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Enhancing Prison Classification Systems

The Emerging Role of Management Information Systems

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Enhancing Prison Classification Systems: The Emerging Role of Management Information Systems

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Abstract

This report examines how information technology (IT) and computational developments may enhance the productivity of prison classification. Classification is data dependent. It requires high-quality data and sufficient computational capacity to make and evaluate classification decisions. Classification productivity is categorized into two main components (efficiency and effectiveness), each with several subcomponents. Each component is examined to assess how advances in IT and computer power may enhance productivity. Case studies were conducted in seven prisons that had shown innovations in classification, management information systems, and information technology.

Several conclusions emerged. First, criminal justice databases are slowly becoming more integrated and classification should gain profoundly from the speed, comprehensiveness, and integrity of the data. Second, prison classification is showing a trend toward more comprehensive systems, broader information, and multiple goals. This shift will increase the demands on IT for comprehensive data. Third, several knowledge-structuring software technologies are emerging with the potential to substantially improve the classification system. Higher quality data combined with more powerful classification algorithms may produce a substantial jump in classification productivity. Several data mining and artificial intelligence techniques are mentioned in this context. Fourth, the management of change and innovation remains a challenge, and the final chapter deals with lessons learned regarding implementation and change management—especially with regard to IT and classification.

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Executive Summary

Overview and Goals

The overall goal of this project was to examine the degree to which management information systems (MISs) and information technology (IT) support classification decisionmaking in prisons and to suggest various avenues for improvement. The interface between classification and IT has many facets that could be improved, such as the following:

- Data to support classification decisions.
- Classification technology.
- Interface between users and IT software.
- Procedures to monitor the quality of classification decisions.
- Use of advanced analytical technology to build better classifications.
- Strategies for introducing and implementing technology change in prisons.

Valid, effective classification is fundamentally dependent on accurate, timely, and relevant information. As prison information technology evolves and as prison databases become "smarter," these developments have the potential to improve profoundly the quality of offender classification. Conversely, if prison MIS software and related databases are poorly designed, poorly implemented, or ineffectively used, the quality of classification decisions may be substantially undermined.

Current IT and computing power have advanced more rapidly than classification technologies. Specifically, the computing power, memory, and analytical capacity of current computer systems far exceed the requirements of today's classification designs. Basically, current methods of prison classification are underutilizing this information technology infrastructure. The vast memory and analytical power of today's hardware and software offer great potential for improving classification decisionmaking. This project explored these issues.

The goal of the current project is to review the current status of MIS support for prison classification, examine areas in which systemic improvements can lead to improved efficiency and accuracy, and provide some guidelines for transitions to improved systems.

Methods

Two strategies were used to examine the data. First, the relevant professional literature in this field was reviewed. Second, the findings from prior national surveys of prison MIS databases were used to select seven state prison systems for intensive onsite study. These systems had made innovative developments in both IT and classification, offering an opportunity to learn from MIS and classification practitioners. The states selected were Colorado, New York, Washington, Florida, South

Carolina, North Carolina, and New Jersey (see appendixes A–G for summary descriptions).

The following sections review the critical areas of the report and summarize the main findings and key issues.

Current Status of MIS and Classification

The current status of prison databases that support classification procedures, using pertinent findings from the national surveys, is discussed in chapter 1. Although some prison MISs have electronic access to many data elements needed for classification, there is much variation in data access, implementation success, staff expertise, and so on. The level of progress is extremely varied across different prisons.

In almost all prison systems, there is a flurry of activity to upgrade IT systems. The current situation reflects widespread change in both hardware and software. Furthermore, many correctional agencies are engaged in similar challenges, such as building integrated criminal justice databases, shifting from older mainframes to more current hardware and software, and upgrading procedures for data analysis and report generation. Some of the more popular changes include the introduction of internal classification systems, classification instruments and procedures that are valid for women offenders, reentry classification and risk and needs instruments, and the automation of classification algorithms.

A Framework for Improving Classification Productivity: The Many Roles of IT

Chapter 2 offers a framework to clarify how IT can enhance the productivity of classification. Productivity of classification is separated into two overlapping dimensions:

- *Effectiveness:* The quality, usefulness, and validity of classification decisions.
- *Efficiency:* How available prison resources (staff, computers, etc.) are managed and used. Includes ease of use, speed of operations, effective use of staff skills, ease of learning, ease of navigating screens, and so on.

IT is deeply implicated in supporting both dimensions of productivity. Improvements in memory capacity, analytical procedures, software interface, and so on, can enhance each dimension.

The Many Functions of Prison Classification: Their Diverse Information Requirements

To clarify the information requirements of prison classification, professionals must first understand the multiple functions of these classification systems. A narrow or oversimplified perspective on the purposes of classification may result in overlooking key data requirements. Thus, chapter 3 reviews the general purposes of prison classification and examines the information requirements of each purpose.

Prison MISs/databases must provide sufficient data coverage of key results variables to support data acquisition functions and the analytical procedures to produce useful management reports. Each major prison goal (e.g., public or prisoner safety, equity, discipline) is linked to classification processes that require the measurement of specific data elements for each unit of time. The data form the foundation for numerous management reports that support planning, results monitoring, and policy analysis. Managers must understand fully the classification functions to ensure that the MIS is not underutilized or only partially implemented.

Features and Functions of an Automated Prison Classification

Chapter 4 provides a detailed examination of the various features and functions of an automated prison classification system. It is largely based on the various site visits to the seven selected prison systems. It describes numerous innovations and procedures that are incorporated into these prisons' MIS and software used to support classification operations. This chapter also presents a description of a generic system workflow for prison classification that is common to all prison classification operations. Advances in MIS technology have expanded the options for organizing, viewing, retrieving, and reporting data required for day-to-day line staff and management decisions. Current MIS software can empower staff with the ability to create and revise statistical reports as needed, given that system features and functions are responsive to user needs and the particular circumstances in play at the individual agency. Training and competence building are critical to user development of a deeper understanding of statistical reports and the issues of valid measurement. Increased competence and more powerful and accessible software should encourage prison managers to make greater use of these reporting capabilities, stay better informed, and be more effective in meeting agency objectives.

Interface Designs and Basic Principles

Chapter 5 reviews software interface designs for automated classification and supporting MIS functions. Many prisons are engaged in a paradigm shift from older command-driven interfaces to "friendlier" graphical user interfaces (GUIs). In many prison systems, classification staff may identify problems in the user interface (e.g., screen designs, navigation procedures) and can recommend revisions or modifications. Interface design is critical as it can either support efficiency or be cumbersome for users.

Computer technology drives user-interface (UI) design. One danger of recent advances is that they may force humans to use unnatural cognitive processes. Many problems with modern UI designs appear to originate from well-intentioned, intelligent, and capable software engineers' attempts to improve approaches that are inconsistent with how people think and operate. A refocus on user goals and working styles seems to be the essence of recent advances (Cooper, 1995). Whereas the user must focus on job-related tasks, the software designer must look beyond these to identify the user's goals. The design process for supporting prison classification work should respond to goals, user patterns and needs, and requirements for data integrity, portability, and learnability.

These requirements vary widely in different prison contexts and from application to application. The software designer must explore these user-centered stipulations. In a prison context, the driving force behind the design of new software must be the goals of its users (prison line staff, operations managers, administration, policymakers, and planners). Recently developed software innovations that support prison classification suggest that user-centered and graphical/visual interfaces should continue to be incorporated into MIS software, although clearly these advances are in a state of rapid evolution and vary widely across prisons.

Designing a Self-Evaluation Assessment Chart

Chapter 6 focuses primarily on classification software. It presents a self-evaluation assessment chart that can be used to rate the comprehensiveness, functionality, and usability of a prison's current MIS and classification software and thus to provide prison systems with a practical evaluation tool to guide their assessment of their own systems.

Challenge of Building Integrated Criminal Justice Databases

Many prison systems are currently engaged in integrating various databases from different criminal justice agencies. This issue is one of the current major changes that is engaging the time and energy of MIS staff and administrators. Such integration aims to produce more comprehensive data, reduce redundant data entry, and ensure higher data integrity. All of these are critical for classification operations. Chapter 7 describes this challenge and offers a strategy for integration. Barriers to integration are identified through examples of agency autonomy and mistrust, divergent coding procedures, different levels of development of automation, and the use of different computer vendors. Techniques for data exchange are reviewed. Finally, several principles of data integration are discussed in the context of prison classification.

The fundamental advantage of database integration from the perspective of classification decisionmaking is increased accessibility of key data elements to classification staff. Cross-verification of risk and needs data is also aided by the ability to transfer data electronically. Thus, the emergence and development of integrated interagency databases have tremendous potential for strengthening the integrity and coverage of classification data, which in turn strengthens the predictive validity and usefulness of prison classifications.

Individual criminal justice agencies can no longer simply maintain their own isolated MIS needs without also considering integration with other agencies. The criminal justice system is a continuum of offender-based information processes that operate more efficiently when linked together. The traditional approach of maintaining a series of disconnected and independent databases has consistently led to information processing bottlenecks. Integrated information systems seem inevitable and hold particular promise for prison classification and all other forms of criminal justice data integration and analysis. Classification and risk assessment units in jails,

prisons, probation, and parole are in a key position because they have been the focus of information integration efforts. In this role, classification and assessment have already grappled with many of the issues that are involved in assessing data integrity, verification processes, and the integration of diverse data elements in making high-risk decisions regarding offenders.

The final three chapters of this report propose improvements in three critical areas to strengthen prison classification systems.

New Directions in Classification Factors

Classifications can be vastly improved by selecting more valid and relevant classification factors. Chapter 8 addresses the problem of finding more powerful, valid, and relevant classificatory information for prison classifications. The MIS database is critical in providing the relevant classification factors. A database becomes "smarter" to the degree that it contains relevant classification factors and eliminates irrelevant factors.

Current prison classification systems have been criticized for oversimplification and narrowness of their information coverage and for the use of irrelevant factors. Additionally, different prison classification systems (external classification, internal classification, reclassification, community reentry classification) have quite different purposes and may require different risk factors. The chapter reviews the information requirements and emerging trends in selecting variables for these classification functions. Several specific systems for internal and community reentry classification are evaluated, including the Adult Internal Management System, the Level of Service Inventory, the Client Management Classification, the system for Correctional Offender Management Profiling for Alternative Sanctions, Megargee's Minnesota Multiphasic Personality Inventory (MMPI) typology, and others. Each methodology is evaluated for validity and reliability.

Although there is movement toward more comprehensive classification systems and more powerful predictive and explanatory factors, most prison systems have a long way to go in the search for optimal classification factors. The more powerful memories and fast search procedures of today's computers and MISs will enhance the ability of classification procedures to use multiple factors and support the increased information content of emerging classification routines. This increased technical capacity should promote the discovery of and convergence on more powerful classification factors.

Prison classification is in an exploratory phase of searching for more comprehensive and effective classification factors. The United States may be at the threshold of considerable development of more effective prison classifications. The convergence of richer and more informative databases, coupled with a great rise in the analytical power of computer systems, should accelerate the design of effective prison classifications.

New Directions in the Analytical Capacity of Prison MISs

In addition to improved risk factors, another vibrant area of innovation is the development of improved analytical capacity of the MIS. The computational power of computers has evolved dramatically, offering many opportunities to improve the ways in which classification data are organized with far more powerful analytic, graphical, and reporting capacities. Chapter 9 discusses advances in these areas. Many of these were being implemented in the prison systems selected for this study. Specifically, innovative developments in the following areas are discussed:

- *The emergence of the data warehouse concept:* To improve the comprehensiveness, scope, and validity of databases.
- *Online Analysis and Programming (OLAP):* To improve production and dissemination of management reports.
- *Automated error analysis:* To track quality control of classification decisions.
- *Data-mining and artificial intelligence procedures:* To provide more sophisticated methods to create predictive and other kinds of classification systems optimized for particular correctional decision needs.

