the Kaplan-Meier analyses, as well as found significant in judges' decisions to divert. Moreover, it provided a straightforward test of whether the score on the risk assessment instrument was positively correlated with recidivism as measured by new arrest or new conviction.

We performed the Cox regression in two stages. First, we assessed the explanatory power of the model containing only *Type of Offense* and *Pilot Site*. In the second stage, we added *Total Risk Score* to the model and determined whether this expanded model explained significantly more variance of the cumulative probability of recidivism than the former model.[45] If it does, we can conclude that the risk assessment instrument provides additional power for differentiating recidivists from nonrecidivists. The –2 log likelihood statistics for the arrest model and the conviction model confirmed that knowledge of the total risk score on Worksheet D improves our ability to predict recidivism, whether it is measured as a new arrest or a new conviction.[46]

Figure 5.24
Test of the Ability of the Total Risk Score to Improve on the Ability to Predict Recidivism Over Offense Type and Pilot Site Alone

Model	Log Likelihood for Arrest Model	Log Likelihood for Conviction
Stage One Model Type of Offense, Pilot Site	-936.8*	-455.0*
Stage Two Model Type of Offense, Pilot Site, Risk Total	-933.1**	-451.0**
-2 LLR Value	7.4	8.2
Significance Level	0.01	0.01

Note: * indicates significant at .10 and ** indicates significant at a .01 level.

recidivism for drug offenders compared to larceny offenders, and the fraud variable assesses the cumulative probability of recidivism for fraud offenders compared to larceny offenders. We used larceny as the reference category because the analysis revealed that this group had the highest proportion of recidivists. In addition, Fairfax county was used as the reference category for the pilot sites.

[45] The test for violations of the assumption of proportional hazards (see Cox regression sidebar) indicates that all hazards are proportional for both models. We cannot reject the hypothesis that the ratio of hazards is constant for all time points.

[46] The results of the Step One Model for both arrest and conviction showed that type of offense and pilot sites collectively account for a significant amount of variance of the cumulative probability of recidivism ($p<.10$). In the Stage Two Model we added the factor total risk score to the Stage One Model. We see that the value of the –2 log likelihood statistic for the resulting Cox regression model for arrest changes to -933.1, and for conviction to –451, and that the change is significant ($p<.01$). The significance level is calculated by generating the –2 log likelihood value associated with the difference between models (e.g., -2[(- 933.1) – (-936.8)]=7.4. To assess the significance level we referenced a chi-square table. Consequently, we conclude that the risk assessment instrument does provide additional power to differentiate recidivists from nonrecidivists beyond the power of type of offense and pilot site alone.

What is Cox regression?

Cox regression (Cox and Oakes, 1984) is a non-parametric multiple regression technique for jointly analyzing the determinants of survival time with censored observations. In recidivism research, "survival" refers to not recidivating. The dependent variable in a Cox regression is the proportion of cases "surviving" at a particular point in time (called the "cumulative survival function"). For all offenders, the cumulative probability of survival is based on the amount of time from the start of the study period until a recidivistic event occurs, or the end of the study is reached. Thus, unlike techniques such as logistic regression, that treat recidivism as a binary phenomenon, Cox regression incorporates the span of time until recidivism occurs, if it does. Because Cox regression exploits information ignored in logistic regression, it is considered the superior technique for the multivariate analysis of recidivism (Chung, Schmidt, and Witte, 1997).

The Cox model provides a way to examine the effects of covariates on the likelihood of survival after adjusting for other explanatory variables. For example, one can examine the impact of gender on the likelihood of recidivism while accounting for other potentially influential factors. Before estimating the proportional hazard model, one must test to see if the hazard function associated with the model is indeed proportional.[47] Proportionality implies that the effect of each independent variable (covariate) is time invariant and the ratio of the hazards for any two groups will be constant for all time points. For example, the likelihood of recidivism is greater for men than women, and the cumulative probability of recidivism for both men and women at a particular point in time, say six months after release, is less than at a later point in time, say three years after release. This is because the longer one tracks a pool of offenders, the greater will be the number who eventually recidivate—even though the rate at which people recidivate declines over time. The question is whether men and women recidivate at similar rates as time goes by. That is, if men are 50 percent more likely to

Figure 5.25
An Example of a Test of the Proportional Hazards Assumption

Predictive Factor	rho	chi2	df	Prob>chi2
Gender	-0.08116	1.19	1	0.2745
Employment Status	0.08876	1.23	1	0.2674
		14.78	15	0.4677

[47] The Cox regression model can be written in terms of the hazard function as:
$h(t) = [h_0(t)]\, e^{(B_1X_1 + B_2X_2 + \cdots + B_pX_p)}$
The hazard function is factored into two component pieces. The baseline hazard, $h_0(t)$, depends only on time, while $e^{(B_1X_1 + B_2X_2 + \cdots + B_pX_p)}$ depends only on the values of the independent variables ($X_1, X_2, \ldots X_p$), also known as "covariates" in this type of analysis. The regression model is referred to as the "Cox proportional hazards" model.

recidivate at six months, are they also 50 percent more likely to recidivate at three years? If this assumption is violated estimates will be biased and covariates will be time dependent.

We tested for proportionality by referencing tests based upon Shoenfeld and scaled residuals (Box-Steffensmeier and Zorn, 2001). The following figure shows an example of these tests for time to arrest based on gender and unemployment status.[48]

Examining the probabilities associated with the chi-square statistic allows one to assess the proportionality assumption. If the probabilities associated with each of the covariates and the global test do not achieve significance at the .05 level then proportionality exists. If the probabilities do not exceed the threshold then the model must be corrected for time dependency.[49]

After testing for proportionality, and making any applicable adjustments to the model, the next step is to estimate and interpret the results. The results provide an estimate for the coefficient associated with each covariate, a test of significance, and a hazard ratio (exponent of the coefficient). The results below are an example of estimates derived from Cox regression.

Interpreting a Cox model involves examining the coefficients and hazard ratios for each covariate. A positive coefficient means the risk for recidivating is greater, while a negative coefficient means that risk is smaller. In the example above, the positive coefficient for gender means that males are more likely to recidivate than females. By examining the probability associated with the coefficient one can assess whether it is significant. For gender the relationship is significant at the .05 (.036) level. This implies that there are statistically significant differences between females and males in rates of recidivism. To gauge the magnitude of this difference, we used the hazard ratio. For male offenders, the value 1.49 indicates that the estimated risk of recidivism for males is 1.49 times more than the estimated risk for females. Similarly, unemployed offenders are 27 percent more likely to recidivate than employed offenders. However, this relationship is not significant. Finally, we can use the log-likelihood statistic to compare models with different specifications and assess the value added of particular covariates. We will discuss this test statistic in the evaluation results.

Figure 5.26
Cox Regression Results: An Example

Predictive Factor	Coef	Std. Err.	z	P> IzI	Exp [Coef.]
Gender	0.3993262	0.1909235	2.09	0.036	1.49082
Employment Status	0.2395252	0.167739	1.43	0.153	1.270646

Log likelihood	-929.62614
LR chi29(15)	28.18
Prob > chi2	0.0205

[48] These results are based upon the actual estimation of a model that contains more than two covariates. Thus, these results are for illustrative purposes only.

[49] We can correct for time dependency by including an interaction term for the covariate multiplied by time into the regression model.

Figure 5.27 shows the results of the basic model, and shows *Total Risk Score* to be significant for both measures of recidivism. The coefficient for *Total Risk Score* is positive in both models, indicating that as the total score on Worksheet D rises so does the likelihood of recidivism. The hazard ratio for *Total Risk Score* in the Arrest Model (Conviction Model) indicates that the estimated risk of recidivism for offenders increases 5.7 percent (8.5 percent) with every one point increase in the total risk score (controlling for the influence of type of offense and pilot site).

Figure 5.27
Cox Regression Results for Basic Model

	Arrest Model				Conviction Model			
Variables	Coeff.	z-score	P>|z|	Haz. Ratio	Coeff.	z-score	P>|z|	Haz. Ratio
Drug Offense?	-0.316	-1.63	0.10	0.729	-0.083	-0.31	0.76	0.920
Fraud Offense?	-0.310	-1.45	0.15	0.734	-0.505	-1.55	0.12	0.603
From Norfolk?	0.393	1.57	0.12	1.481	-0.646	-1.43	0.15	0.524
From Suffolk?	0.371	1.43	0.15	1.449	0.471	1.31	0.19	1.601
From Newport News?	0.297	0.79	0.43	1.346	0.541	1.20	0.23	1.718
From Henrico?	0.390	1.75	0.08	1.477	0.484	1.54	0.12	1.623
From Danville?	-0.132	-0.38	0.70	0.876	-0.016	-0.03	0.97	0.985
Risk Score	0.055	2.75	0.01	1.057	0.081	2.89	0.00	1.085

Having established that the risk assessment instrument as a whole—the total risk score—provides a significant capability to differentiate recidivists from nonrecidivists, we sought next to assess the contribution each individual factor made on the instrument.

All factors included in the analysis are displayed in Figure 5.29. Note that the four variables related to prior record on Worksheet D have been combined into a single scale. These four factors, and their scoring, are:

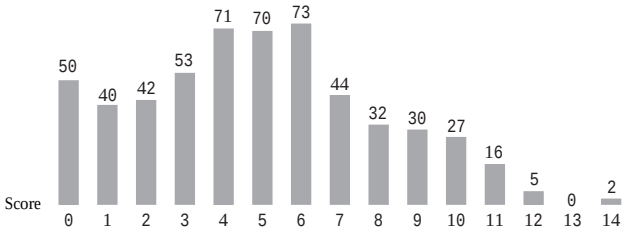
- Prior arrest or confinement in the preceding 12 months: ..... 0 or 2
- Total felony/misdemeanor convictions or adjudications: ..... 0 to 5
- Prior drug conviction or adjudication: ..... 0 to 4
- Prior adult incarceration: ..... 0 to 3

Rather than treat these variables individually, we hypothesized that recidivism is more closely related to the total prior record score. To this end, we investigated whether the four prior record variables form an additive scale that would represent overall contact with the criminal justice system prior to the time of sentencing. Reliability analysis indicated the scale is statistically significant, and the prior record scale was constructed by adding the four variables together.[50]

[50] Reliability comes to the forefront when variables developed from summated scales are used as independent variables in a linear model. Since summated scales are an assembly of interrelated items designed to measure underlying constructs, it is important to know how well a group of items focuses on a single idea or construct. Cronbach's Alpha is a statistic that measures how well a group of items focuses on a single idea or construct; this is called inter-item consistency. Alpha assumes that there is only one construct being measured. Alpha coefficient ranges in value from 0 to 1 and may be used to describe the reliability of factors extracted from dichotomous (that is, items with two possible categories) and/or multi-point formatted questionnaires or scales (i.e., rating scale: 1 = poor, 5 = excellent). The higher the score, the more reliable the generated scale is. The additive scale, *Prior Offenses*, has a Cronbach's Alpha equal to .54.