Examples of all of the above technologies are given to illustrate their applicability in improving prison classification.

Building Strategies for Change Management When Introducing New Information Technologies

The rapid evolution of information processing hardware and the constant flurry of prison software innovation in IT place a premium on the change-management skills of managers. Unfortunately, many prisons have considerable difficulty in effectively implementing new information technologies. Thus, it is critical that technical innovations are introduced in a careful and effective manner. Chapter 10 develops a framework and guidelines for management of technical change in correctional contexts. Using the general literature on change management (with special reference to IT) and lessons learned from the seven prisons studied in this project, this chapter describes four stages of implementation and numerous subtasks in each. These may be useful to prison managers in achieving more successful implementation of new IT hardware or software to build an excellent information infrastructure for prison classifications.

Key elements in change management include developing an implementation team to identify key issues and garner the support of staff and management for the change, addressing organizational capacity for change, planning adequate overlap of systems to ensure a smooth transition, securing staff feedback and incorporating improvements on an ongoing basis, and assessing the success of the changes in terms of increased efficiency and goal attainment. The prisons that were selected for study in this project employed many of these strategies, which contributed to their

success in the process of transition and to the continued high level of functioning of their MIS and classification operations.

Recommendations and Conclusions

Recommendations presented in detail in the chapters converge on several main goals that are critical to the rapid evolution of correctional classification procedures:

- To upgrade the quality, coverage, and salience of classification data.
- To upgrade the computational methods used to build classification systems.
- To upgrade the statistical and graphics reporting software for correctional managers to analyze their databases and "mine" them for more effective management reports focused on their information needs.

For example, the authors recommend the use of a broader set of correctional data and risk factors that characterize recent classification systems. The search for more comprehensive and salient classification variables, however, must be guided by developments in criminological theory and evaluation research. To manage these expanded data, the authors recommend the implementation of data warehouses, faster search engines, faster computer processing, and more intuitive GUIs. In chapter 9, the authors recommend the use of several advanced data analytic techniques to allow more productive use of these databases both for making classification decisions and for monitoring the quality and impact of these decisions. Several data analytic advances are recommended, including advances in OLAP, data-mining techniques of particular relevance to classification (e.g., inductive decision trees and advanced clustering methods), and more effective management reporting and analysis software.

CHAPTER one

Current Status of MIS Support for Prison Classification: A Brief Review

Introduction

This project examines the ways in which information technology (IT) and management information systems (MISs) can enhance classification procedures in prisons and other adult correctional agencies. Classification is central in guiding decisionmaking for many aspects of offender processing. In its decision-support function, classification is highly dependent on the quality and timeliness of data. An examination of how the prison information infrastructure supports classification decisions revealed that this infrastructure retains many embedded conventions from the precomputing era—that is, many practices and procedures reflect manual procedures and highly simplified classification practices. Some profound inefficiencies and oversimplifications in classification are prevalent. This situation implies tremendous opportunities for change. The United States is perhaps in the early stages of a wave of innovation in using IT to help support the more complex classifications and decisionmaking that are required to run correctional agencies in an efficient and ethical manner.

This chapter briefly reviews the main findings of several recent national studies on the current status of prison MISs and emphasizes the critical importance of automation for prison classification. An MIS supports classification in many ways, including retrieval of key classification risk and needs factors and other relevant information, and is critical for several other functions (e.g., special keep-separate alerts and warnings, efficient data entry, automation of classification algorithms) for daily tracking and monitoring of inmates and for documenting decisions. Classification, in turn, drives many subsidiary processing decisions such as those pertaining to bed placement, housing, disciplinary procedures, scheduling and alerts, transportation arrangements, and release dates.

Classification procedures depend on the MIS/IT system for the quality, scope, and timeliness of data. Improvements in the information infrastructure can enhance the productivity of classification in both efficiency (increasing speed) and validity (fewer classification errors). The system should also support staff's ability to monitor whether their classification decisions are implemented in accordance with policy and provide data with which to evaluate the general impact of classification decisions on the overall functioning of the prison.

A recent national survey of prison systems in all 50 states examined whether their MISs could provide the needed data for classification decisions (National Institute of Corrections [NIC], 1999). A related survey by the Bureau of Justice Statistics (BJS) in 1998 also examined the data coverage in these state prison systems. These survey findings provide an important background to the present study. The sections below summarize the main findings from these surveys regarding prison MISs and IT in their ability to support classification procedures (NIC, 1999; BJS, 1998; Fowler, 1999). (See also Hardyman et al., 2002.)

General Status of MISs and IT in Prison Classification

Analytical restrictions and data gaps weaken the degree to which an MIS can support case-level classification decisions or provide the statistical analysis to support management in strategic planning and results monitoring.

A consensus finding of these reports was that the overall impact and effectiveness of IT in prisons and corrections in general have so far not met expectations. Fowler (1999) suggested that IT in many correctional agencies is restricted to word processing and data entry and retrieval on a case-by-case basis, using unconnected databases and often obsolete hardware. She acknowledged that, although updated software and more powerful computers are being continually introduced, these investments often have little impact on critical decisions regarding offenders. The 1999 NIC survey results were consistent with these findings and confirmed that many items of data that are critical for classification are still collected and stored manually or are often missing and that many systems have a very limited ability to produce management and statistical reports for analyzing the impact and results of classification functions.

Several major observations are described below.

Developmental Lag in Corrections

A common observation is that IT and MISs in corrections have lagged behind parallel systems in law enforcement and the courts (Fowler, 1999). The 1999 NIC report, although identifying several excellent prison MISs, generally supported Fowler's comment regarding developmental lag. This lag, in part, results from correctional priorities of security, control, and transactional processing of individual offenders rather than management or analytical functions (see Hardyman et al., 2002).

Aging or Obsolete Mainframe Systems

Many state prison systems struggle with dated and inefficient mainframe systems and "unfriendly" software. A generic problem for these older systems is that the escalation of demands for aggregated analyses, broader data requirements, and many new functions have accrued over time. These older systems, in many instances, have reached their performance limits and now require substantial upgrades; the alternative is to abandon them because they are too expensive to maintain and too limited in their functionality.

Absence of Automated Classification

The NIC (1999) survey reported that only 19 state departments of corrections (DOCs) had automated the computation of inmates' classification scores. Automation saves staff time, reduces errors, and produces greater consistency in classification decisions. Yet these functions are done manually in most prisons. Automated computation of classification scores has been implemented successfully in most of the systems identified for this study (see appendixes). These systems were in Colorado, Florida, Illinois, Minnesota, New York, New Jersey, North Carolina, Oklahoma, Oregon, South Carolina, Vermont, and Washington (NIC, 1999).

Development of MISs and IT

To counterbalance the problems previously described, the NIC (1999) and BJS (1998) surveys emphasized the rapid development that currently characterizes most prison MISs/IT systems. The 1999 NIC report, for example, indicated that virtually all state prison systems were planning upgrades to both hardware and MIS software. This drive to improve IT was occurring equally in those systems that were lagging and in systems that had already introduced advanced automation and IT.

Variability Across Prison Systems

Another finding was great variability in automation and MIS/IT capacities across prisons. The 1999 NIC survey found much variation in the ability of each prison system's MIS to provide critical data, in relative analytical capacity, in the ability to produce management reports, and in staffs' ability to use IT procedures. For example, some prison systems had only partially automated their manual files and were focused on individual case tracking. At the other extreme, some systems had comprehensive coverage of key data, effective inmate tracking, a broad range of management reports, and sophisticated analytical procedures.

In many cases, the automation of manual procedures perpetuated inefficient and ineffective approaches (e.g., inadequate coding, oversimplified classification algorithms). Essentially, design flaws in and inadequacies of traditional manual procedures were embedded in new, automated IT software without critical review.

Data Integration Across Justice Agency Databases

A challenge in many state prison systems is to exchange data with and receive data from other justice agency databases, minimize redundant data entry, and build more comprehensive databases. This can enhance efficiency of data collection, increase accuracy, and reduce classification errors. The 1999 NIC survey showed that staff in many prison systems must reenter many critical data elements that had already been collected for paper records. Among the more disturbing findings from a classification perspective was that only 16 DOCs indicated that they received criminal history data electronically from other criminal justice agencies and that only 28 DOCs were able to download data from the National Crime Information Center (NCIC)

National Criminal History System. Data integration across diverse criminal justice databases is a high priority for many state prison systems (NIC, 1999, p. 6).

Critical Data Gaps for Classification and Decisionmaking

The NIC (1999) and BJS (1998) surveys assessed the availability of key data elements in state MIS databases. These surveys revealed some disturbing gaps in the availability of important data elements. The NIC survey found that the more highly automated prison systems generally had fewer data gaps. The following key findings are particularly relevant to classification:

- Prior warrants and detainers were not included in over a third of the prison MISs.
- Probation and parole violations were available in only 30 prison MISs.
- Prior adult convictions and sentences were available in only 26 prison MISs.
- Prior disciplinary history and behavioral adjustment were available in only 22 prison MISs.
- Adult arrest records were available in only 18 prison MISs.
- Disciplinary histories from previous jail or prison incarcerations were available in only 10 prison MISs.
- Juvenile arrest records and incarceration history were available in only 10 prison MISs.
- Data on current arrests were often missing. The BJS (1998) survey reported, for example, that only 13 prison MISs contained data on whether a weapon was involved; even fewer indicated the number of victims (although some stored this information on paper).
- The NIJ (1998) survey revealed substantial gaps in recidivism measures. Although most prison databases contained some recidivism indicators, few provided data on rearrests, reconvictions, number of prison incarcerations, or the time interval between each incarceration.
- The availability of needs-assessment data was mixed. Although many state prisons used various psychometric needs-assessment instruments, well over one-third did not enter these data into their MISs. Eleven prison systems entered these questionnaire data directly on computer screens during an assessment interview, and 21 prison systems keypunched these data into their MISs from paper questionnaires.

- The BJS (1998) report indicated that data on program participation, program outcomes, drug testing, and so forth, were not always available electronically.

- Data on disciplinary misconduct were collected by most prisons but often only on paper, which is inefficient for both retrieval and analysis purposes.

A general conclusion is that the MIS databases in many state DOCs do not contain all the data elements commonly regarded as essential for classification. Although these data elements may be available in the manual files of some prison systems, this data storage approach reduces the efficiency of data retrieval, introduces classification errors, and restricts statistical analysis.

MIS Analytical Capacity To Support Policy and Management Analysis

Aside from the availability of data for classification decisions, the NIC (1999) survey also examined the analytical capability of each state's MIS. Various statistical analyses and management reports can be produced from classification data (NIC, 1999, p. 4). These analytical procedures include population profiling, trend analysis and forecasting, budgeting, problem identification, and evaluation studies. These are required to provide well-organized statistical tables and graphs to help make decisions regarding policy,, planning, resource allocation, and so forth. Their absence undermines the use of IT and organizational databases to support management and policy-level activities.

To ascertain the analytical capacity of prison MISs, the NIC (1999) survey identified several standard reports that are useful for managing and monitoring classification operations. These included statistical reports on housing assignments, custody levels, risk levels, offense breakdowns, projected release dates, and classification override rates. The following findings emerged:

- Housing assignment reports were automated in most state DOCs (43 out of 50).

- Only 29 DOCs produced automated classification override rate reports.

- Automated reports on classification decisions and followthrough actions were automatically produced in only 32 DOCs.

- Reports on housing placements outside the formal classification system were produced automatically in only 24 DOCs. The work needed to produce this report manually is substantial compared with the rapid and simple operation of automated statistical software.

- Most prison DOCs (39 out of 50) could produce automated statistical aggregation reports on custody and risk level and offense categories.

- Bedspace projections using statistical procedures were automated in only 13 systems.

- Automated reports and calculations on projected release dates were generated electronically in 36 DOCs. These calculations incorporate anticipated credits for good time, program participation, and other key factors. These projections are of great value in helping to predict facility population size over time.

The reports selected in the NIC (1999) survey clearly did not cover all possible reports being produced by state prison MISs. The survey nonetheless offers a broad progress indicator of the states' ability to generate MIS statistical reports and reflects the analytical capacity of these systems. The report also noted that most states were engaged in active planning to develop additional statistical management reports and to upgrade their statistical and analytical capacity.

Primary Goals of This Project

The general goal of this project is to explore the ways in which IT and MIS software can enhance the productivity of prison classification functions. This exploration may require rethinking current classification approaches and procedures to take advantage of increases in computing power, memory, and analytical capabilities. The following points briefly describe the specific goals of this project:

- **To learn from successful MISs and classifications in selected state correctional systems.** Using the findings of the NIC (1999) survey, the authors selected several leading state prison systems for site visits. Summary descriptions of the systems at these sites illustrate innovative developments in prisoner classification, MISs, and related IT. The aims were to understand the strengths of these systems, to learn from their management styles, and to clarify the implementation strategies that produced these innovations. These lessons are set forth in the remaining chapters of this report.

  Brief descriptions of these systems cover the technical design, operations, and quality of implementation of classification systems and information infrastructures (see appendixes A–G). The authors emphasize the selection and coverage of data elements used to measure correctional policies and goals related to classification and those used to monitor the impact and success of classification. The capacity of each agency to assess outcomes and performance and to conduct impact monitoring falls within the evaluation.

- **To identify critical processes whereby prison information systems support classification.** Critical enhancements to a prison MIS that allow it to support and enhance classification are identified. These enhancements address the following topics:

- ❖ *Information requirements of prison classification:* Chapter 3 covers basic requirements (content validity, information coverage, data reliability, verification and auditing, and selection of risk factors).

- ❖ *Self-assessment procedures:* Chapter 6 reports on a simple self-assessment instrument developed to guide prison managers in evaluating their MIS for quality of classification support.

- ❖ *Implementation strategies for introducing innovative change in IT:* Chapter 10 integrates lessons learned from the authors' studies of selected leading prison systems and from the literature on technological innovation. This culminates in an implementation roadmap for prison managers introducing changes to their MIS/classification procedures.

- ◆ **To compile key technical advances in the design of comprehensive classification systems.** An additional goal is to suggest state-of-the-art advancements in the design and development of comprehensive prison classification systems. This project does not focus on pure classification research (i.e., new classification designs, theoretical models, or statistical approaches to classification). However, it offers a rare opportunity for a systematic evaluation of the technical designs and MIS information infrastructure that support correctional classification. Thus the authors suggest revisions and enhancements to the design of information infrastructures that contribute to the evolution and strengthening of prison classifications.

Conclusion

This chapter has provided an overview of how management information systems may support or undermine decisionmaking processes and offender classification in prisons. The accuracy of decisionmaking regarding criminal offenders profoundly depends on the quality and completeness of the available information—particularly the availability of key criminogenic risk factors that have both explanatory and predictive powers regarding offending behaviors.

An overall conclusion of several recent surveys is that the effectiveness of prison databases in supporting classification decisions has been weakened by several factors: information gaps, poor integration across criminal justice databases, and, in some cases, a deficient analytical capacity that prevents the available data from being modeled and integrated in the most powerful manner. On the other hand, the current situation throughout the criminal justice system is characterized by an impressive development in the understanding of different pathways to crime, the identification of key factors associated with desistance, and the ending of criminal careers and improved measurement technologies. Also evident are immense gains in computer memory capacity, the raw analytical power of databases, and the

emergence of sophisticated statistical and quantitative models that may dramatically enhance predictive and explanatory abilities to support criminal justice decision-making. Basically, criminal justice databases are becoming smarter, with larger memories and more analytical capacity.

CHAPTER two

MIS Software, IT, and Classification Productivity

Introduction

How can MIS software and IT enhance prison classification productivity? This chapter develops a framework for answering this question. In the past two decades, computing power and memory have advanced far more rapidly than prison classification procedures. Most classification methods currently used in prisons (and virtually throughout corrections) simply use computers to implement manual techniques that emerged in the precomputer era and thus make little use of the computational power of today's IT. The vast organizational databases and analytical capacities of current prison MISs/IT systems offer great potential for improving classification methods and monitoring and evaluating classification decisions.

Prison Classification as "Knowledge Work"

Offender classification is knowledge work that involves gathering and analyzing data to make decisions and generate new information. Contemporary information technologies, including prison MISs/IT systems, are designed to support the productivity of knowledge workers. Classification staff compile criminal histories, social histories, risk/needs factors, and other data and then—using both implicit mental models and explicit algorithms (usually linear models)—make classification decisions. This requires accessing multiple information sources, integrating diverse information, and choosing among alternatives. These practices involve significant human cognitive activity. Classification decisions affect offender processing, housing, transfer, treatment, and case management/planning, all of which have crucial implications for both the offender and the prison. Classification and decision-making are followed by communication, explanations, justifications, and followups to coordinate decisions across organizational units. These tasks, which often must be done quickly and under considerable stress, may cause cognitive overload.

In addition, classification staff must perform more mundane data processing and clerical tasks (e.g., producing reports; completing data entry screens; formatting and printing documents; and communicating decisions by e-mail, by voice mail, and in writing). The prison MIS/IT system therefore has numerous features and functions that can, depending on whether or not they are used properly, either enhance or diminish staff levels of productivity and cognitive stress in each of these areas.

Classification Productivity

The productivity of classification procedures provides a fundamental basis for realizing most of a prison's key correctional goals. The productivity of prison classification can be analyzed in terms of two broad dimensions. The first is the *number* of classification decisions made per time period by each officer. Officers and classification departments in different prisons can have quite different productivity rates. Work rates may differ among officers because of factors such as individual skills, training levels, and motivation. However, work rates may also vary based on MIS/IT support factors such as human-computer interface and screen design, functionality of classification software, design of numerical algorithms, and users' computer skills.

Individual styles of organizing and managing work influence productivity. A highly motivated officer may search longer and more deeply for critical risk and background factors, engage in more vigilant verification of criminal or social history data, or conduct more probing classification interviews. This officer expends more cognitive energy, time, and effort and considers more criminological factors in the information search. This officer may appear less efficient. In contrast, a classification officer who oversimplifies the task and makes little use of available IT may appear more efficient. Clearly, the quantity of classification decisions per unit of time cannot be the sole criterion of productivity.

The second dimension of classification productivity—the *quality,* or *validity,* of classification decisions—can have a more profound impact on productivity than the quantity of work. Classification errors and poor decisionmaking can be tremendously costly to a prison. Violence against inmates or staff, escapes, disciplinary disorder, and waste of prison resources can all result from classification errors and the inappropriate commingling of offenders. Poor classification decisions can create multiple costs that dwarf the initial cost of conducting a careful and valid classification. For example, a single lawsuit resulting from an erroneous classification might involve millions of dollars, consume a huge amount of staff and management time, and impose great emotional stress on staff.

Strategies for Using IT To Improve Classification Productivity

The two broad dimensions of classification productivity are the following:

- *Effectiveness:* The quality, utility, or validity of classification decisions.
- *Efficiency:* Management and use of resources (staff, computers, etc.) for maximum utility.

Subsidiary aspects of these two dimensions govern the specific ways in which the productivity of prison classification officers may be enhanced.

Strategies for Improving Classification Effectiveness

The fundamental validity of classification decisions may be enhanced in several ways. For example, higher accuracy and fewer errors may be achieved by using more comprehensive classification factors, more valid factors, and more powerful classification algorithms or by enhancing staff skills and providing staff with more powerful IT tools and technical classification and implementation resources. IT and MISs can enhance the validity of classification decisions by implementing the following recommendations:

- *Using deeper, more comprehensive, and more valid classification risk factors:* Most current prison classification methods, particularly for initial custody and security arrangements, use a very narrow or restricted set of classification factors primarily because most current prison classification methods were developed for manual use and were thus constrained by the limits of human information processing (see Austin, 1993; Brennan, 1987a, 1993; Jones, 1995; Palmer, 1992; Sechrest, 1987). These systems were designed to place minimal demands on staff for information coverage, search processes, and computational complexity. These classification methods have been challenged for their restricted choice of risk factors, overly simplistic scoring algorithms, lack of comprehensiveness, inadequate depth, and poor validity. Palmer (1992), MacKenzie (1988), Sechrest (1987), and others have been critical of the impoverished coverage of prevailing prison classification systems for treatment planning and content validity.[1]

  The existing, more powerful MISs/IT systems can be reengineered to provide a more comprehensive and broader range of relevant risk and needs factors, institutional disciplinary behaviors, and other crucial risk factors. Revamped IT systems can improve the organization of critical data, minimize cognitive overload by presenting data more clearly, and quicken data retrieval.

- *Using more advanced classification methods:* A second approach to enhancing classification validity and reducing errors involves the use of more powerful analytical classification computer algorithms to integrate risk and needs data into higher validity decisions. Several extremely powerful classification techniques have only become feasible with advances in computing power during the past decade. These new classification algorithms (inductive decision trees, neural networks, pattern recognition, clustering methods, signal-detection analysis) far exceed most current correctional classification procedures in enabling more informative classification systems, strong decision support for individual offenders, and systematic measures of the quality of classification decisions.

These technologies have rarely been applied to offender classification procedures in prisons but offer the promise of profound advances in both predictive validity and comprehensive coverage of variables. Recent examples include the work of Quinsey et al. (1998) and Brennan and Oliver (2000) in using complex pattern recognition to build typologies of offenders based on broad coverage of the key risk and needs factors.

More powerful computation and advanced software have also helped to increase the ability to monitor the quality of classification decisions using signal-detection theory (SDT) and related methods (see Harvey et al., 1992; Quinsey et al., 1998; Brennan and Harvey, 2000). SDT offers the correctional manager significant advances for assessing and monitoring the quality of classification decisions, conducting error analyses, and setting classification thresholds to guide decisionmaking.

Systematic quantitative analysis of classification errors has been almost totally ignored in current classification practice in criminal justice institutions except, perhaps, for initial concern with the predictive validity of any new classification instrument. SDT has only recently been introduced into criminal justice applications and is not yet routinely used in correctional institutions (Brennan and Harvey 2000; Mossman, 1994; Quinsey et al., 1998).

- *Providing more useful management and statistical reports including advanced graphics:* Another area of improvement for advanced IT is the production of targeted and timely statistical management reports for all stakeholders whose work depends on classification. Recent innovations include report-generating procedures and improved analytical capacities that offer easy-to-use yet flexible analytics and reporting. These should allow classification managers to make more effective use of the vast classification databases that are compiled in most prisons. More timely and targeted reports can vastly improve the ability of the classification manager to monitor the quality and impact of classification decisions and thus support continuous improvement of the classification process.

  Advanced IT can improve reports in two fundamental ways: (1) by incorporating more powerful statistical analysis procedures to summarize raw data and transform them into actionable strategic knowledge—South Carolina, for example, is experimenting with complex dynamic systems models for prison population forecasting, and other systems are examining various forms of advanced nonlinear trend analyses—and (2) by providing managers with graphic representations of management data. Data overload is a serious problem; graphic outputs such as trend lines and three-dimensional charts can summarize and present vast amounts of complex data and communicate the basic findings more directly than raw statistical tables.