We used *Prior Offenses* to represent the extent of each offender's prior contact with the criminal justice system in the remaining analysis. In the present data set, *Prior Offenses* ranges from 0 to 14, with a mean of 4.9 and a standard deviation of 3.07. To get an idea of the actual distribution of the scale, we display the variation in Figure 5.28.

Figure 5.28
Frequency of Scaled Prior Record Scores



As we can see in Figure 5.28, 50 of the offenders in our data set (9 percent) had no measurable prior record. The most frequent scores were four, five, and six, each with 70 or more individuals. There were very few individuals above 10 (23) on the scale. Our hypothesis is that higher scores on the scale will be associated with a greater likelihood of recidivism.

All other factors on Worksheet D were coded as binary dummy variables.[51] Dummy variables for *Type of Offense* and *Pilot Site* were also included in the model.

Figure 5.29
Predictive Factors Used in Cox Regressions

Predictive Factor	Coding	Mean	Standard Deviation
Gender	1=Male	0.659	0.474
Age less than 20?	1=age less than 20	0.114	0.318
Age between 20 and 27?	1=age 20-27	0.301	0.459
Age 28 or Older?	1=age 28 and over	0.414	0.490
Ever Married?	1=Never Married	0.562	0.497
Employment Status	1=Unemployed	0.447	0.498
Offender Alone?	1=Yes	0.340	0.941
Additional Offenses?	1=6 or more additional offenses	0.170	0.377
Prior Offense Score	Range: 0 -14	4.910	3.070
Drug Offense?	1=Drug Offense	0.467	0.499
Fraud Offense?	1=Fraud Offense	0.229	0.449
Larceny Offense?	1=Larceny Offense	0.254	0.436
From Norfolk?	1=Norfolk	0.211	0.408
From Suffolk?	1=Suffolk	0.124	0.33
From Newport News?	1=Newport News	0.069	0.252
From Henrico County?	1=Henrico	0.229	0.421
From Danville?	1=Danville	0.086	0.281
From Fairfax County?	1=Fairfax	0.281	0.449

[51] Prior juvenile adjudications are excluded from the analysis. As discussed earlier, coding of this variable appears to have been done haphazardly and often ignored.

The test results in Figure 5.30 show that the hazard ratio is proportional for all independent variables, and that the Cox proportional hazards model is appropriate for estimating both models of recidivism.

Figure 5.30
Test of Proportional Hazards Assumption for Arrest and Conviction

	Arrest		Conviction	
	Chi-Square	Prob>chi2	Chi-Square	Prob>chi2
Gender	1.19	0.27	0.27	0.60
Age less than 20?	1.75	0.19	2.52	0.11
Age between 20 and 27?	0.17	0.68	0	1.00
Ever Married?	0.05	0.83	0.18	0.67
Employment Status	1.23	0.27	0.21	0.64
Offender Alone?	0.16	0.69	0.28	0.60
Additional Offenses?	1.76	0.18	0.24	0.62
Prior Offense Score	0.21	0.65	1.05	0.31
Drug Offense?	1.80	0.18	0	0.97
Fraud Offense?	0.01	0.93	0.88	0.35
From Norfolk?	1.52	0.22	0.19	0.66
From Suffolk?	0.89	0.35	0.94	0.33
From Newport News?	0	0.96	0.59	0.44
From Henrico County?	0.23	0.63	0.44	0.51
From Danville County?	0.01	0.91	0.75	0.39
Global Test	14.78	0.47	10.97	0.75

Figure 5.31 displays the results for both models of recidivism—new arrest and new conviction.[52] The significant predictors[53] of recidivism for "new arrest" were *Gender, Prior Offenses,* and *Drug* (the dummy comparing drug offenders to larceny offenders). The coefficient for *Gender* was positive, indicating that males are more likely to recidivate than females. The hazard ratio for

Figure 5.31
Cox Regression Results for Arrest and Conviction

	Arrest				Conviction			
	Coeff	z	P>|z|	Haz R	Coeff	z	P>|z|	Haz R
Gender	0.399	2.09	0.04	1.491	0.631	2.15	0.03	1.879
Age less than 20?	-0.066	-0.21	0.83	0.936	0.029	0.07	0.95	1.030
Age between 20 and 27?	0.208	0.96	0.34	1.231	0.051	0.16	0.87	1.053
Ever Married?	-0.127	-0.66	0.51	0.880	-0.049	-0.18	0.86	0.952
Employment Status	0.240	1.43	0.15	1.271	-0.222	-0.89	0.37	0.800
Offender Alone?	0.014	0.16	0.87	1.015	-0.062	-0.49	0.63	0.940
Additional Offenses?	0.126	0.59	0.56	1.134	0.169	0.54	0.59	1.184
Prior Offense Score	0.067	2.26	0.02	1.069	0.132	3.27	0	1.141
Drug Offense?	-0.352	-1.70	0.09	0.703	-0.095	-0.33	0.74	0.910
Fraud Offense?	-0.222	-0.99	0.32	0.801	-0.358	-1.05	0.3	0.699
From Norfolk?	0.270	1.04	0.30	1.310	-0.746	-1.61	0.11	0.474
From Suffolk?	0.240	0.90	0.37	1.271	0.339	0.91	0.36	1.403
From Newport News?	0.175	0.46	0.65	1.191	0.450	0.97	0.33	1.568
From Henrico County?	0.356	1.54	0.12	1.427	0.375	1.14	0.25	1.455
From Danville County?	-0.143	-0.41	0.68	0.867	0.037	0.08	0.94	1.037
Prob > chi2	0.021				0.007			

Gender indicated that the estimated risk of recidivism for males is 1.49 times greater than that for females. The coefficient for *Prior Offense Score* was positive, indicating that the risk of recidivism increases as the *Prior Offense Score* increases. The hazard ratio for *Prior Offense Score* indicated that every unit increase in *Prior Offense Score* increases the rate of recidivism by about 7 percent. *Drug* was also significant, with a negative coefficient, indicating that drug offenders were less likely to recidivate than larceny offenders. The hazard ratio for *Drug* indicated that drug offenders are about 30 percent (=1-.703182) less likely to recidivate than larceny offenders.

Similar findings emerged when "new conviction" was the measure of recidivism. As shown in Figure 5.31, the significant predictors of arrest resulting in conviction were *Gender* and *Prior Offenses.*

We can make these results more readily understandable by examining the impact on the probability of recidivism of varying the values of significant independent variables. For example, how does the estimated probability of recidivism vary between male and female offenders as prior record scores vary between one and 14? We constructed and reviewed two scenarios using the results from the new arrest model in figures 5.32 and 5.33 below.

Figure 5.32
Test of Proportional Hazards Assumption for Arrest and Conviction

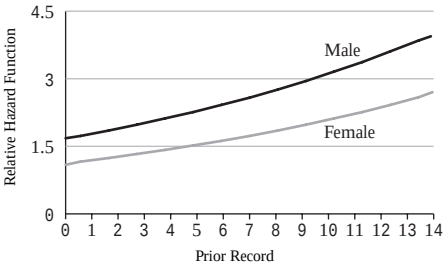
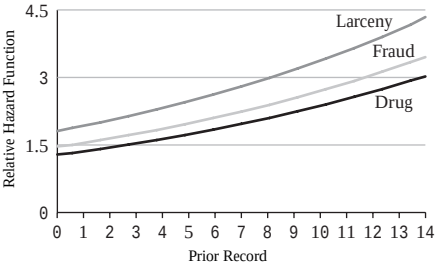


Figure 5.33
Test of Proportional Hazards Assumption for Arrest and Conviction



The two figures above illustrate how factors found to be significant predictors of a new arrest (gender, offense type, and prior record) influenced the likelihood of this form of recidivism. The first figure shows that males are more likely to recidivate than females, and that the likelihood of recidivism for both increases as prior record increases.[54] Males are 49 percent

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[52] Collinearity diagnostics in Stata reveal that the condition index between the independent variables is 2.56. None of the VIF's associated with the independent variables exceed 10. Therefore, potential problems associated with multicollinearity can be ruled out.

[53] At the .10 level of significance.

[54] As constructed, the figure compares the relative hazard rates of males and females at the different prior record scores, with higher relative hazard rates corresponding to an increased likelihood of recidivism. The relative hazard rates were calculated by generating predicted values under varying conditions. The coefficients of the covariates to be varied were multiplied by values corresponding to the desired parameters (e.g., for a prior record score of seven, coefficients were multiplied by seven), and all other coefficients were multiplied by their mean. The natural log raised to the exponent of the sum of these values generated the predicted relative hazard rate. We replicated this procedure for gender and offense type at each prior record score. These values in and

more likely to recidivate than females, which is consistent with the results we found with the Cox regression. Furthermore, an increase in the prior record score by one unit increased the risk of recidivism by 6.9 percent. Therefore, compared to an offender with a prior score of zero the offender with a prior score of five is 34.5 percent more likely to recidivate, and an offender with a prior score of 14 is 96.6 percent more likely to recidivate.

The second figure shows how the prior record score is related to recidivism for drug, fraud, and larceny offenders. This figure illustrates that drug offenders and fraud offenders were less likely to recidivate than larceny offenders, 30 percent less likely in the case of drug offenders and 20 percent less likely in the case of fraud offenders. In addition, as prior record increased all offenders were more likely to recidivate.

These overall results show that several factors on Worksheet D did not significantly improve our ability to predict recidivism in the pilot site sample. Perhaps the biggest surprise was the insignificance of an offender's age. We examined many other statistical models in an effort to confirm this finding. In all instances, regardless of how we measured or grouped it, age was not significantly related to recidivism. One explanation may lay in the nonrandom selection process judges used in the decision to divert. Recall that many of the diverted offenders were not recommended for diversion by the risk assessment instrument, and many offenders who were recommended by the instrument were not diverted. The information available at the time of sentencing (Worksheet D augmented by complete PSI) may have allowed judges to identify the younger offenders with the best likelihood of success.

Additionally, it may be that some factors only become significant in combination with other factors. For example, although *unemployed* and *under 20 years of age* were not significant on their own, we may find that a particular grouping, say young, male, unemployed offenders, are more likely to recidivate. For this reason we investigated a large number of interactions between predictive factors. We formed interactions among a wide variety of different constellations of demographic, instant offense, prior record, offense type, and pilot site variables. Of special interest was the three-way interaction between *Gender, Employment Status,* and *Age Less Than 20,* because the VCSC found all three of these factors significant in earlier analyses. This interaction was not significant, nor was a four-way interaction involving these same three predictive factors and *Ever Married.* We found that none of the interactive terms investigated in the context of this evaluation were statistically significant.