- *Incorporating knowledge engineering tools:* Classification validity ultimately depends on the quality of the data on which it is based. Verification and error

checking are critical for minimizing errors that may arise from erroneous data. For example, incomplete criminal histories will almost inevitably result in false-negative classification errors. Although cross-verification techniques have long been emphasized in correctional classification (Brennan, 1987b), they heretofore involved human inspection that placed extreme demands on staff and management time.

Recent advances in knowledge engineering techniques have greatly improved the ability of MIS software to check data integrity and inconsistency and detect anomalies (Han and Kamber, 2001). New technology allows computers to inspect their own databases. Outlier patterns and "strange cases" that may reflect data errors or data inconsistencies can now be automatically identified and flagged by the computer. Brennan and Oliver (2001) used knowledge engineering tools to identify multiple contradictions in offender classification data that might reflect lying, data entry errors, missing data, and anomalies. These have been programmed into the Correctional Offender Management Profiling for Alternative Sanctions (COMPAS) MIS to flag offenders whose data records suggest lying, poor data, or a high likelihood of false-positive or false-negative classification errors.

Strategies for Improving Classification Efficiency

Efficiency, which is the second main dimension of classification productivity, also can be improved by several MIS strategies. To achieve efficiency gains, MIS/IT software may be designed to achieve the following goals/strategies:

- To reduce time, effort, and errors of routine staff work by improving interface designs.
- To reduce learning time for MIS/IT procedures by implementing clearer designs.
- To reduce time and effort by speedier production and improved formatting of output reports and other documents.
- To minimize unnecessary expansion of work for specific stages of classification decisionmaking.
- To reduce staff time/effort spent searching for data by using more efficient search procedures.
- To reduce the time, effort, and costs of communicating and coordinating classification decisions with other relevant staff and prison units by creating and using more effective communication devices.

- To reduce information overload and related stress and inefficiencies through appropriate information compression techniques and simplified management reports and graphics.

The section below describes these strategies.

Improving interface design to reduce staff time, effort, and errors. Prison classification requires interaction with both manual and computerized databases. Procedures for entering, retrieving, integrating, and communicating data can either be simple and efficient or create stress, frustration, and significant errors. Prisonwide standards for common protocols and nomenclatures and carefully designed navigation procedures may all help to reduce stress, errors, and the time required to complete the task.

Classification forms and screens are key tools for staff, and their designs can be intuitive, logical, and coherent or cumbersome and counterintuitive. Simple keyboard macros can facilitate switching between applications, and frequently conducted multiple computer operations can be represented by a single template or icon. Default options can be introduced so that the speed of entering classification data is optimized (e.g., cursor movement can be designed to save time and reduce errors). Although these improvements may result in only minimal time saved in any single operation, the cumulative time savings over repeated uses by many staff members can be substantial.

Reducing learning time for MIS changes. All MISs/IT software systems incur learning costs. Any software changes will create some stress, because staff must learn new procedures to complete routine classification tasks accurately. New software design and implementation efficiency is therefore a critical element that should be addressed in the design phase. "Help" facilities and online tutorials should be accessible to shorten the learning curve.

Standardizing routine classification tasks and output reports. Standardizing all forms, classification procedures, and report formats will reduce staff time and effort. Standardized procedures allow for efficiency of learning and use. Repeated or standardized output reports can be produced using templates and software macros. These save repetitive steps and use standardized formatting. Each prison classification unit has several reports (e.g., population breakdowns by custody levels, disciplinary rates by custody levels) that are regularly required. Macros are often used in building routine statistical reports on a periodic basis (weekly, monthly, quarterly, etc.). Most of the prison MISs/IT systems that were reviewed contained various macros for producing management and statistical reports, including quarterly classifications status reports, quarterly disciplinary reports, and 12-month trend lines for selected performance indicators.

Minimizing unnecessary expansion of classification tasks. Given that some classification tasks have no clear stopping points (e.g., information search or decision-making stage), the unnecessary expansion of these tasks is a danger. MIS/IT procedures may provide feedback to serve as stopping rules for these tasks (e.g., an upper limit on information searches for critical risk and needs factors, or probability

calculations of class membership when successive risk factors are added to an offender profile). Individual work-scheduling software also may help reduce expansion by introducing time-based stopping rules to limit open-ended classification activities. Although they are now being used in other production industries, these procedures have not yet been introduced into corrections.

Designing efficient search procedures to minimize search time. Efficiency is enhanced by any reduction in search time for information retrieval tasks. This has been an ongoing concern for correctional data retrieval systems, and there appears to be continuing improvement in this area. Classification staff must repeatedly search very large databases. Effective MIS/IT search algorithms must provide fast searches and rapid information processing to reach classification decisions with a high probability of correct classification. Search software (engines) is widely used to locate individual inmates, particular data elements, and so on, in large databases. A hit occurs when a name or keyword combination is encountered in the database. Highly complex combinations of features also can be used to specify search criteria. Increasingly, search engines provide relevance scores for each hit to increase efficiency.

Implementing easier-to-use analytical procedures for comprehensive prison databases. Highly complex and very large multidimensional databases across diverse criminal justice agencies, or "data warehouses," are increasingly being developed in the prison context. Several prison systems in this study (e.g., Washington's, South Carolina's) mentioned the Online Analysis and Programming (OLAP) procedure as a new technical development they were planning to implement to enhance analytical capacities in conducting exploratory analyses of multidimensional prisonwide databases and generating reports (see chapter 9).

Reducing time and effort for communication and coordination with other prison units. Effective communication among prison staff and classification units regarding the implications of the offender's classification level for treatment, transport, housing, and security of the offender is critical to effective management. Delays, errors, and communication gaps undermine both efficiency and coordination between the classification unit and other prison operations. Effective MISs/IT systems should offer tools to upgrade communication and coordination among staff members and units. The MIS/IT system is increasingly critical in supporting these coordination and communication functions. Technologies such as e-mail, fax, group coordination software for real-time communication with multiple units (e.g., electronic face-to-face meetings), shared online scheduling, and shared access to decisions in real time are examples of higher levels of communication and coordination available through expanded MISs. Lotus Notes is an example of a program that was being used by the prison systems identified in this study. Another example is collaborative authoring software, which allows different personnel to work concurrently on the same report.

Reducing stress and errors caused by information overload. A single offender can generate an enormous amount of information. The human capacity to process and remember all salient data elements is limited, which can result in overload.

Handling the myriad data elements associated with prison classification can produce information overload, resulting in stress and costly errors and inefficiencies. MIS/IT can address information overload by offering various data compression procedures, identifying critical features, providing automatic reminders and warnings, and so on, that reduce stress and errors.

One approach to reducing administrative staff overload is to provide highly compressed management reports that summarize the most crucial prison data for each job category (e.g., averages, group trends for major prison policy and achievement goals). The disadvantage of information loss in global aggregated reports can be balanced by the application of new statistical technologies that "drill down" into the data to explore particular managerial or policy hunches or queries. Data compression and exploration procedures can be easily accomplished by current statistical procedures on virtually any prison database. A first step in moving beyond global averages is to allow simple cross-tabulations of data (e.g., custody by race or gender). Most current statistical packages in an OLAP environment allow multidimensional cross-tabulations to facilitate the exploration (or drilling down) of successive queries. Appropriate software and reporting procedures can facilitate sequential queries and analyses of complex data collected by a classification unit and thereby enhance administrative policy decisions.

Conclusion

This chapter has indicated, in general terms, the ways that MIS/IT system developments can enhance productivity of prison classification. Classification productivity can be separated into two broad dimensions: effectiveness and efficiency. MISs/IT systems use several strategies (e.g., data retrieval, data analysis, search processes, communication/coordination with other units) to improve both dimensions of classification tasks. With the rapid increase in computing capacity, MISs/IT systems are becoming more vital in supporting both dimensions and in incorporating innovative classification methods. Some of the innovations introduced by the prison systems identified in this study (e.g., New Jersey's internal classification system, South Carolina's population forecasting simulation procedures) are not possible without the computational capacities of their MISs/IT systems.

Given the present state of development of prison classification systems, however, the power of MISs/IT systems is largely underutilized. Classification procedures in many prison systems too often represent the automation of simple systems originally designed for manual operations. These classification systems make little use of the vast data storage and analytical capacity of current MISs/IT systems.

New computer-based analytical procedures for classification continue to emerge. Advanced techniques are available for both creating classifications and supporting human decisionmaking (e.g., artificial intelligence algorithms, inductive decision trees, fuzzy clustering, pattern recognition). A category of error-analysis methods has been developed for evaluating and monitoring the quality of classification decisions (signal-detection methods, judgment analysis, etc.). Powerful data integration procedures are now available so that criminal justice databases can become truly comprehensive and support more detailed policy-level decisionmaking (OLAP, data mining, dynamic systems modeling and forecasting, etc.). Examples of some of these techniques are evident in the prisons visited in this study (e.g., South Carolina's shift from the "Old World" to the "New World" of computing architectures; IT plans of several of the prison systems in this study that involved OLAP, data warehousing concepts, and advanced statistical procedures).

CHAPTER three

Offender Classification Roles and Data Requirements

Introduction

Identifying the precise data requirements of classification operations is important when exploring how current computing technology can enhance classification procedures. Offender classification systems have varying and demanding data requirements. This chapter clarifies the multiple roles of classification and the specific kinds of information and data needed for each of those roles.

Every classification decision is driven by data and thus relies on an information support system. For the past two decades, correctional agencies have shifted away from the subjective judgments of correctional officers and toward data-driven objective classifications. The deficiencies of older information systems may be quite serious and, at worst, may undermine classification effectiveness, or validity. Upgrading the classification process imposes data requirements on the information system. Finding an adequate interface between classification and the information system is a key challenge for most prisons.

Trends

Two broad trends have increased the information demands that classification imposes on prison MISs/databases. A clear understanding of these trends is requisite to planning MIS enhancements.

Evolution Toward Greater Complexity

The policy orientation of prison classification systems and the associated technical design are changing rapidly. Nationwide, prisons, jails, and other correctional institutions are being forced—through litigation, new research, fiscal concerns, and overcrowding—to upgrade the validity, reliability, objectivity, and overall quality of their classification decisions. Innovations include designing internal classification systems for internal management of offenders, developing risk and needs classification instruments that are valid for female offenders, and incorporating more treatment and rehabilitative factors into treatment classifications. This evolution of classification methods toward greater complexity inevitably increases the demand for a broader range of criminogenic risk factors and a more intensive information processing capacity (Brennan, 1999; Clements, 1996; Jones, 1995).

In addition, litigation, which often focuses on technical criteria, is raising the bar for technical standards for classification. These include more objective and standardized data, verification procedures, risk factors with demonstrated validity, and higher psychometric reliabilities (Brennan, 1987a; Tonry, 1987). This trend toward technically defensible criteria increases the information processing burdens on classification procedures and prison staff.

Although some prison classification systems are highly innovative, most current approaches remain extremely oversimplified (Austin, 1983; Brennan, 1993; MacKenzie, 1988). The most widely used security- and risk-based classifications use simple logically or statistically designed point scales and a small set of behavioral and legal risk factors such as criminal history, disciplinary and escape history, seriousness of current offense, substance abuse, and some social stability factors (Austin, 1983; Clear, 1988; Wright, Clear, and Dickson, 1984). Historically, these systems worked in a manual format because they had minimal computational requirements. They were efficient and able to cope with busy and overcrowded correctional settings and were an improvement when they were introduced.