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of themselves do not have a clear interpretation, except for the fact that higher values are associated with a greater likelihood of recidivating. Therefore, to interpret these values, we calculated the percent change in the hazard rate. This value remains constant at all values because of the assumption of proportional hazards. We calculated the percent change in the hazard rate with the following formula (Box-Steffensmeir, Arnold, Zorn 1997):

$$100[e^{(Bk*1)} - e^{(Bk*0)}]/e^{(Bk*0)}$$

For example, at a prior record score of zero the relative hazard rate for males is 1.4139, and for females it is .9484. Utilizing the above formula the percent change in the hazard rate between males and females is 49.0820 [(1.4139-.9484)/.9484)*100]. Likewise at a prior record score of 14 the relative hazard rate for males is 3.5937, and 2.4105 for females, which results in a percentage change in the hazard rate between males and females of 49.0820 [(3.5937-2.4105)/2.4105)*100].

Issues and Recommendations

The analyses we conducted in this chapter offer insight into both the utility of the risk instrument and the factors that influence recidivism among eligible larceny, fraud, and drug offenders. We addressed four primary issues.

Issue 9: Which factors on the risk assessment instrument were associated with judges' decisions to divert?

Of principal importance, we found that offenders with lower total risk scores were more likely to be diverted than offenders with higher scores. Judges tended to agree that better candidates for diversion also have lower risk scores. On the other hand, judges, when making the decision to divert, used but a handful of factors on Worksheet D consistently. The factors that were used consistently related to aspects of the offender's prior record and the offender's age. Moreover, while the risk assessment was designed to apply uniformly across eligible offense types, we found that fraud offenders were most likely to be diverted and larceny offenders were least likely to be diverted. Finally, there was some evidence that judges in certain jurisdictions (e.g., Fairfax) were more inclined to divert offenders than judges in other jurisdictions (e.g., Henrico).

Issue 10: Is the total risk score positively correlated with the likelihood of recidivism?

The results from our statistical regression models confirmed that the risk assessment instrument is a useful tool for predicting recidivism. Our ability to identify high-risk offenders improved when we included the risk total in our model to predict recidivism, compared to a simple model that contained only offense type and pilot site. Whether we measured recidivism by new arrest or new arrest resulting in conviction, the likelihood of recidivism increases as the risk total score rises.

Issue 11: Do the individual factors on the risk assessment instrument effectively predict recidivism? Should the VCSC consider removing or adding some factors?

Both types of survival analysis (Kaplan-Meier and Cox regression), for both measures of recidivism, produced very consistent results about which factors were "good" predictors of recidivism. The results indicated that only gender and factors related to prior record were useful for predicting recidivism. In the Cox regression the latter factor was a composite of the four prior offense history variables currently used in the risk assessment instrument. We found this scale more predictive of recidivism than the individual variables in the composite. None of the other factors on the worksheet were significant predictors of risk. This included the other demographic factors (employment status, marital status, and age of offender) and contemporaneous factors (offender alone and additional offenses at time of offense). At the same time, the lack of consistency in the coding of prior juvenile adjudications made it impossible for us to assess the utility of this factor.

In addition to the significant predictors on Worksheet D, we found type of primary offense another useful factor for understanding recidivism (as measured by arrest). If we used arrests as the primary measure of recidivism, our results suggested that type of offense is likely a valuable

addition to the risk instrument as currently configured. We found that larceny offenders were more prone to recidivism than fraud and drug offenders.

We should note that three of the factors found to be related to recidivism—total risk score, prior offense score, and type of primary offense—were also significant in the judicial decision to divert. Judges tended to divert offenders with lower total risk scores, less serious prior records, and offenders convicted of drug and fraud offenses (compared to larceny offenses). It appears that experience and intuition led judges to focus most prominently on the factors most closely related to recidivism during diversion decisions. Again, this finding suggests that the VCSC should explore introducing offense type as a distinct element on Worksheet D.

Recommendation: The NCSC team recommends that the VCSC explore the possibility of reconfiguring and streamlining the risk assessment instrument to include gender, age, prior record, and offense type factors. Part of this process should be an analysis to revalidate the remaining demographic factors (i.e., employment status, marital status), the current offense factors (i.e., offender alone and additional offenses), and prior juvenile adjudications.

Issue 12: Is the nine-point threshold the most appropriate demarcation of risk?

In considering revising the threshold we must address two issues. First, what is the anticipated effect of streamlining the instrument and/or reweighting the factors? Secondly, what is the estimated impact on recidivism of raising or lowering the risk threshold if the factors and their present scores remain intact?

We found in our analysis of the decision to divert that judges used only a small subset of factors when deciding to divert. The survival analysis showed that factors similar to those used by judges to divert were most predictive of recidivistic behavior. This led to our recommendation to streamline the instrument. Furthermore, some court members expressed concern that young, unmarried, unemployed males start with a score of nine. We can mitigate this issue by eliminating some of the nonpredictive demographic factors or adjusting the scoring associated with age. However, by reducing the scope of factors, or lowering the score associated with a particular factor on the worksheet, most offenders would receive fewer total points. If we streamlined the instrument, or changed any of the scoring, we would have to reevaluate the cut off score of nine, as the nature of the instrument would be altered. Similarly, if we added any factors (e.g., primary offense type) most offenders would receive more points, and this would also necessitate reexamining the threshold.

If no adjustments are made to the factors on the worksheet, raising the threshold from the current level of nine would have an immediate impact on the number of offenders recommended for diversion. For example, we estimate that raising the threshold from nine to 12 would lead to a 69 percent increase in the number of offenders recommended for diversion (150 offenders in our sample of 555). This would also likely increase recidivism. However, the *percentage* of offenders recommended for diversion that recidivate remains relatively constant at a risk total threshold of nine through 15, for both measures of recidivism. This suggests that if no other adjustments were made the threshold could be raised with little increase in the share of diverted offenders who recidivate.

Recommendation: *The VCSC should revalidate the risk assessment instrument using new data from a more recent time period. Factors should be reevaluated to see if they are still "good" predictors of recidivism and their weights correctly specified. If factors are added, removed, or adjusted on Worksheet D, the threshold should be reevaluated. If no changes are made, consideration should be given to raising the threshold. Adjustments to the threshold must be based not only on empirical assessment, but also on the amount of risk the VCSC is willing to accept.*

6 The Benefits and Costs of Diversion for Nonviolent Offenders

Judicial risk assessment represents a major change to sentencing practice in Virginia. The goal of risk assessment is to divert "low risk" offenders, offenders who would otherwise be recommended for prison by state sentencing guidelines, to alternative punishment. A key measure of success is whether this new emphasis on diversion provides positive net benefits to the citizens of the Commonwealth. In this chapter we will evaluate the cost-effectiveness of the risk assessment instrument, and its impact on the criminal justice system. Knowing whether this initiative provides value for the dollar will help us decide whether to extend risk assessment statewide.

We will present evidence on the benefits and costs of diverting the 555 offenders in the study, which includes not only those offenders diverted from jail or prison to alternative sanctions, but also those diverted from prison to jail. Benefit/cost analysis allows us to examine the economic impact of diversion. Analyzing benefits and costs in monetary terms is, of course, only one aspect of the evaluation of the risk assessment instrument. The analysis itself is not intended to be the final arbiter of the merits of risk assessment and diversion. Rather, it is meant to accompany the process evaluation, qualitative interviews, and recidivism analysis that precede it. One of the goals of this evaluation is to provide a broad and diverse set of data and analytic techniques so that the issues surrounding diversion can be clearly defined, and informed decisions about diversion can be made. Benefit/cost analysis allows us to explore the specifically economic implications of diversion.

Benefit/cost analysis is an objective evaluation technique used to compare economic benefits with economic costs. This research tool was developed by economists in the 1930s to determine the efficient allocation of resources. The methodology is frequently used in evaluations ranging from the environment to health and safety issues to infrastructure development. Since the early 1980s federal regulatory agencies have been required to conduct benefit/cost analyses of all major initiatives. The primary value of this approach is that, by enumerating benefits and costs, alternative programs can be compared to a common metric that can "help policymakers make more informed decisions that enhance society's well-being" (Cohen 2000, 268). One of the key questions of any policy is whether it is cost effective.

Despite its widespread use in various substantive areas, few studies have used benefit/cost analysis to understand the costs and consequences of criminal justice policy interventions.[56] In this connection, Cohen (2000) stated, "Researchers generally stop at the question of whether a certain punishment deters offenders or whether a treatment program reduces recidivism. If so, the program "works." But at what cost (298)?" Philip Cooke, who observed that evaluations of the effects of programs and policies on criminal behavior commonly stop short of estimating the associated costs and benefits, reiterated the sentiment: "We know more about *what works* than about *what's worthwhile*" [emphasis in the original] (Welsh, Farrington, and Sherman xv). Our evaluation goes beyond the question of whether the risk assessment instrument 'worked' in identifying offenders less likely to recidivate. Benefit/cost analysis allows us to address the question, "at what cost?"

The following steps (Barnett 143-48) provide both an outline of how the benefit/cost analysis will proceed, and how this chapter is structured. Benefit/cost analysis generally proceeds by:

1. Defining the scope of analysis and the alternatives to be compared
2. Obtaining estimates of program effects (e.g., estimating number of offenders who recidivate)
3. Estimating the monetary value of benefits and costs
4. Describing the distribution of benefits and costs (e.g., who gains and who loses)[57]

Defining the scope of analysis and the alternatives to be compared

Our analysis takes a social perspective, meaning that it includes all benefits and costs that reasonably follow from the policy choice to divert nonviolent offenders, no matter who receives the benefits or bears the costs. Although this "big picture" is our primary perspective, we also attempt to discern to whom these benefits and costs accrue. This distinction can have important policy implications.

As with any impact evaluation, we are interested in *additional* benefits and costs. The analysis must compare outcomes from the policy change to what would have happened had the policy not been enacted. Separating out the additional elements from those that would have occurred anyway (i.e., in the absence of the intervention) is rarely straightforward. This involves setting a baseline against which the intervention, diverting offenders from prison and jail to alternative sanctions, can be evaluated. Therefore, the outcomes resulting from diverting offenders to alternative punishments should be compared to the likely outcomes for these offenders had they been incarcerated rather than diverted.

Obtaining estimates of program effects

The offenders in our study were diverted between December of 1997 and September of 1999 in six pilot sites across Virginia: Fairfax, Norfolk, Henrico County, Newport News,

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[56] For example, see the work of Cohen 1988; Rhodes 1988; Gray and Olson 1989; Cohen, Miller, Rossman 1994; Miller, Cohen, Wierssema 1996; Gray 1994; Greenwood et al. 1994; Donohue and Siegelman 1998.

[57] Additional steps typically present in benefit/cost analyses, though not applicable to the present study, are the calculation of benefits and costs in present value terms, and sensitivity analysis.

Suffolk, and Danville. As outlined earlier, 555 eligible offenders were diverted. Of these, 363 offenders were diverted from prison, and 192 from jail. Following diversion, 184 offenders were arrested on a new felony or misdemeanor charge. However, we estimate that only 97 of these offenders committed the new crime during the period when they would have otherwise been incarcerated.

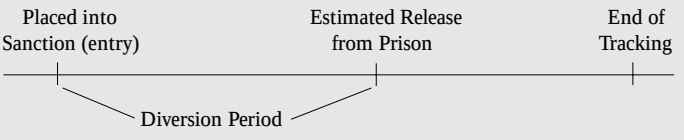
In our study, most direct benefits and costs of diversion accrue within a time period we know a lot about, the *diversion period*. The diversion period refers to the specific time that each

Setting the Baseline for Evaluation: The Diversion Period

With benefit/cost analysis, we are interested in comparing what happened to offenders diverted through risk assessment to what would have happened in the absence of risk assessment. All offenders in our sample were eligible for risk assessment, but recommended for incarceration under the state sentencing guidelines. As a baseline point of comparison, we estimated what the incarceration sentence would have been had the offender not been diverted through risk assessment. We assumed that during this estimated period of incarceration the offender would not have had the opportunity to reoffend. This estimated period of incarceration is called the *diversion period*. We then examined, for each offender, if and when recidivism occurred. If the event occurred during the estimated diversion period, we assumed that the crime was preventable.

We determined the diversion period for each offender by first identifying the date the offender was placed into his or her initial alternative punishment. We then estimated what each offender's sentence would have been in the absence of the diversion by assuming that he or she would have been sentenced at the midpoint of the sentencing guideline recommendation. While not all offenders are sentenced at the midpoint, this measure provides a reasonable estimate of what the sentence would have been without the risk assessment instrument. Overall compliance with the sentencing guidelines in Virginia is approximately 80 percent of the recommended sentence for larceny, drug, and fraud cases (Ostrom et al. 1999).

We then adjusted the midpoint estimate for good-time sentence reductions to estimate the actual time an offender would have been incarcerated. Ostrom et al (28) noted that the expected proportion of prison sentences served by felons sentenced between 1995 and 1997, the first three years of Truth-in-Sentencing in Virginia, was 89.0 percent for sale Schedule I/II drug offenders, 88.9 percent for possession Schedule I/II drug offenders, 89.4 percent for larceny offenders, and 89.4 percent for fraud offenders. However, to maintain a conservative estimate of cost savings, the midpoint estimate was reduced by 15 percent – the maximum allowable reduction under T.I.S. – to create a time span that corresponded to the time the offender would have been incarcerated. The resulting sentence (85 percent of the midpoint estimate) was added to the date the offender received his initial sanction to estimate the date they would have been released from jail or prison had they not been diverted. The diversion period is used to calculate cost savings of prison and jail space, and to determine what recidivism could have been prevented.



offender would have been in prison or jail had he not been sentenced to an alternative sanction. This is the principal period offenders were affected by the introduction of risk assessment, and is therefore the period of greatest interest to us.

Estimating the monetary value of benefits and costs

We can establish a monetary estimate for most benefits and costs identified in this chapter. The benefits attributable to diversion are derived from reduced jail and prison expenses, and the possibility of offender rehabilitation. While the benefits of reducing prison and jail burdens are readily quantifiable, due to the availability of data on the costs of incarceration, the social benefits of offenders successfully completing diversion programs are largely nonquantifiable. Difficulties in valuation stem from the variety of programs involved, and such complexities as quantifying an enhanced "quality of life" for rehabilitated offenders. While these benefits are not explicitly incorporated into the analysis, we did identify and record them for consideration.

The primary cost of diverting offenders derives from alternative sanctions. These include jail as an alternative to prison, as well as diversion and detention centers, supervised probation, home monitoring, etc. Additional costs accrue from criminal behavior that could have been avoided had the offender originally been incarcerated pursuant to the sentencing guidelines recommendations. Some offenders had suspended sentences revoked for failing in their alternative sanctions, and were sent back to jail or prison. Others were reincarcerated for probation violations. Still others committed new offenses that sent them to prison or jail for additional periods. We established a monetary estimate for each of these costs, including additional costs of justice system processing.

When all the benefits and costs are expressed in monetary terms, calculating a net benefit makes a direct comparison. The net benefit is the total benefit minus the total cost. If the net benefit is positive, we conclude that adopting the risk assessment instrument with the goal of increasing diversion generates a monetary gain for the Commonwealth.

$$\text{Net benefits} = \Sigma \text{ Benefits} - \Sigma \text{ Costs}$$

If the net benefit is negative, the costs outweigh the benefits. Ultimately, the net benefit can be used to assess the economic efficiency of the program.

Describing the distribution of benefits and costs

The net benefit provides an estimate in dollar terms of the overall gains and losses associated with the program. However, it does not express how the benefits and costs accrue to different parties. That is, who reaps the benefits (who wins), and who is responsible for the costs (who loses). To get a better picture of this distribution, we will consider the fiscal implications for both the state and the localities.

We hope to inform several fundamental policy questions in this chapter. Does the General Assembly's policy choice to divert nonviolent offenders result in a positive net benefit to Virginia and its residents? Who do the balance of benefits and costs accrue to? What do these results suggest about the impact of implementing the risk assessment instrument on a statewide basis? Ideally, our analysis would answer these questions definitively. However, data limitations and unavoidable uncertainties prohibit precise answers. Instead, our analysis provides practical guidance to decision-makers as they assess the effectiveness of risk assessment.

What are the benefits of diversion?

The primary rationale for nonviolent offender risk assessment in Virginia was to offset anticipated increases in correctional expenses brought on by truth-in-sentencing reform, which increased sentences for violent offenders, abolished parole, and limited good-time sentence reductions. Thus, it should not be surprising that the benefits associated with diversion primarily accrued to state and local correctional facilities through reduced inmate populations. Drawing on available estimates of the costs of incarceration for local jails and state prisons, these cost-savings are readily quantifiable.

Other benefits of diversion are not so easily identified or quantified. These include the benefits derived from positive outcomes of other programs. In addition to punishing offenders, many alternative sanctions (e.g., inpatient and outpatient drug and alcohol programs) have an explicitly rehabilitative component. But the benefits to society of an offender kicking drugs, for example, can be diffuse, hard to measure, of uncertain permanence, and offer limited opportunities for evaluation.

Benefits of Reduced Prison and Jail Burdens

In our study, 363 of the diverted offenders, almost two-thirds, were diverted from prison, compared to 192 diverted from jail. According to the sentencing guidelines, these 363 offenders would have received a total of almost 409 years of incarceration in state prisons.[58] However, as a result of diversion, these offenders served no time in a state prison. The resulting cost-savings for state prisons amounted to almost $8 million, an average of approximately $22,000 per diverted offender (See Figure 6.1).

The benefits accruing to local jails were much less dramatic, for several reasons. First, the 192 offenders diverted from jail to alternative sanctions were far fewer than the number diverted from prison. Also, jail sentences, by definition, are shorter than prison sentences. The average recommended jail sentence in the study was about 2.5 months, compared to the average recommended prison sentence of over 15 months. Finally, all prison sentences were eliminated as a result of diversion, whereas jail sentences may have been eliminated or merely reduced in length.[59] In cases where offenders received only reduced jail sentences, only the reduction in jail sentence constitutes a cost-savings.

The estimated cost-savings to the eight local jails from sentence reductions amounting to over 27 years was in excess of $724,000. This is less than one-tenth of the cost-savings to the state prison system. The average savings per diverted offender to local jails was just over $3,700. Additionally, because of the varying number of diversions from locality to locality, and the varying cost of jail-space, the distribution of these cost-savings varied by locale.

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[58] See the section entitled "Setting the Baseline for Evalution: The Diversion Period" for the methodology used to estimate sentence length in the absence of diversion.

[59] No offenders were defined as diverted by simply having less jail time substituted for more jail time. However, some offenders received jail time as they waited for openings to emerge in alternative programs.

Finding A: The total benefits of reduced jail and prison sentences were approximately $8.7 million, with over 90 percent of the savings coming from diversions from state prisons.

Figure 6.1
Benefits of Reduced Prison and Jail Sentences

	Number of Offenders	Bed-Space Saved (years)	Annual Cost of Bed Space	Total Savings	Saving per Diversion
Diversions from State Prison	363	408.5	$19,483	$7,959,000	$21,926
Diversions from Local Jails					
Fairfax	46	6.1	43,800	265,913	5,781
Norfolk	26	4.1	16,790	69,030	2,655
Henrico	52	6.8	32,485	221,812	4,266
Newport News	18	2.6	17,520	45,498	2,528
Suffolk/Isle of Wight	20	3.2	13,870	44,240	2,212
Southhampton/Franklin City	7	1.4	19,345	27,978	3,997
Danville	11	1.3	15,695	20,953	1,905
Rocky Mount/Franklin County	12	1.7	17,155	28,627	2,386
Subtotal	192	27.2	~	724,051	3,771
Total	555	435.8		$8,683,051	$15,645

Note: FY 1999 from the Jail Cost Report, Virginia Compensation Board

Program Benefits

Potential program benefits are many, ranging from the enhanced quality of life for the offender who beats alcohol and drug addiction or obtains a higher level of education, to reduced costs of recidivism, to the benefits of labor performed in jail farm programs. However, these program benefits are difficult to measure because their effects vary significantly from offender to offender, and when successful the effects are often distant in time. Rather than speculate, we leave these benefits at zero. The extent to which these benefits accrued to the offenders in this study is not available. However, these benefits should not be dismissed in the larger evaluation of benefits and costs. Our goal is providing a conservative estimate of net benefits. One source of benefits, potentially substantial, is the benefit of offenders successfully completing their alternative punishment.

What are the costs of diversion?

We can attribute four categories of costs to the diversion of nonviolent offenders. The vast majority of costs accrued from the set of alternative sanctions offenders were sentenced to, including the costs of diversion centers, detention centers, jail farms, supervised probation, and drug and alcohol treatment programs. A second source of costs comes from reinstating suspended sentences to diverted offenders who violated probation or were arrested for subsequent crimes. A third source of costs comes from recidivism during the diversion period. These crimes occurred during the time when we estimate the offender would have been incarcerated

had he or she not been diverted through risk assessment. The final source of costs is system costs, the costs of processing diverted offenders who reoffended, or subsequently violated probation terms.

Costs of Alternative Sanctions

A total of 1,006 sanctions with significant and measurable costs were prescribed to 555 diverted offenders.[60] These alternative punishments accounted for over $6.2 million in costs, 83 percent of the $7.5 million in total costs identified in this study. Jail costs were over $3.5 million, accounting for approximately 45 percent of the total. Other than jail, detention and diversion centers were the most expensive programs, each accounting for about three-quarters of a million dollars in costs.

Of the 363 offenders diverted from prison, 214 received some jail time as a part of his or her sentencing package.[61] These 214 offenders received, on average, 6.8 months of jail time, a total of 121 years. This created a financial burden of over $3.5 million for local jails (See Figure 6.2). The highest costs accrued in Fairfax County, which had the largest number of diverted offenders, and where costs of incarceration are considerably higher than other localities.