Although many respondents discussed clear differences between men and women offenders in terms of their needs and risks to institutional and public safety, very few states had incorporated these differences into their objective prison classification systems.

Simple additive points-based classification procedures, however, have been increasingly challenged on practical, financial, scientific, and ethical grounds. The weaknesses of these custody and security classification procedures include low predictive validity, low psychometric reliability, poor content validity, and limited ability to provide staff with useful guidance on managing offenders (Brennan, 1993; Clear, 1988; MacKenzie, 1988). During the 1980s, several more comprehensive multifactor and behavioral systems were offered but were used only sporadically (Andrews and Bonta, 1994; Austin, Baird and Neuenfeldt, 1993; Megargee and Bohn, 1979). Many newer systems provide richer coverage of criminogenic factors but have failed the tests of practicality and efficiency. The result has been implementation challenges in overworked correctional institutions. Complex systems such as Hare's Psychopathy Checklist (PCL) or Quinsey's Violence Risk Appraisal Guide (VRAG), for example, place high demands on staff time and skills and, in the context of overcrowded prisons, increase the difficulty of successful implementation and staff acceptance. Despite these difficulties, the general trend is toward increased comprehensiveness and complexity of classification methods.

Shift Toward Comprehensive Multiple-Purpose Classification

The broadening of the purposes and policies that offender classifications must support has caused an escalation in data needs. MacKenzie (1988) described this trend as a paradigm shift in prison classification. This broadening of purposes has increased the range of data required, and many MISs/database systems have simply not kept pace with information demands. Perhaps the most critical deficiency is the weak coverage of key risk factors and treatment-relevant variables, which can produce inadequate content validity. The purposes of offender classification comprise a complex mix of practical, scientific, and legal goals:

- To provide the basis for communication and stable nomenclature.
- To support inmate and staff safety.
- To support discipline and order through appropriate separations.
- To support fairness and equity through valid and consistent classification.
- To support the right to appropriate housing.
- To support treatment, rehabilitation, and community reentry.
- To support resource planning and allocation.

Comprehensive classification now includes more goals than were once defined by either line staff or management (Alexander, 1986; Brennan, 1987b; Fowler and Rans, 1982; Solomon and Baird, 1981). Traditionally, a single "one-size-fits-all" offender classification was expected to fulfill all organizational purposes and goals. The fallacy of this approach has been recognized not only in corrections but in most people-processing institutions (Lipsky, 1980; Prottas, 1979). Many prisons now use separate classification procedures for initial intake, internal custody and security, reclassification, case management and treatment planning, and community reentry, a reflection of the recent trend toward complexity and comprehensiveness.

The emergence of internal classification in prisons is an interesting aspect of the trend toward multiple classification purposes (MacKenzie, 1988; NIC, 2001). Internal classification systems guide internal management, housing, work assignment, and programming of inmates by emphasizing interpersonal behavioral patterns and needs profiles (Austin, Baird, and Neuenfeldt, 1993). Internal classification systems do not replace risk-based predictive systems but may be used in a complementary manner for various management purposes. Another issue is whether internal classification systems for women offenders should differ from those for male offenders (Brennan, 1999; Brennan and Austin, 1997).

The data requirements for internal classification are substantially broader than those for traditional security and risk systems. Recent developments in both internal and external classification systems exhibit this broader scope of classification variables (e.g., Client Management Classification [CMC]; see Megargee and Bohn, 1979). Similarly, the Level of Supervision Inventory (LSI), COMPAS, and VRAG all have broad multifactor information coverage to guide classification decisions for multiple correctional purposes.

Changing Roles and Growing Importance of Classification

Understanding the multiple roles of prison classification helps to clarify the information requirements. During the past two decades, objective offender classification has been a primary management, legal, and political issue. Courts, practitioners, and professional associations have recognized the importance of valid and reliable offender classification. Failure to appreciate its many roles may undermine attempts to specify the ranges of data elements needed in an MIS.

Administrative, classification, and MIS/IT staff often fail to appreciate the multiple purposes of classification (Fowler and Rans, 1982; Harris and Smith, 1993). Many are unaware of the links between classification and most major correctional policies and organizational goals. Consequently, classification is often oversimplified, underutilized for certain purposes (planning, monitoring, population control, etc.), and poorly integrated with MIS and other prison operations. Harris and Smith (1993) implied that any failure by correctional management to appreciate the multiple roles of classification results in weak implementation and underutilization characterized by failure to request, collect, or analyze the needed data.

The major practical roles and purposes of classification are described below. Each purpose or policy goal has specific data requirements for initial classification decisionmaking and for outcomes or performance monitoring.

Inmate and Staff Safety

A priority of most correctional facilities is to provide a safe environment for inmates and staff (Alexander, l986). This demands valid identification of violent offenders and custody classes and an effective set of validated risk factors, separation of predators from potential victims, and appropriate supervision. Suicide screening, a subgoal of this general aim, similarly requires data to identify inmates at high risk for suicide and thus to guide the selection of appropriate surveillance and treatment.

Public Safety

Public safety relies on valid classification focused on dangerousness and recidivism risk for security and community reentry decisions. Data elements for recidivism risk factors may be quite different from those for institutional dangerousness. Classification levels must be matched with security constraints, release recommendations, appropriate community constraints, and supervision. Escape-risk data also are required for classification. This goal demands many valid and relevant risk factors from the MIS/database. False-negative errors may produce intense media attention, public anger, and a loss of public confidence. The classification validity and integrity of the risk factor data are critical for this goal.

Rehabilitation and Reintegration

Classification for reintegration into the community requires data on both risk and needs assessment to match inmates to treatment programs and graded access to the community. These classification decisions must balance public safety with the goals of successful rehabilitation and reintegration. Critical purposes include the protection of the prisoner's rights to avoidance of deterioration, access to appropriate programs, detention in the least restrictive environment commensurate with their assessed risk to both the prison community and the community at large, and the lowest level of isolation from the community. These multifaceted goals clearly require a broad set of social and criminogenic risk factors as well as carefully collected treatment needs, social supports, and other relevant criminogenic factors (see Andrews and Bonta, 1994; Van Voorhis, 1994). These complex goals place severe demands on the comprehensiveness of classification factors included in the MIS database. The scientific criteria of critical importance include content validity, construct validity, and coverage of the most valid criminogenic factors.

Equity, Fairness, and Consistency

These important correctional, legal, and ethical goals rely almost completely on two key criteria: the validity and the reliability of classification (Tonry, 1987). Litigation has identified classification as a foundation for consistent and equitable placements for both housing and program access (Gettinger, 1982). Fairness requires (1) that errors, bias, and prejudice be minimized; (2) that careful constraints guide subjective discretion; and (3) that the classification have demonstrated validity. Equity and fairness are the basis for parity concerns pertaining to female inmates (Brennan, 1999; Zaplin, 1998). Invalid classification and poor data invariably undermine consistency, fairness, and equity.

Protection of the Right to Appropriate Treatment

Classification is the primary process that identifies the treatment needs of prisoners for housing level; work assignments; vocational, educational, and mental health; and medical and other program needs. A range of data elements is required for making these classification decisions and monitoring program delivery. Classification assessments are a key step in protecting detainees from "deliberate indifference" and ensuring their right to adequate treatment. The courts have identified classification as a basis for the right to protection from violent assault and the fear of violence (Tonry, 1987). Classification must achieve valid separations of risk levels to support sensible housing assignments.

Efficiency and Rationality in Resource Use

Classification is a key management tool for administrators and planners in achieving fiscal efficiency and avoiding a waste of prison resources. The courts identified classification as "a prerequisite for the rational allocation of whatever program

opportunities exist within the institution" (Gettinger, 1982). Classification supports rational resource allocation, governs staff assignments, and plays an increasingly visible role in the architectural planning of new facilities. An MIS/database must provide key data on offender needs, security, and surveillance to match bed availability and treatment allocations. The MIS must have sufficient statistical capacity to provide detailed classification and needs breakdowns for planning and projection purposes. Classification errors can waste resources, reduce efficiency, and degrade plans that are based on these data. One NIC (1984) report indicated:

> The increasing demand for both security and program resources, coupled with the probability that the availability of both will decrease, calls for an especially efficient and effective classification decision that will make the most advantageous use of physical, financial, and human resources. (p. 9)

Each correctional institution must have an MIS to support its ability to monitor whether inmates are appropriately matched to needed services or whether key resources are squandered by wasteful overclassification in which inmates are held at needlessly high levels of security relative to their risks.

Management Planning

Classification provides many of the data required for the statistical bases for plans, budgets, staff requirements, programs resources, and physical space requirements (Brennan and Wells, 1992; Fowler and Rans, l982; MacKenzie, 1988). The capabilities of the MIS/IT system enhance staff's ability to provide statistical breakdowns, trends, and projections for the inmate population across subgroups and time. Classification data also support simulation studies, projections of various subpopulations, and differentiated levels of need for various resources and services. The basis for virtually all statistical tables and planning projects is a set of classification procedures (Bowker and Star, 1999). As classification data become more comprehensive and complex, they force the information system (IS) to upgrade its analytic capacities. In the next few years, corrections is likely to witness the mutual evolution of both classification methods and the analytical capacity of an IS to make better use of these large comprehensive databases.

Orderly and Routine Processing

Because of resource limitations, prisons and jails, like all people-processing bureaucracies, cannot plan for, respond to, or cope with individual cases (Prottas, 1979). All of these institutions are designed to deal with "classes" of clients. This is as true of hospitals as of prisons (Bowker and Star, 1999; Lipsky, 1980). Classification is an organizing process that simplifies and organizes the diversity of offenders entering a prison. Until detainees are classified, a bureaucracy cannot deal with them (Lipsky, 1980; Prottas, 1979). Institutional responses are designed to deal with categories of clients/inmates according to an institution's procedures. Classification

and reclassification support institutional order by providing a consistent, objective, and rational basis to guide inmate movement, rehousing, treatments, and programs.

Social Control and Discipline

Social control and discipline are critical correctional goals. Classification contributes to stability and order through inmate identification and separation and the establishment of appropriate surveillance levels. It helps control inmate behavior by governing access to rewards and punishments (e.g., misbehavior is punished by reclassifying to a less privileged level; good behavior is rewarded by reclassifying to a more privileged level). Classification thus influences inmate behavior (Prottas, 1979) and conveys and enforces behavioral expectations. Information requirements for this purpose are quite extensive; all prisons maintain disciplinary records on detainees. These data are an intrinsic component of the information infrastructure.

Monitoring Prison Goal Achievement, Results, and Accountability

Classification data contribute greatly to monitoring the accomplishment of correctional policy goals. The MIS/database is of profound importance in this role. Fowler and Rans (1982, p. 23) asserted that classification is the "ultimate accountability tool" and stated that many classification data can be used to monitor the degree to which most major correctional goals are achieved. Performance monitoring in key areas is intimately linked to the performance of the classification system. Monitoring outcomes and results requires an MIS that allows collection, storage, processing, and retrieval of classification data. The MIS in turn must have sufficient analytical capacity to conduct statistical analyses and generate reports and graphs to communicate these data. Data elements that reflect various correctional policy goals (e.g., inmate safety, grievances, access to programs, efficiency/waste, least restrictive custody, public safety) are routinely collected and added to the prison database. For example, the goal to impose the least restrictive custody is measured partially by overclassification error rates and by the percentage of inmates housed in security levels higher than needed (Austin, 1983). A goal of most MISs and automated classification systems is to produce statistics that reflect the degree to which these policy goals are being met.

Liability Protection

A good classification system is a powerful means of avoiding public embarrassment, maintaining good public relations, and avoiding damaging litigation (NIC, 1985). A classification error (e.g., a false-negative classification) that leads to a violent incident may devastate the public image of a facility. Valid classification, accurate and verified data, and adequate training and supervision are the main defenses against these errors. Objective classification systems also provide justification and documentation for processing and placement decisions. These are basic requisites in legal disputes. Objective data elements and computed fields collected by classification and stored in the MIS/database are critical in protecting the institution against litigation.

Conclusion

Periodic or continuous collection of critical data contributes to the monitoring and assessment of a prison's performance. Prison MISs/databases must provide sufficient data coverage of key results variables to support these functions and the analytical procedures to produce useful management reports. Each major prison goal (e.g., public or prisoner safety, equity, discipline) is linked to classification processes that require the measurement of specific data elements for each unit of time. In this way, management reports can be produced to support planning, results monitoring, and policy analysis. Managers must fully understand classification functions to ensure that the MIS is not underutilized or only partially implemented.

CHAPTER four

Automated Prison Classification System Features and Functions

Introduction

To automate prison classification effectively, technical and administrative staff must understand the major goals of classification and build them into the functionality of the software. This chapter examines critical features and functions of automated classification that should be included in the MIS. The ultimate purpose for designing the software is to promote efficiency and accountability in support of the day-to-day classification tasks of both line and management staff. To illustrate the diversity of approaches to and MIS support for classification, this chapter also reviews selected software design features that had been implemented in the various prison systems visited for this study.

The main features and functions of an effective classification MIS include the following:

- *Attention to all stages of the classification procedure:* The automation of classification functions should facilitate all of the basic processes that must be accomplished in any prison classification. This includes, for example, identifying all inmates due for review at each of the successive stages of classification, identifying inmates who are overdue for classification, printing inmate classification notices, and generating hard copies of all classification actions. All decisions resulting from classification and related inmate-processing decisions, on both an inmate-specific and aggregate basis, must be well documented.

- *Efficient access, retrieval, and organization of data:* Classification procedures use a large amount of high-quality, verified data that must be accessed in a timely fashion, easily stored, and retrieved as needed. This includes data on previous incarcerations, current offense and legal status, prior criminal and disciplinary history, sentencing, medical/mental health, and special needs. Automation facilitates timely retrieval of data in a well-organized, easily accessible format.

- *Management of housing assignments and inmate movement:* Automation should assist the classification/housing officer in maintaining a dynamically updated inventory of available facilities and beds to house and transfer classified inmates between locations in a manner consistent with the prison's policies. The system

The ability to interface with other criminal justice MISs is becoming increasingly important for cross-verification, efficiency, and comprehensiveness of coverage of classification data.

should track and document all inmates who are not housed at the appropriate level (which may occur periodically for reasons such as overcrowding). In these and similar instances, the system must provide timely and proper notification, monitoring, and alerts to make appropriate housing adjustments as beds become available.

- *Statistical management reports for monitoring operations and quality control:* A well-designed automated classification system should provide various "canned" and ad hoc reports as well as statistical capabilities and report-generation procedures to address operations monitoring and quality control. These include indexes such as aggregate security and custody-level profiles, classification staff workload, override rates and reasons, mishoused-inmate summaries, and late-classification summaries.

Critical Design Components of Automated Classification Systems

A well-developed classification (or other) MIS should adequately address the following four critical design components. The degree to which the software addresses these components will directly affect its use and acceptance by staff.

1. *Information content:* This refers to the range and kind of information collected and stored in the MIS to support classification and related inmate and agency management decisions. The information needs of the classification instruments and inmate, facility, and management decisions must be incorporated fully into successive stages of MIS design. The MIS should include a "data dictionary" to define precisely all classification-related data elements.

2. *Functionality:* Functionality refers to the way the MIS collects, stores, retrieves, organizes, and presents data. Effective automation starts with an MIS design that promotes timely and efficient user management of data. For example, most security and custody classification instruments include data elements from the inmate's disciplinary history. A well-designed classification MIS must collect and store this information so that when an inmate's disciplinary history becomes relevant to a decision, the software automatically organizes and presents this information by date and severity to assist in determining current/past institutional adjustments.

3. *User interface:* The user interface governs the interaction between the user and the software. The user must navigate multiple menus, screens, and other functions of an MIS. The user interface must be easy to navigate, understand, and learn. Its design must often distinguish between different classes of users and the different types of data they enter. It should record the time of each data input and use intuitive codes or definitions (preferably online) for all coded fields at the specific data input field. Automated edits can help prevent missing data and minimize inconsistency and data entry errors. Movement (navigation) between

screens and between databases must be logically consistent with the workflow. Information flow within and between screens must be logical (see chapter 5).

4. *Outputs and reports:* Outputs and management reports are produced from the information stored in the system. Carefully designed outputs should provide users with information to support classification processes and decisions. Outputs include various lists and data summaries produced while the user is interacting with the system in day-to-day operations and statistical and management reports that are produced from aggregated data for a given time period (e.g., weekly, monthly). For example, in the first category, reclassifications should trigger the electronic (screen) or hardcopy printout of a list of inmates due for review. The presentation formats (screen or hard copy) of rosters and summaries must support multiple stakeholders. Examples of reports include periodic housing discrepancy reports and statistical breakdowns of classification levels for selected subpopulations. A well-designed classification MIS must provide comprehensive statistical and monitoring reports to meet the needs of line staff, administrators, supervisors, planners, and policymakers.

General Classification Process Overview

This section provides a brief outline of the system workflow that typically characterizes prison classification systems. Reviews of seven state prison classification systems inform this general overview of sequencing, classification, and inmate-processing functions.

At the most general level, *initial classification* determines the level of security and the kind of facility required for a new inmate, which triggers facility assignment and transfer. *Custody classification* occurs at the new facility; this process determines the level of supervision required. Custody classification shifts the focus to internal processing decisions such as housing and program assignments. Similarly, program needs guide program and work assignments. More detailed internal classification systems implemented recently incorporate deeper concerns regarding interpersonal relations, skills and needs, and program and treatment placements (NIC, 2001).[2] Exhibit 4–1 illustrates the general sequence of steps in classification, which can serve as a roadmap for MIS design.

System Information Content

The MIS must provide comprehensive, accurate, reliable, timely, and user-friendly information to support classification decisions in the workflow described above. The three components of MIS content are as follows:

Exhibit 4–1. General Classification Flow

Classification Flow	Data Decision Supports	Classification Decision
Intake screening		
Positive identification	Automated fingerprint, photo match; check commitment/legal papers, court sentence, court return	Accept or deny into state system
Medical/mental, custody screening	Obvious medical and mental health emergency needs	Special management vs. routine processing
Booking	Inmate demographic, background screening data; identify keep-separates, detainers, and warrants	
Time computations	Sentence types, dates, sentence lengths, concurrent vs. consecutive, statutory minimums/maximums, time credits	Determine legal dates (e.g., minimum and maximum outdates)
Initial security classification	Seriousness of current offense, criminal history, escape history, sentence length, prior prison history, holds, special monitoring	Facility classification assignment
Medical	Previous and current medical history, physical exam	Medical classification
Mental health	Previous and current mental health history, previous suicide risk, interview, instruments (e.g., Millon Clinical Multiaxial Inventory)	Mental health classification
Program needs/special needs	Previous and current assessed needs and treatment history, presentence investigation information, criminal history (e.g., domestic abuse, drug/alcohol offenses), criminal thinking	Program needs identification
Transfer assignment	Match classification to facility or facilities; keep-separate segregation, medical/mental health, program services, available beds/ bus seats	Facility assignment, schedule transfer
Internal classification	Custody: current offense seriousness, disciplinary history, gang status, age, substance abuse, previous incident history, predatory personality type	Internal risk classification
Housing assignment	Match demographics and special management issues for cell assignment	Cell assignment
Program/work assignment	Match assessed needs to openings, enrollments, outcomes	Program/work assignments

Exhibit 4–1. General Classification Flow (continued)

Classification Flow	Data Decision Supports	Classification Decision
Reclassification (external and internal)	Mitigating or aggravating circumstances including new disciplinaries, change in legal status, change in balance of sentence, new needs identification, program participation/ completion, other new information; match new classification to new housing assignment	New classification and facility/ housing assignment
Community/prerelease risk assessment	Criminal history, escape history, probation/ parole violation history, substance abuse severity, employment/education history, social stability, criminal cognitions, balance of sentence remaining	Temporary release; early release or parole recommendation
Release	Sentence calculation, release-date review, detainers, victim notification/registration information (e.g., sex offender registration), financial obligations	Final inmate release, victim notifications, and offender registrations

1. *Manageable, complete data:* All data fields must be easily entered and clearly labeled and must contain data needed at each phase and ancillary phase of classification and related inmate management decisions.

2. *Data dictionary:* There must be a data dictionary that defines all fields. Definitions must be operational and unambiguous, identifying the source of the information, whether it is verified, how, and by whom. For example, the definition of the inmate name field should reflect that there may be one name on the arrest; another on the commitment paper; and others on other arrest, conviction, and personal documents. At admission, an inmate may give another name by which he or she wishes to be known and may request and be granted a legal name change. The data dictionary must provide clear rules for determining which name to enter. Exhibit 4–2 is an example of a data dictionary entry.

3. *Data entry procedures:* Procedures must identify and document who is responsible for entering data and when the data are to be entered.

Exhibit 4–2. Data Dictionary Entry for Data Entry Element "Religion"

ELEMENT:	Religion
DATA TYPE:	Alpha numeric
DEFINITION:	Inmate's religion
TABLE/CODE:	See below
SOURCE:	Initial entry - inmate Update - Office of Ministerial Services request
STANDARD OF VERIFICATION:	None
COMMENTS:	Religion may change per request of Ministerial Services
UPDATE SCHEDULE:	As indicated by Ministerial Services

RELIGION TABLE

00	Not Specified
02	Adventist
04	Agnostic
06	Native American
12	Assemblies of God

Intake

The intake process has several tasks and processes, each with its own unique information requirements, as described below.

Positive identification. Intake must identify the inmate and match his or her identity to a court document sentencing the inmate to the prison system. Until recently, this process was entirely manual. Typically, an inmate was brought to a prison with a fingerprint card and a court commitment paper; staff members matched the identity on the fingerprint card to the court paper and fingerprinted the inmate for matching to the county's fingerprint card. Recent advances in technology, beginning to be more widely introduced, are automating this process in two ways. First, advances in biometric technology (methods of identifying a person based on various physical, physiological, or other characteristics) have made rapid automated identification (e.g., through fingerprints) possible. Second, automated information links between criminal justice agencies enable the electronic transfer of court and identification information.

Assigning system identification. Intake must assign a unique identifier to each inmate, which requires a search in the current and the historical MIS for the master *person ID*. The MIS should have one unique person identifier for each offender/inmate. This master identifier should encompass all criminal contacts with institutional and community DOCs (e.g., probation). For subsequent contacts with the system, a new *case ID* (record) can be added to the master person ID such that unlimited case IDs can link to one master person ID. This allows comprehensive history and support data to follow the inmate through each incarceration.