Figure 6.2
Costs for Offenders Diverted from Prison to Jail

Jail	Number of Offenders	Bed-Space Incurred (years)	Annual Cost of Bed Space	Total Costs
Fairfax	73	40.6	$43,800	$1,776,116
Norfolk	54	30.1	16,790	504,649
Henrico	47	25.8	32,485	837,557
Newport News: Jail Farm	9	5.5	18,980	104,169
Suffolk/Isle of Wight	12	8.1	13,870	112,083
Southhampton/Franklin City	3	1.5	19,345	28,674
Danville: Jail Farm	11	6	17,885	106,619
Rocky Mount/Franklin County	5	3.6	17,155	61,072
Total	214	121	~	$3,530,939

Substantial portions of the total burden accrued to state sanctions, supervised probation, diversion centers, and detention centers (See Figure 6.3). Supervised probation was the most widely used sanction, assigned to 387 of the 555 offenders. Although the per offender cost of super-

[60] As noted in Chapter 4, 2,053 distinct sanctions were imposed on diverted offenders. However, the NCSC staff (in consultation with VCSC staff) deems that 1,047 sanctions impose no significant costs for state and local criminal justice agencies. The vast majority of these excluded sanctions relate to payment of court costs and fines (569) unsupervised probation (167), and behavioral restrictions placed on convicted offenders (159).

[61] Chapter 4 shows that a total of 273 offenders received a jail sentence (or jail farm) in the pilot courts. Of these, 214 offenders were diverted from prison to jail. The remaining 59 offenders were initially recommended for jail under the guidelines, but received a lower jail sentence as part of their diversion sanction.

vised probation is relatively low ($1,295) compared to other sanctions, the large number of offenders given that sanction pushed the aggregate cost to just over $500,000. The large number of offenders assigned to diversion and detention centers, combined with the substantially higher per offender costs ($9,742) of these programs, resulted in a total cost of $1.5 million for these two programs. Other state sanctions that accrued significant costs include boot camp, day reporting, and intensive supervised probation.

The only local sanctions, other than jail sentences, that amounted to a relatively significant burden were inpatient drug and alcohol treatment programs. Thirty-six offenders were assigned to these programs at an average cost of $9,784 per assignee, for a total cost of over $350,000.[62] Other local sanctions accruing costs included outpatient drug and alcohol treatment, outpatient and inpatient mental health treatment, and drug court.

Finding B: The costs of alternative sanctions summed to approximately $6.2 million, with 65 percent of the total attributable to local sanctions (e.g., jail)

Figure 6.3
Costs of Alternative Sanctions

Sanction	Number Diverted	Sanction Cost per Offender	Total Cost of Sanction
State			
Detention Center	77	$9,742	$750,096
Diversion Center	78	9,742	759,837
Boot Camp	11	6,494	71,438
Day Reporting	34	1,880	63,920
Intensive Supervised Probation	14	1,880	26,320
Supervised Probation	387	1,295	501,165
Subtotal	601	~	$2,172,775
Local			
Inpatient Drug/Alcohol Treatment	36	$9,784	$352,224
Outpatient Drug/AlcoholTreatment	133	924	122,892
Inpatient Mental Health Treatment	3	9,700	29,100
Outpatient Mental Health Treatment	12	900	10,800
Jail & Jail Farm	214	~	3,530,939
Drug Court	7	1,350	9,450
Subtotal	405	~	$4,055,405
Total	1,006 Sanctions*	~	$6,228,180

* For the 555 diverted offenders in this study.

[62] The per assignee cost was derived by taking the total funding from all sources and dividing by the number of clients entering a representative drug and alcohol treatment program.

Costs of Crimes Committed During the Diversion Period

One of the greatest risks to any program that reduces terms of incarceration is the risk of recidivism, particularly those crimes committed when the offender would have otherwise been behind bars. Of the 555 diverted offenders in this study, 184 committed new crimes after disposition and sentencing on the original case.[63] However, only 97 of those offenders committed a new crime within the diversion period, that time when the offender would have otherwise been incarcerated.[64] These 97 offenders committed 193 crimes during the diversion period. Figure 6.4 summarizes these crimes, and Appendix C enumerates them in detail.

Figure 6.4
Recidivism Within the Diversion Period*

	Number of Crimes				
	Drug	Person	Property	Other	TOTAL
Felony	18	6	28	17	69
Misdemeanor	4	11	19	36	70
Technical Probation Violations	~	~	~	54	54
Total Criminal Events	22	17	47	107	193

* For the 97 offenders committing crimes within the diversion period.

These crimes produced significant and important costs. First, they produced costs for their victims in the form of property loss, physical injury, and emotional stress, among others. Second, these crimes typically lead offenders back into state custody to finish the sentences suspended in the original case, or to face new sanctions for the fresh offenses. Finally, processing and prosecuting these crimes placed additional burdens on the criminal justice system. Thus, much of the incarceration cost saved by originally diverting these offenders was lost.

Direct Costs to Victims of Crimes Committed During the Diversion Period

Of the 193 crimes committed by 97 offenders during the diversion period, only 39 of the 97 committed crimes resulted in direct costs to victims. Because additional crime poses a risk to public safety and welfare, offenders who commit crimes creating direct victim costs pose a special kind of risk of great concern to the creators and supporters of the risk assessment instrument.

During the diversion period, 39 offenders committed 61 crimes with direct costs to victims, including 33 larcenies, five motor vehicle thefts, two burglaries, 13 assaults, and eight

[63] For purposes of this analysis, recidivism is defined as a new felony or misdemeanor arrest.
[64] The diversion period is the estimated length of time that an offender would have been incarcerated had he not been given an alternative punishment.

other offenses (See Figure 6.5). A recent study provides high and low estimates of per offense victim costs for four broad categories of crimes.[65] We used these estimates in Figure 6.5 to calculate aggregate estimates of victim costs resulting from these additional crimes.[66]

Figure 6.5
Direct Costs to Victims of Crimes Committed During the Diversion Period

		Cost per Offense*		Total Cost	
Crime	Number of Offenses	Low	High	Low	High
Larceny	33	$ 427	$ 427	$ 14,091	$ 14,091
Motor Vehicle Theft	5	4,624	4,624	23,120	23,120
Burglary	2	1,618	1,734	3,236	3,468
Assault	13	10,405	17,341	135,265	225,433
Other (Unquantifiable)	8	N/A	N/A	N/A	N/A
Total (for 39 offenders)	61	~	~	$175,712	$266,112

*Victim cost estimates are from Victim Costs and Consequences: A New Look, by Ted R. Miller, et al. (1996). The estimates have been converted into 1999 dollars.

While the total of these costs, using the high estimates, summed to about $266,000, which is approximately 3 percent of the total costs identified in the study, these costs can have profound policy implications. The 13 assaults among the crimes committed in the diversion period are particularly troubling. Assaults have the greatest cost per offense, and they also pose the greatest danger to public safety. The potential risks posed by these offenders are discussed in greater detail below.

Finding C: Costs attributable to victim costs were roughly $266,000.

Costs of Reincarceration During the Diversion Period

Our accounting of benefits accruing from diverting 555 offenders to alternative sanctions included savings from decreasing prison and jail burdens during each offender's diversion period. This calculation, of course, assumed that the offender would not have spent any more of the diversion period in prison or jail than originally indicated by the case disposition. However, some offenders ended up back in prison or jail because of recidivist crimes or technical probation violations (See Figure 6.6).

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[65] We took our estimates of victimization costs from Victim Costs and Consequences: A New Look, by Ted R. Miller, Mark A. Cohen, and Brian Wiersema. (1996). The costs include both tangible costs (e.g., property damage and loss, medical care, and productivity) and intangible costs (e.g., fear, pain, suffering, and loss of quality of life).

[66] The estimates provided by the authors are in 1993 dollars, and have been converted to 1999 dollars using the Consumer Price Index (CPI) conversion factor of 0.865.

Sixty-two of the 97 offenders who recidivated during their diversion period were reincarcerated. These 62 offenders imposed an added burden on the state of Virginia, and relevant localities, through additional incarceration costs. While additional incarceration times may extend beyond the diversion period, only those additional costs that accrued during the diversion period are relevant and included here.[67]

The costs accruing from the 62 offenders reincarcerated during the diversion period add up to almost three-quarters of a million dollars (see Figure 6.6 below). Because 60 of the 62 were prison bound offenders, the overwhelming majority of costs were incurred by the state, while costs to localities were relatively small.[68]

Finding D: Costs accruing from offenders reincarcerated during the diversion period summed to approximately $728,000, with the state incurring a majority of these costs.

Figure 6.6
Costs of Reincarceration During the Diversion Period

	Number of Offenders	Bed-Space (years)	Annual Cost of Bed Space*	Total Costs
State Prison	60	37.1	$19,483	$722,526
Local Jails	2	0.2	~	5,225
Norfolk	1	0.1	16,790	1,932
Henrico	1	0.1	32,485	3,293
Total	62	37.3		$727,751

*The cost of jail bedspace varies from locality to locality.

Justice System Processing Costs

In addition to the costs of alternative sanctions, costs to victims, and the costs of reincarceration, recidivism carries additional system costs. These costs include the economic value of each stage of the criminal justice process, from investigation and arrest through final disposition. When offenders commit a new crime when they otherwise would have been incarcerated, they place additional demands on criminal justice personnel and operating resources. Our estimate of the average cost per crime to the criminal justice system comes from a 1987 Metropolitan Dade County Department of Justice Assistance Report. It provides average system costs for rape, robbery, aggravated assault, and other felonies. To be useful for our evalua-

[67] Because we can say little about the status of the offender after the diversion period, to suggest that he or she would or would not have been incarcerated after that point, had he not been diverted, is speculation. Therefore, the costs of a subsequent sentence extending beyond the diversion period are only considered to be irrelevant up to the end of the offenders' diversion periods.

[68] Data regarding the precise incarceration location of recidivist offenders were unavailable. Therefore, this analysis assumed that recidivist offenders were sentenced to prison, if, in the original case, the sentencing guidelines recommended a prison sentence.

tion the average cost for these crimes has been converted to 1999 dollars, resulting in system costs of $2,840 per crime.[69] Therefore, the system costs of the 97 offenders who recidivated during the diversion period were $275,480.[70]

Finding E: Costs accruing from system costs were approximately $275,000.

What might be other potential sources of costs for offender diversion?

Infrastructure Development

Virginia currently operates five diversion centers, five detention centers, eight day reporting centers, and one male boot camp. Expanding risk assessment statewide would increase the number of offenders diverted to sanctions other than prison and jail, placing an added strain on the existing alternative sanctions infrastructure. Present facilities and staff would need to be augmented to handle a statewide diversion program. Meeting these needs might well require allocating additional state and local funds for capital outlays and operational expenses. We may also see an increase in systems costs due to recidivism by offenders who would otherwise be incarcerated. Thus, expanding diversion statewide will likely lead to a need for additional resources for personnel and facilities for alternative punishment. These additional costs would come at the expense of the monetary benefits that accrue from diversion.