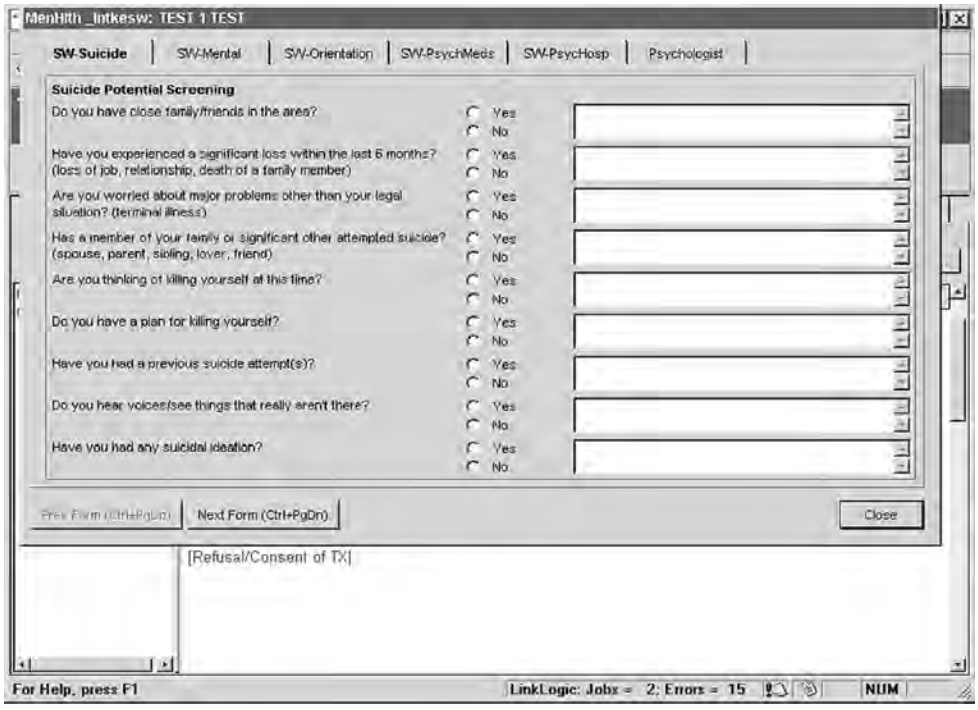
Medical/mental custody screening. Medical and mental health staff screen each inmate for immediate problems and special needs. Custody staff also screen inmates for immediate management problems (e.g., need for protective custody). Available information sources may include relevant jail and prior prison records, direct observations, and interviews. Exhibit 4–3 provides an example of a health screening. Information collected may include the following:

- Suicide risk inventory, including prior suicide risk history.
- Initial contagious disease inventory.
- Obvious medical alert signs (e.g., bleeding, jaundice).

Booking. A comprehensive MIS contains two types of data at intake: permanent and baseline. Permanent information (such as birth date or instant offense [i.e., the offense for which the prisoner is currently incarcerated]) will change only if an error or an unusual event (such as resentencing) occurs. Baseline information (e.g., highest level of education) is changeable as the inmate proceeds through the prison term. The history of each type of information is kept and displayed separately. As a rule, fairly simple data are collected at booking, and more complex social and psychological information that may require more complex assessment is collected by classification staff or psychologists. Data elements added to the MIS at this stage include the following:

- Instant offense(s).
- Admission type (e.g., new commitment, parole revocation, escape return).
- Aliases.
- Accomplices/codefendants/known enemies.

Exhibit 4–3. Suicide Prevention Screen (New Jersey DOC)



- Warrants, detainers, outstanding charges, and upcoming court dates (exhibit 4–4).
- Citizenship status.
- Demographics (e.g., age, race, sex, place of birth, religion) (exhibit 4–5).
- Social data (e.g., education, employment, military service, family members, residence).
- Physical data (e.g., height, weight).
- Gang affiliations or threat groups.
- Initial medical/mental health.
- Special needs (e.g., developmental disabilities, physical disabilities).
- Language competency.
- Emergency contact.
- Personal information for mail, visitation, and telephone.
- Smoker/nonsmoker.
- Prior county jail incarceration information (i.e., classification, disciplinary adjustment. mental health and medical problems).
- Intake officer's name and date and time of intake.

Time computations. Time computations are complex functions, sometimes performed by the classification unit, that require automation to minimize errors and generate projections. These determine release dates and are critical for program eligibility. The information must be reviewed and analyzed to determine minimum and maximum outdates. MIS data collected for this task must include the following:

- Sentence dates, lengths, and types.
- Concurrent versus consecutive sentences.
- Statutory minimums/maximums.
- Time credits.

Exhibit 4–4. Detainer and Warrant History Screen (Washington DOC)

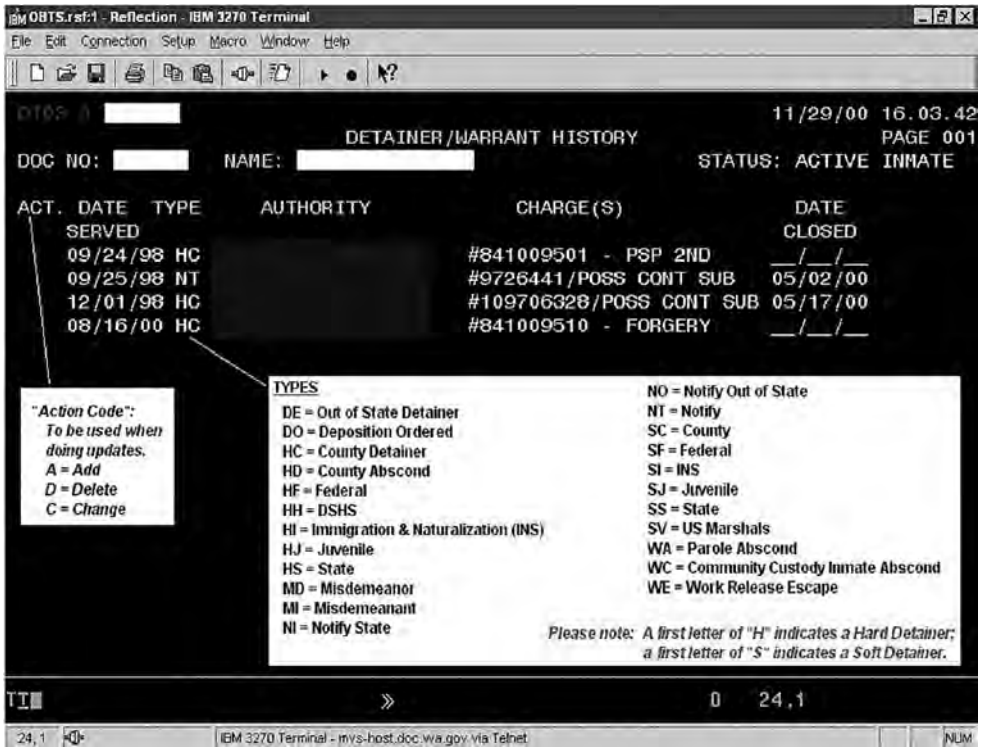
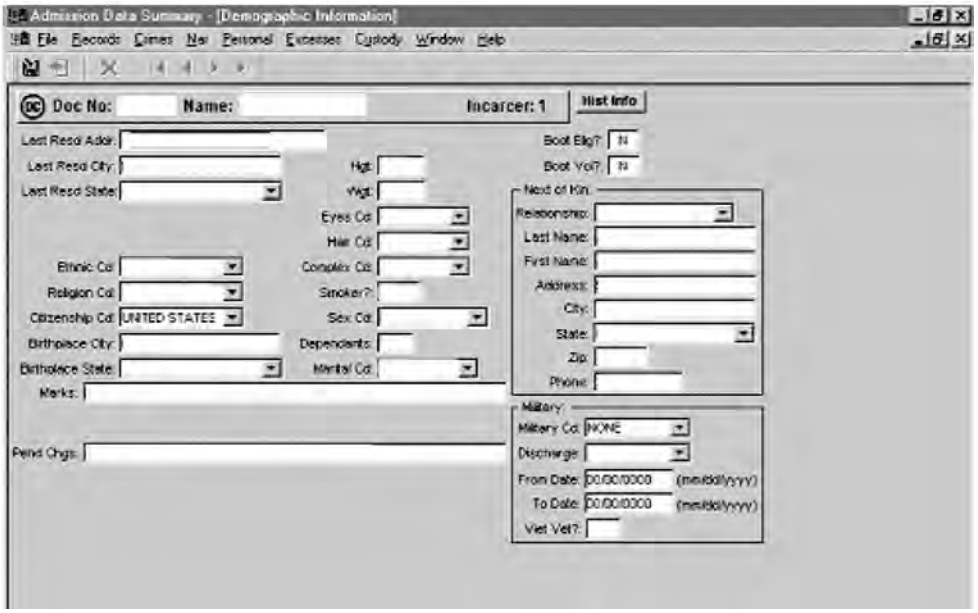


Exhibit 4–5. Demographic Information Intake Screen (Colorado DOC)



Court commitment information is entered along with jail and other credit days. Specific offense information is entered identifying consecutive (CS), concurrent (CC), and sentence-now-serving (SNS) status (exhibits 4–6 and 4–7).

Initial Security Classification

After initial intake information has been collected, the security classification process typically begins. Much of the information for classification should have been collected and ready for use. Additional information to be collected to assist in determining the inmate's external classification includes the following:

- Seriousness of current offense.
- Criminal history (arrests, indictments, dispositions, sentences, time served).
- Parole revocation details.
- Escape history.
- Notoriety/social standing and gang affiliations.

Additional processing information entered at this time includes classification officer name, date of classification, and classification officer comments.

Exhibit 4–6. Commitment Order Screen (New Jersey DOC)

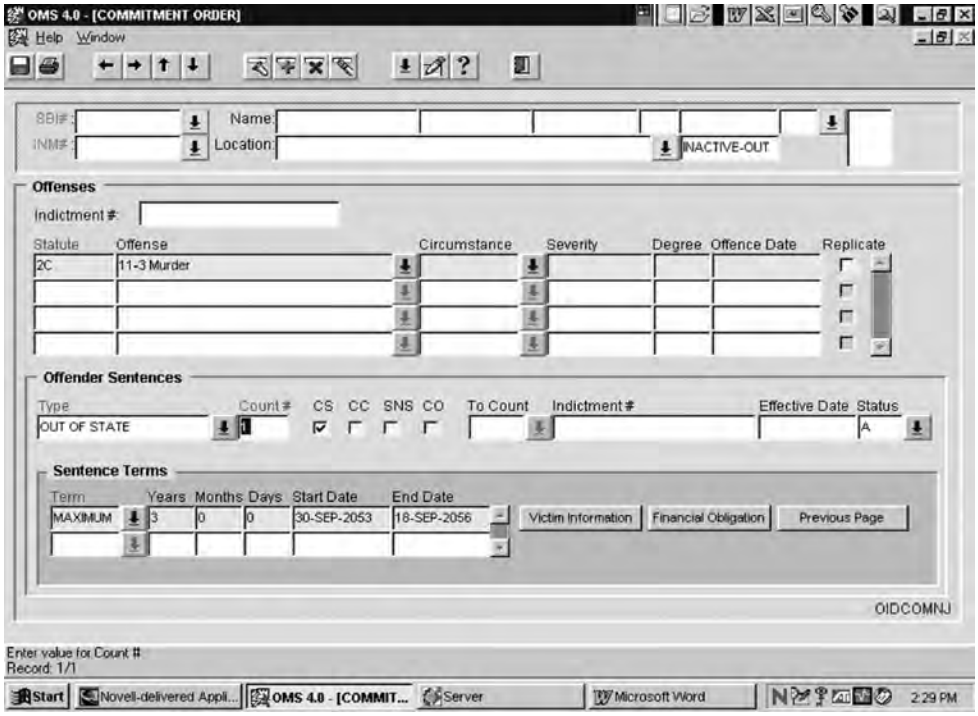
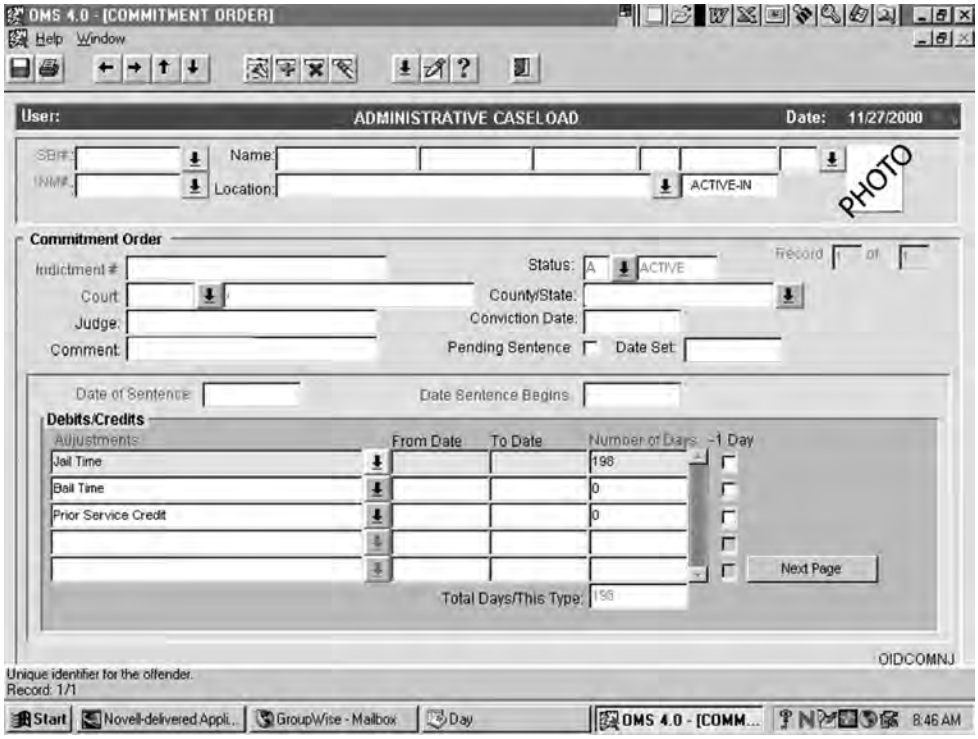