Potentially Catastrophic Costs of Offender Diversion

According to the Virginia Criminal Sentencing Commission, the general definition of "risk" is the risk of re-offense—particularly as it relates to public safety.[71] Because public safety is a major concern of policymakers and the public alike, managing increased risk looms large in the politics of criminal sentencing policy. Anecdotal evidence of crimes that could have been prevented had the offender been incarcerated rather than diverted could result in a dramatic loss of political support for the program in Virginia. A single diverted offender committing a single rape or murder during the diversion period could not only undermine any net benefits of risk assessment, but could also directly affect the political will to maintain or expand such programs.

In the present study, 39 offenders committed 61 crimes during their diversion periods, creating at least 61 persons who could potentially blame risk assessment for their victimization.

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[69] The 1987 average of $1,931 was converted to 1999 dollars by utilizing the Consumer Price Index (CPI) conversion factor of 0.680.

[70] System costs were calculated by multiplying the number of offenders committing recidivistic acts during the diversion period (97) by the average cost per crime ($2,840). The data from the Dade County report were used because it is the best study found by NCSC analysts for estimating these system costs. In addition, the resultant estimate is a liberal estimate of system costs, since the types of recidivistic crimes committed by the 97 offenders in the sample are less complex in nature than those used to generate the estimate. Again, our goal in this evaluation is to construct a conservative estimate of program benefits.

[71] 1997 *Virginia Criminal Sentencing Commission Annual Report*, page 43.

The low rate of such offenders (7 percent), combined with the nonviolent nature of crimes they committed, is a positive mark for the risk assessment instrument. It is also worth noting that the risk assessment instrument did not recommend diversion for 27 of these 39 offenders (See Figure 6.7). Had judges adhered more closely to the recommendations of the risk assessment instrument almost three-quarters of these offenders would not have been diverted, and would not have had the opportunity to commit additional offenses.

Figure 6.7
Risk Assessment Scores for Offenders Committing New Crimes Having Direct Victim Costs

Score	Frequency	Cumulative Percent
6	5	12.8%
7	1	15.4
8	4	25.6
9	2	30.8
10	4	41.0
11	3	48.7
13	3	56.4
14	5	69.2
15	2	74.4
16	3	82.1
18	3	89.7
19	2	94.9
20	1	97.4
22	1	100.0
Total	39	

Assessing the additional costs of *potential* infrastructure development and *potential* catastrophic victim costs from crimes that may never happen is, at this point, purely speculative and nonquantifiable. Therefore, while we have identified the prospective nature of these costs, they are not explicitly included in the benefit-cost analysis.

Does the General Assembly's policy choice to divert nonviolent offenders result in a net benefit to Virginia and its residents?

Now that we have enumerated estimates of the various benefits and costs of diverting these 555 nonviolent offenders, it is time to aggregate these estimates to determine an overall net benefit or net cost, and determine to whom the aggregate benefits and costs accrue. Because this is a pilot project, we will consider several issues that affect our analyses and results as they apply to the potential application of the risk assessment instrument statewide.

Summary of Benefit and Cost Estimates

Quantifiable benefits of diversion through risk assessment include the value of reducing prison and jail sentences. These cost-savings amounted to almost $8.7 million (See Figure 6.8). Reduced prison sentences alone accounted for just under $8 million in savings. Data that

allowed for a valuation of program benefits were not available. Quantifiable costs of diversion totaled approximately $7.5 million. The costs associated with alternative sanctions accounted for 83 percent of the total. The costs to victims of preventable recidivism, costs to the justice system, and reincarceration costs, accounted for the other 17 percent of quantifiable costs. Thus, quantifiable benefits exceeded quantifiable costs by about $1.2 million.

Finding F: The implementation of diversion led to a net benefit of 1.2 million dollars.

Figure 6.8
Quantifiable Benefits and Costs for the Diversion of Nonviolent Offenders

Benefits		Costs	
Reduced Prison Sentences	$7,959,000	Alternative Sanctions	$6,228,180
Reduced Jail Sentences	724,051	Victim Costs	266,138
		Reincarceration Costs	727,751
		Justice System Costs	274,480
Total Benefits	$8,683,051	Total Costs	$7,496,549

The net benefit would have been even greater had it been possible to include an estimate for the effects of alternative programs. Still, from these results we conclude that the experiment in risk assessment produced a positive net benefit for Virginia. However, these net benefits were not distributed equally between the Commonwealth of Virginia and the localities that participated in the pilot study.

The Commonwealth of Virginia accrued $7,959,000 in benefits, all the result of eliminating prison sentences for offenders diverted from prison. The state's costs included over $2.1 million from placing offenders in state funded alternative sanctions, and another $722,000 in reincarceration costs, which were borne almost entirely by the Commonwealth. In addition, the state paid 58 percent of jail costs accrued by localities through transfer payments, which amounted to approximately $2,352,000. Finally, the state transferred another $3,030 to localities for reincarceration costs. Thus, the Commonwealth of Virginia accrued a net benefit totaling $3,128,00 (See Figure 6.9).

Costs to localities and crime victims offset much of the total net benefit. Localities incurred a substantial share of the overall burden created by diversion through increased use of local alternative sanctions, especially for offenders diverted from prison to jail. The costs of these alternative sanctions, along with system costs and reincarceration costs (the latter discounted by state transfer payments), increased local burdens by over $1.9 million. Benefits accruing to localities were much more modest, totaling only $304,000. Thus, localities incurred a net cost of $1.7 million. Crime victims saw no quantifiable benefits, though they bore $266,000 in costs. Therefore, it is important to note that much of the benefit that accrued to the state was shifted to localities in the form of costs.

Finding G: The Commonwealth of Virginia had a net benefit of $3.1 million, while localities faced a deficit of $1.7 million as a result of diversion. Thus, diversions led to net losses for localities that fund many of the diversion programs without realizing many of the monetary benefits the state accrued.

Figure 6.9
Quantifiable Benefits and Costs for the Diversion of Nonviolent Offenders by Entity

Benefits*	State	Localities**
Reduced Prison Sentences	$7,959,000	~
Reduced Jail Sentences	419,950	304,101
Total Benefits	$8,378,950	$304,101

Costs*	State	Localities**
Alternative Sanctions (including jail)	$4,524,910	$1,703,270
Reincarceration Costs	725,556	2,195
System Costs	0	274,480
Total Costs	$5,250,466	$1,979,945
Net Benefit	$3,128,484	-$1,675,843

*This does not include the unquantifiable benefits of the alternative programs discussed above. Victim costs are also not included in this table.
**Localities includes local service providers as well as local governments.
The table reflects reimbursment of local jail costs by the Commonwealth at a rate of 58 percent, the average for the eight pilot sites. Just jail costs to localities were reduced by 58 percent because that represents average transfer rate for states to localities.

What would be the impact of adopting risk assessment statewide?

The validity of the results of the benefit/cost analysis, and their usefulness in projecting the effects of a statewide diversion policy, depends on the degree to which benefit and cost structures remain constant for large-scale implementation. Several factors may hinder extrapolating in a straightforward way the results reported here to an accurate estimate of statewide effects. Thus, we will outline the assumptions made in calculating a statewide projection, and generate an estimate with lower and upper bounds to account for potential over- and under-estimates of the number of offenders who would be eligible and diverted in a statewide expansion.

This study covered the two-year period from December 1997 to September 1999. During that time 5,158 drug, fraud, and larceny cases were tried in the pilot sites using the risk assessment instrument.[72] Of this total, 2,043, or 39.6 percent, were eligible for diversion. Offenders

[72] The Norfolk and Newport News sites were only added as of April 1998.

were ineligible for diversion if they were recommended for probation, had a violent prior record, or violent current offense, or whose current offense involved the sale of an ounce or more of cocaine. In addition, 478 offenders were removed from consideration because Worksheet D was not properly filled out. Potentially, these latter offenders may have raised the number eligible for diversion and thus increased the percentage of eligible offenders out of all drug, fraud, and larceny cases. Therefore, the eligibility rate of 39.6 percent of all drug, fraud, and larceny offenders is conservative, and we used it as a lower bound in calculating the statewide projection.

To extrapolate the findings from the pilot study statewide, it is necessary to estimate the number of offenders that would be eligible for diversion statewide. We found, using data from the Virginia Criminal Sentencing Commission, that 12,721 drug, fraud, and larceny cases were tried in Virginia in 2000.[73] Analyzing information available on Worksheets A, B, and C provided an estimate that 6,560 (51.6 percent) of these offenders were ineligible for diversion pursuant to the risk assessment instrument, leaving a total of 6,161 (48.4 percent) eligible offenders. However, because Worksheet B does not provide a way to determine the presence of a violent prior record (which would make the offender ineligible), our estimate overestimates the number of offenders eligible for risk assessment. Thus, we used this estimate of 48.4 percent of all drug, fraud, and larceny offenders to calculate the upper bound of the statewide projection.

To calculate both the lower and upper estimates we found it necessary to assume that eligible offenders would be diverted at the same rate across the state as they were in the pilot sites (i.e., 33 percent of eligible offenders were diverted in the pilot sites). It was also necessary to assume that the current practice of voluntary compliance with the risk recommendations would continue (i.e., offenders above and below the nine point threshold will be diverted), and that estimates of jail cost are similar statewide (i.e., the average cost for the six pilot sites is representative of the rest of the state).

Applying the lower bound eligibility estimate (39.6 percent) to the 12,721 drug, fraud, and larceny convictions in 2000 yielded a total of 5,038 offenders eligible for risk assessment. If we assume that offenders would be diverted at the same rate statewide as they were in the pilot sites (i.e., 33 percent), we find that 1,662 offenders would be sentenced to alternative sanctions pursuant to the risk assessment instrument. Further, if the benefits of diversion accrue statewide at the same rate as in the pilot sites, the net social benefit would have approached $2.9 million for the year 2000.

If we apply the upper bound eligibility estimate (48.4 percent), and maintain the assumption that 33 percent of eligible offenders would be diverted, we get an estimated 2,033 offenders diverted. Again, if benefits of diversion accrue statewide at the same rate as in the pilot sites, the net social benefit would have approached $3.6 million for the year 2000. Thus, we estimate that the net social benefit of expanding the risk assessment program statewide would have amounted to at least $2.9 million in 2000, and perhaps as much as $3.6 million.

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[73] Data derived from a response to an information request to the Virginia Criminal Sentencing Commission, March 22, 2001.

Finding H: Expanding the program statewide would have led to a net social benefit of between $2.9 million and $3.6 million in the year 2000.

Figure 6.10
Calculation of Net Societal Benefits

Risk Assessment		Statewide Projection, 2000	
2,043	eligible offenders	6,161	eligible offenders
5,158	drug, fraud, larceny cases in pilot study	12,721	drug, fraud, larceny cases in pilot study
40%	of eligible offenders diverted	48%	of eligible offenders diverted

Lower Bound Calculation	Upper Bound Calculation
(12,721) * (.396) = 5,038	(674)/(2,043) = (X)/(6,161)
(674)/(2,043) = (X)/(5,058)	X=2,003
X=1,662	(674)/(2,003) = ($1.19 million)/(Z)
(674)/(1,662) = ($1.19 million)/(Z)	Z=3.6 million
Z=2.9 million	

Note: X represents the projected number of diverted offenders; Z represents the net societal benefit

Issues and Recommendations

Issue 13. Has the risk assessment pilot project been cost effective? Would statewide expansion of the program result in a net benefit or cost to Virginians?

The benefit/cost analysis represents the third complementary component of our evaluation. The first two pieces (process evaluation and recidivism analysis) addressed whether or not diversion worked. This final piece of evidence provides a way to assess the net benefit to the Commonwealth of Virginia of the risk assessment program. We proceeded by enumerating the benefits and costs of diversion. Total benefits flow from reduced prison and jail burdens, and the benefits we can attribute to diversion programs. Total costs are based on the costs of alternative programs, costs that accrue from criminal behavior that would have been avoided had the offender been incarcerated rather than diverted, the costs of reincarceration, and system costs. For our study sample (N=555) the analysis showed a net benefit of $1.2 million. A majority of the benefits accrued to the Commonwealth, while localities absorbed the bulk of the costs of the alternative programs. Had the risk assessment program been used statewide in 2000, the estimated net benefit would have been between $2.9 and $3.6 million.

Recommendation: The positive net benefits of implementing diversion suggest that the program is worthwhile. Adopting and implementing the program statewide would be cost effective.

Epilogue

The General Assembly and the Virginia Criminal Sentencing Commission are to be commended for their design and pilot testing of a pioneering sentencing innovation. The VCSC designed the risk assessment instrument to identify, from among eligible larceny, fraud, and drug offenders who would otherwise be recommended for incarceration by state sentencing guidelines, offenders with the lowest probability of being reconvicted of a felony crime, and divert them to some form of alternative punishment. No other structured sentencing system in the country embodies an empirically-based risk assessment process that is tied directly to prison populations and explicit diversion thresholds with due regard for public safety.

This evaluation is designed primarily to benefit Virginia policymakers and practitioners interested in an objective analysis of judicial risk assessment. However, given the wide interest in the design and use of empirically-based risk assessment, there is likely to be considerable interest in the Virginia experience. Other states contemplating risk assessment to divert "low risk" offenders may benefit from our analytic approach to the study of recidivism, our efforts to explain and clarify the statistical results, and the framework used to conduct the benefit-cost analysis

This evaluation comes at an important time for Virginia, when the use of intermediate sanctions is being viewed as a reasonable method for controlling prison populations, while also ensuring public safety. In addition, state law requires the development of risk assessment and further requires a report to be made to the General Assembly concerning its implementation and use. In sum, the recommendations from this study are designed to benefit numerous Virginia officials responsible for sentencing policy and justice system administration.

Evaluation findings are based on three distinct, yet interrelated analyses: (1) a focus on the development of the risk assessment instrument; (2) an empirical study of diversion and recidivism; and (3) a benefit/cost analysis to identify the various benefits and costs of risk assessment and alternative sanctions in Virginia. The NCSC evaluation team believes that the risk assessment instrument is successful in identifying low risk candidates for diversion. There is general support within the justice system for the continuing use of risk assessment as an aid to judicial decision-making. Judges and probation officers found that the use of the instrument does not create undue burdens on court time and resources. Additionally, diversion through risk assessment has produced positive net benefits for the state. From this solid foundation, the VCSC has targeted programmatic improvements to further strengthen the risk assessment process.

The NCSC concludes that the theoretical framework and statistical analyses used to construct the risk assessment instrument were well conceived and employed. Moreover, we conclude that risk assessment meets the legislative directives and program goals outlined at the time of its introduction. Therefore, we recommend that the program be expanded statewide.

Appendices

Appendix A
Offender Tracking and Data Collection

The recidivism analysis we conducted for this evaluation required us to determine the type of alternative punishment given to each diverted offender, whether the offender successfully completed the program, and, if so, whether he or she reoffended after release. A careful examination of postsentence behavior of the follow-up group will determine if the factors included on the risk assessment instrument indeed predict the likelihood of recidivism. Knowledge of the patterns of recidivism among offenders sentenced during the pilot phase can underwrite revisions to the risk assessment instrument prior to statewide implementation and, in turn, result in more targeted and reliable diversion recommendations. This evaluation is based on a sample of offenders sentenced between December 1997 and September 1999.

Alternative punishments typically run one to six months before the offender, in most cases, moves to some form of probationary status. We compiled profiles for each offender that included the nature of the alternative punishment received, success or failure in the program, and the extent of new criminal activity subsequent to release. All offenders were tracked through August 2000.

Probation offices – the most likely stop for offender reentry

Compiling the data used for tracking offenders from sentencing through alternative programs and back into the community was a particular challenge. The existing automated information sources were silent on offender status after sentencing. In fact, Virginia has no reliable and consistently maintained automated system dedicated to monitoring offender status in alternative punishment programs. And, by extension, no automated source tracks the success or failure of those placed in alternative sanctions, much less why they succeeded or failed. The VCSC maintains an extensive database on all offenders through the sentencing phase, but the automated trail ends when the convicted offender leaves the courthouse.

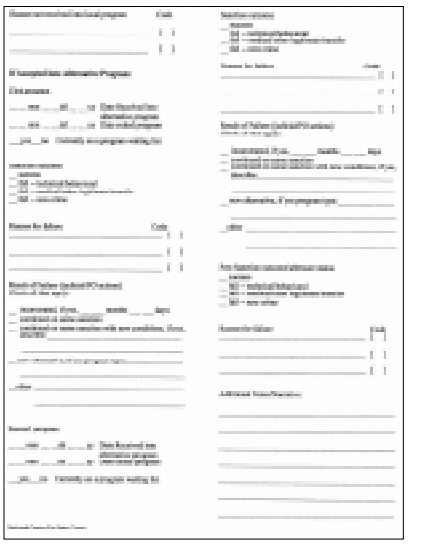
Paper files in local probation offices are the only source of information on the status of diverted offenders. These official records, maintained by the Department of Corrections, contain a chronological history of each offender convicted of a felony. The files contain copies of presentence investigation reports, sentencing guidelines forms, risk assessment forms, psychological and social assessments, criminal history information, sentencing in court orders, and any other information collected on the offender. In addition, the probation officers maintain a written log of all interactions with offenders.

To construct complete profiles of offenders, NCSC evaluation teams visited probation offices in each pilot site and examined the case files. Data collection was slow. Files were typically an inch or more thick, and contained information in a variety of formats (typed pages,

hand written notes, correspondence, testing results, etc.). Local probation staffs were extremely helpful in pulling files, defining acronyms and interpreting entries, and providing sufficient support during the process. The Department of Corrections was very supportive of our efforts, and was instrumental in clearing the way for this part of the project.

Evaluators developed a data collection instrument to collect all information needed for the recidivism study. Critical items on the instrument included the current status of the offender, the type of state alternative sanction(s) given, type of local sanction(s) received, program entry and exit dates, reason for failure, and postsanction behavior.

Data Collection Instruments Used During Project



Data collection instruments used during project

Probation offices have their own local character, and thus the content and organization of case files varied, often substantially, across the pilot circuits. There were special pages and forms found in some districts not found in others. For example, Norfolk probation officers provide the judge with a list of all available alternative sanctions, a description of each alternative, and the eligibility criteria for each program. Henrico County uses a summary sheet that captures the sentence handed down and the special conditions ordered by the court.

Working from case files proved a difficult task for many reasons. First, some offenders were on active supervision while others were inactive. Our ability to compile an accurate record from active cases was based on the files being regularly annotated and updated. In addition, for offenders transferred to other probation districts or out-of-state, considerable time was spent tracking down case files to determine the offender's status. Multiple presentence reports in an offender's jacket made it difficult to determine which was the most current case, and how their current status related to the offense that resulted in an alternative sentence. Finally, some offenders were on waiting lists for diversion, detention, or boot camp placement. Wait times can be as long as several months, and offenders are typically housed in the local jail while waiting. Therefore, given the time constraints of the study, for those offenders required to wait for entrance into certain alternative programs, follow-up time was limited.

Using rap sheets to determine re-offending patterns

For the follow-up group, information from probation office records was augmented by data from criminal history "rap sheets." Data collectors coded both in-state and out-of-state rap sheets and FBI rap sheets to determine the extent of subsequent criminal activity, both during and after the completion of the alternative sanction.

In order to get a comprehensive picture of each diverted offender, recidivism results were merged with data collected from probation officer files and the sentencing guidelines database. Other data sources were also used during this phase to fill in missing information for many offenders. These systems included the presentence report database (PSI), the Supreme Court Automated Information System (CAIS), and the Virginia Community Corrections Information System (VACCIS), maintained by DOC. The resultant database contains over 700 variables that attempt to describe the offender's current offense and criminal history, his or her movement through a "package" of alternative sanctions, and incidences of recidivism during the postalternative period for the 555 tracked offenders.

Appendix B

Does the risk assessment instrument improve our ability to predict recidivism?

The primary measure of effectiveness for the Virginia risk assessment instrument is whether it is able to identify those offenders less likely to recidivate. To put it another way, is the instrument able to identify low risk offenders at an improved rate compared to a world with no instrument? One way to answer this question is to compare the recidivism rates of offenders diverted from prison to a similar group of offenders who were not diverted, but sent to prison.

Out of our sample of 555 diverted offenders in the Virginia risk assessment evaluation, 95 offenders, or 17.1 percent, were arrested for a new felony, and 36 offenders, or 6.5 percent, had a new felony conviction. These offenders were tracked over a period ranging from 11 months and three years, with an average of roughly two years. All of these offenders were diverted, but only some were recommended for diversion by the risk assessment instrument. The remaining offenders were diverted on the basis of judicial intuition, which deemed these offenders good risks for diversion despite the recommendations of the risk assessment instrument. Thus, we will compare recidivism rates for both the recommendations of the risk assessment instrument and judicial discretion.

As a comparison group, we will utilize a study conducted by The National Center for State Courts and the Virginia Criminal Sentencing Commission (Ostrom et al, 1999). This study evaluated the impact of truth-in-sentencing (T.I.S) in Virginia, and tracked 962 offenders for three years to determine if offenders recidivated after their first release from prison for the current term of incarceration in 1993. There were 643 offenders (338 drug, 67 fraud, and 238 larceny) in this sample.

Due to differences in the composition of offenders and the duration of tracking periods between the two studies, comparisons must be made with some caution. The T.I.S. study includes some drug, fraud, and larceny offenders who might not have been eligible for risk assessment (e.g., prior violent offense). However, both studies focused on offenders in Virginia, and included offenders that committed drug, fraud, and larceny offenses in the 1990's. In addition, both studies used similar measures of recidivism (new felony arrest and new felony conviction). Finally, the T.I.S. study made available recidivism rates within one year and within three years. These discrete points represented the beginning and the end points of the range of the tracking period for the risk assessment evaluation, which allowed for drawing reliable conclusions from the comparison.

As we can see in Figure B.1, 41.5 percent of offenders recidivated with a new felony arrest within the first three years in the T.I.S. study, compared to 17.1 percent in the risk evaluation. Since the latter study did not track offenders for a full three years, further information is needed to draw a conclusion. The T.I.S. study found that 56 percent of all recidivism (those rearrested for a new felony) occurred in the first 12 months. As such, we can deduce that approximately 150 of the 267 offenders who recidivated did so within the first 12 months. In other words, 23.2 percent of those tracked were rearrested for a new felony within the first 12 months.[55] This figure is larger than the recidivism rate found with the risk assessment evaluation, which had an average follow-up time of two years. In addition, the new felony conviction rate in the T.I.S. study was 23.8 percent within three years, but only 6.5 percent in the risk assessment evaluation. While the risk assessment evaluation only tracked offenders for an average of two years, the large deviation in percentage of new felony convictions suggests that fewer offenders recidivated in the risk assessment sample. Therefore, we can conclude that a combination of the risk assessment recommendations and judicial intuition succeeded in identifying offenders who would recidivate at a lesser rate than that of offenders imprisoned before the implementation of the pilot program.

Finding: A combination of the risk assessment recommendations and judicial intuition succeeded in identifying offenders who would recidivate at a lesser rate than offenders imprisoned prior to the implementation of the pilot program.

Figure B.1
A Comparison of the Recidivism Rates of Drug, Fraud, and Larceny Offenders

	T.I.S. in Virginia	VA Risk Assessment
New Felony Arrest **	41.5%	17.1%
New Felony Arrest – 1st 12 months	23.2	—
New Felony Conviction **	23.8	6.5

** The truth-in-sentencing study tracked offenders released from prison for three years (Ostrom et al. 1999). The current evaluation tracked offenders for a period ranging between 11 months and three years.

[55] 31.1 percent of the offenders in the T.I.S. evaluation recidivated (a new felony arrest) within the first 21.5 months. This represents the time point where 75 percent of offenders with a new felony arrest committed a recidivistic act.

Appendix C

Recidivist Events Occurring During the Diversion Period

Total Felony	69	Total Technical	54
Total Misdemeanor	70	Total Recidivist Events	193

Drug

Felony	18
Manufact., Sale, Poss. of a Controlled Substance	6
Possession of a Controlled Substance	5
Poss. of Methamphetamine w/ Intent to Distribute	3
Poss. of Cocaine with Intent to Distribute	2
Poss. of Marijuana with Intent to Distribute	1
Other Felony Drug	1
Misdemeanor	4
Possession of Marijuana	2
Other Misdemeanor Drug	2

Person

Felony	6
Possession of a Firearm in the Course of a Felony	2
Abduction & Kidnapping	1
Assault with a Deadly Weapon - Serious Injury	1
Felonious Assault	1
Carjacking	1
Misdemeanor	11
Assault & Battery of a Family Member	5
Assault	2
Assault and Battery	2
Annoying Phone Calls	1
Domestic Assault	1

Property

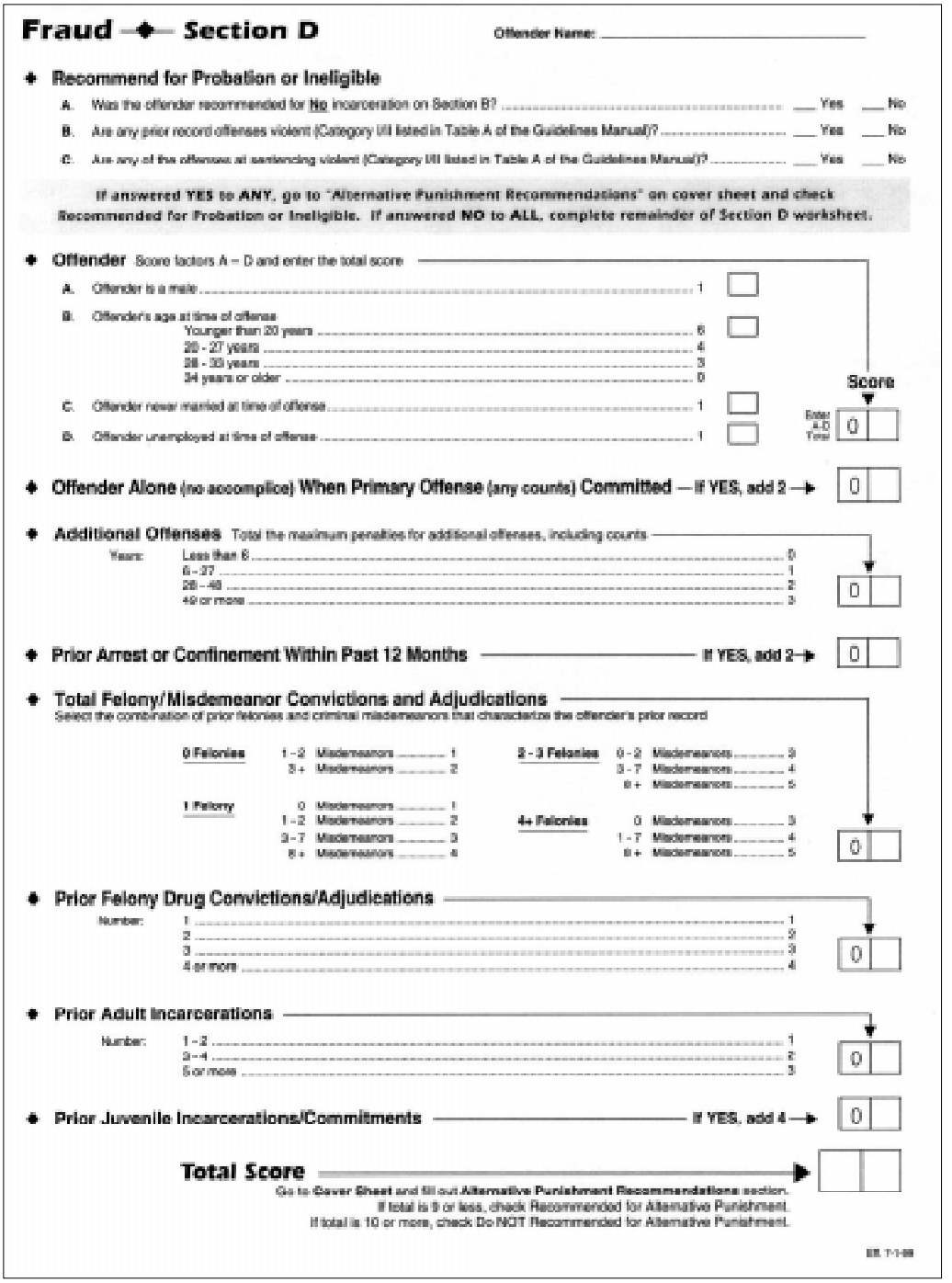
Felony	28
Larceny - 3rd or Later Offense	8
Grand Larceny	6
Unauthorized Use of a Motor Vehicle	4
Issues Two or More Bad Checks in 90 Days	3
Fraud	2
Breaking & Entering w/Intent to Commit a Felony	2
Concealment over $200	1
Hit and Run with Property Damage	1
Embezzlement over $200	1
Misdemeanor	19
Trespass	7
Misdemeanor Larceny	6
Possession of Stolen Goods	3
Issues Bad Checks Under $ 200	1
Destruction of Private Property	1
Shoplifting	1

Other

Felony	17
Forging Public Records	4
Fugitive from Justice	4
Forging, Uttering	3
Possession of a Firearm by a Felon	1
Conspiracy	1
Escape without Force by a Felon	1
Felony Contempt of Court	1
Felony Failure to Appear	1
Other Felony	1
Misdemeanor	36
Failure to Appear	14
Contempt of Court	13
Disorderly Conduct	3
Obstructing Justice	2
Contributing to the Delinquency of a Minor	1
Filing a False Police Report	1
Other Misdemeanor	2
Technical	54
Probation/Parole Violation	36
Probation/Suspended Sentence Revocation	18

Appendix D

Risk Assessment Form



Fraud — Section D

Offender Name: _____

Recommend for Probation or Ineligible

A. Was the offender recommended for No incarceration on Section B? ___ Yes ___ No

B. Are any prior record offenses violent (Category I/II listed in Table A of the Guidelines Manual)? ___ Yes ___ No

C. Are any of the offenses at sentencing violent (Category I/II listed in Table A of the Guidelines Manual)? ___ Yes ___ No

If answered YES to ANY, go to "Alternative Punishment Recommendations" on cover sheet and check Recommended for Probation or Ineligible. If answered NO to ALL, complete remainder of Section D worksheet.

Offender Score factors A – D and enter the total score

A. Offender is a male ..... 1 ☐

B. Offender's age at time of offense
Younger than 20 years ..... 6 ☐
20 - 27 years 4
28 - 33 years 3
34 years or older 0

C. Offender never married at time of offense ..... 1 ☐

D. Offender unemployed at time of offense ..... 1 ☐

Score
Enter A-D Total: 0

Offender Alone (no accomplice) **When Primary Offense** (any counts) **Committed** — If YES, add 2 → 0

Additional Offenses Total the maximum penalties for additional offenses, including counts

Years:
Less than 6 0
6 - 27 1
28 - 48 2
49 or more 3

0

Prior Arrest or Confinement Within Past 12 Months — If YES, add 2 → 0

Total Felony/Misdemeanor Convictions and Adjudications
Select the combination of prior felonies and criminal misdemeanors that characterize the offender's prior record

0 Felonies
1 - 2 Misdemeanors 1
3+ Misdemeanors 2

1 Felony
0 Misdemeanors 1
1 - 2 Misdemeanors 2
3 - 7 Misdemeanors 3
8+ Misdemeanors 4

2 - 3 Felonies
0 - 2 Misdemeanors 3
3 - 7 Misdemeanors 4
8+ Misdemeanors 5

4+ Felonies
0 Misdemeanors 3
1 - 7 Misdemeanors 4
8+ Misdemeanors 5

0

Prior Felony Drug Convictions/Adjudications

Number:
1 1
2 2
3 3
4 or more 4

0

Prior Adult Incarcerations

Number:
1 - 2 1
3 - 4 2
5 or more 3

0

Prior Juvenile Incarcerations/Commitments — If YES, add 4 → 0

Total Score →

Go to **Cover Sheet** and fill out **Alternative Punishment Recommendations** section.
If total is 9 or less, check Recommended for Alternative Punishment.
If total is 10 or more, check Do NOT Recommended for Alternative Punishment.

ER 7-1-98

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