Exhibit 4–7. Commitment Order Administrative Caseload Screen (New Jersey DOC)



The final security classification determination, typically made by a supervisor or committee, considers all relevant information to confirm or override the recommended classification assignment. Although the above information provisions are routinely supported by the MIS, additional data entry tasks include the following:

- Aggravating/mitigating circumstances of the case.
- Final classification designation.
- Override designation and reason (if applicable).
- Supervisor/committee name or identifier.
- Final classification.
- Classification decision review date.
- Comments.

Exhibit 4–8. Custody Classification Screen (Florida DOC)

```
11/06/2000 15:23:44
                CUSTODY CLASSIFICATION          PAGE: 001
DOC NO:          NAME:                                  STATUS: ACTIVE
PROCESSING STATUS: 67  CUR LOC:                         TRD:
CLASSIFICATION DATE: 10/21/2000 TYPE: R = RECLASS  TEAM:      LOCATION:
SECTION I: STATUS CUSTODY
 1. MAXIMUM STATUS: DEATH: N
 2. CLS STATUS: HR: N  SO A: N  VF DET: N P VF DET: N INS/MAR: N
       LEV 3,2 ESC.: N ESC RISK: N IM4 OR 5: N
 3. MED STATUS:F DET: N P F DET: N L 1 ESC: N ESC A,B: N SO B: N TRD 10-15: N
SECTION II: CUSTODY SCORE
 4. SEVERITY OF OFFENSE LEVEL: CURRENT: 2 OTHER: 0            010
 5. PFACT: D.   E.   F.   G.   H.   I.   J.   K.   L.   000
  INTERNAL MANAGEMENT LEVEL: 01 CRF ELIGIBLE: N      TOTAL SCORE: +010
  PRIOR CUSTODY: 4 = CLOSE   - 06/08/2000 SUGG. CUSTODY: 2 = MINIMUM
  TEAM EXCEPTIONS: 40 = CLOSE TO MIN.JU  RSN MIN CUSTODY 15 MTH NOADV RLD
  MODIFIED CUSTODY: 3 = MEDIUM       CONTINUE UNTIL DATE: 01/19/2001
  CLO:                                    10/17/2000      COM:  (PF4)
  SUPV. A/M A 40 CLOSE TO MIN. ID:                       COM:  (PF5)
  ICT. A/M A 40 CLOSE TO MIN. ID:                          COM:  (PF6)
  SCO. A/M A 40 CLOSE TO MIN. ID:                        COM:  (PF7)
     DISPLAY COMPLETE
```

The classification officer completes a custody classification screen, as shown in the Florida MIS example above (exhibit 4–8). The screen includes nine fields in which a classification officer can enter information and four fields for the classification supervisor and classification team to complete. Other fields are entered and scored automatically by the system. Using new commitment and historical inmate data and an embedded classification algorithm, the system automatically suggests a custody level. The classification officer, supervisor, or classification team can then accept or modify the suggested custody level based on aggravating or mitigating circumstances.

At this stage, the classification process also requires several specific assessments, as described below.

Medical classification. The medical staff conducts a comprehensive medical inventory, much of which is confidential and does not involve classification staff. Summary information assists in classification assignment and management decisions. Data include the following:

Required

- Medical classification level.
- Date of classification.

Optional

- Summary medical needs.
- Severity of medical needs.
- Special diet and medication needs.

- Medical alerts.
- Medical screener's name.

Mental health classification. As in the medical assessment, mental health professionals conduct a mental/psychological inventory. Again, much of this is confidential and does not involve classification staff. Summary information, however, is required to assist in classification assignment. Classification MIS information includes the following:

Required

- Mental health classification.
- Date of classification.

Optional

- Summary of mental health needs.
- General severity of mental health.
- Medications.
- Mental health alerts.
- Clinician's name.

Assessment/classification of program needs/special needs. A needs assessment is conducted to help match the inmate's needs to available programming. A well-designed classification MIS will include a structured needs-assessment inventory in the MIS software (exhibit 4–9). These screens guide the counselor through the assessment/interviewing and data-recording processes. Needs-assessment data coverage should include, at a minimum, the following:

- Academic education: highest grade attended, test scores, literacy.
- Vocational: work history, vocational skills.
- Substance abuse: drugs used, frequency/severity/duration of use, treatment history (corrections and community), screening test result, prior substance abuse-related criminal history (e.g., drunk driving, drug possession).
- Treatment and program histories: domestic violence, sex offenses, criminal cognitions, life skills (internal and community).
- Presentence investigation and court-ordered treatment recommendations.
- Level of each program/treatment need and classification date.

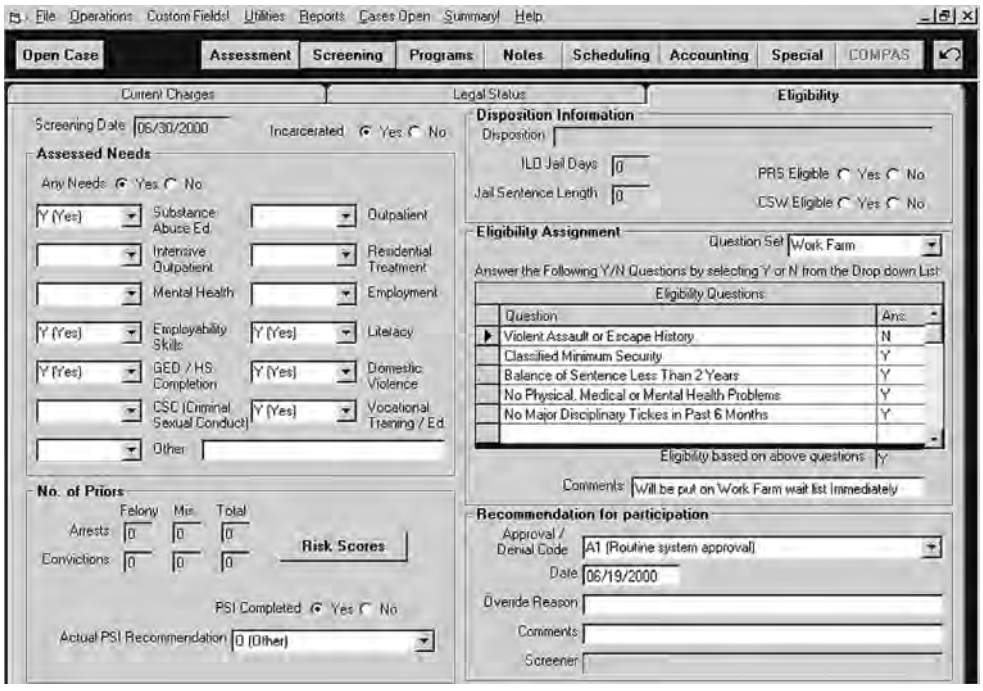
Exhibit 4–9. Substance Abuse Assessment/Treatment Priority Screen (Florida DOC)

```
Computer Assisted Reception Process
          SUBSTANCE ABUSE PRIORITY    11/03/2000 13:38
 DC#:          Name:                                CARP Levl: 06
 R/S:     DOB:            Rcvd: 11/02/2000 Grp:   Tm:              Screening
Date: 11/02/2000 Scored By:

I.  Program Referral                                A. DSSI 3+:   I B. Current Off
A:   N C. Current Off B:   Y   D. PriorOff A/B 1/3+:N E. Term FDC Res Pgm:
N F. Sent Auth Rec:   N   G. Drug Court Case: N H. Volunteer/Refer:  N

II. Program Priority                                A. DSSI Score:       01   B.
Sentencing Auth Rec: 0          C. Drug Court/Division Case: 0   D.
Volunteer/Referral: 0         E. Current Offense(s)   1. Pre-cursor A: 0   2.
Pre-cursor B: 1    F. Prior Offense(s)    1. Pre-cursor A: 0  2. Pre-cursor B: 0
G. Previous Substance Abuse History (OBIS and Self-report)
  1. Outpat: 0  2. Detox: 0   3. Resid: 0   4. Pos Urine Rslt: 4    H. Counselor
        Assessment +/-: 002
 III. Total Score:        00005       Comments:  YES
```

- Program/treatment referral recommendations.
- Assessor's name, date and time of the assessment, and assessor's comments.

Exhibit 4–10 is an example of a needs-assessment inventory used for statistical and reporting needs. This simple inventory of assessed needs (e.g., anger management, drug/alcohol treatment, cognitive therapy, sex offender treatment) provides a quick baseline that can be used throughout the inmate's incarceration for future reference

Exhibit 4–10. Program Eligibility and Needs Inventory Screen (Northpointe MIS)



and for treatment referral status. The MIS can automatically provide eligibility status for each program or work assignment. A structured eligibility matrix enables objective eligibility recommendations based on department policy, documents the eligibility determination, and provides for overrides with a documented reason.

Transfer Assignment

After the above classification processes are completed, the inmate must be assigned to a specific facility. In some cases, only one facility may be appropriate; at the other extreme, several prisons that offer the same security level may have available bedspace, but they may have different program options. Transfer priority must also be assigned. Priorities and assignments must then be matched with facility and bus/transfer availability. Data inputs must include the following:

- Bed and bus-seat availability.
- Target transfer facility or facilities.
- Transfer request target date(s).
- Priority transfer status.
- Transfer type (e.g., initial classification, reclassification, medical).
- Actual transfer date.
- Transport options (e.g., bus number).
- Destination facility arrival date.

Exhibit 4–11. Sample Bed Identification Screen (New York DOCS)

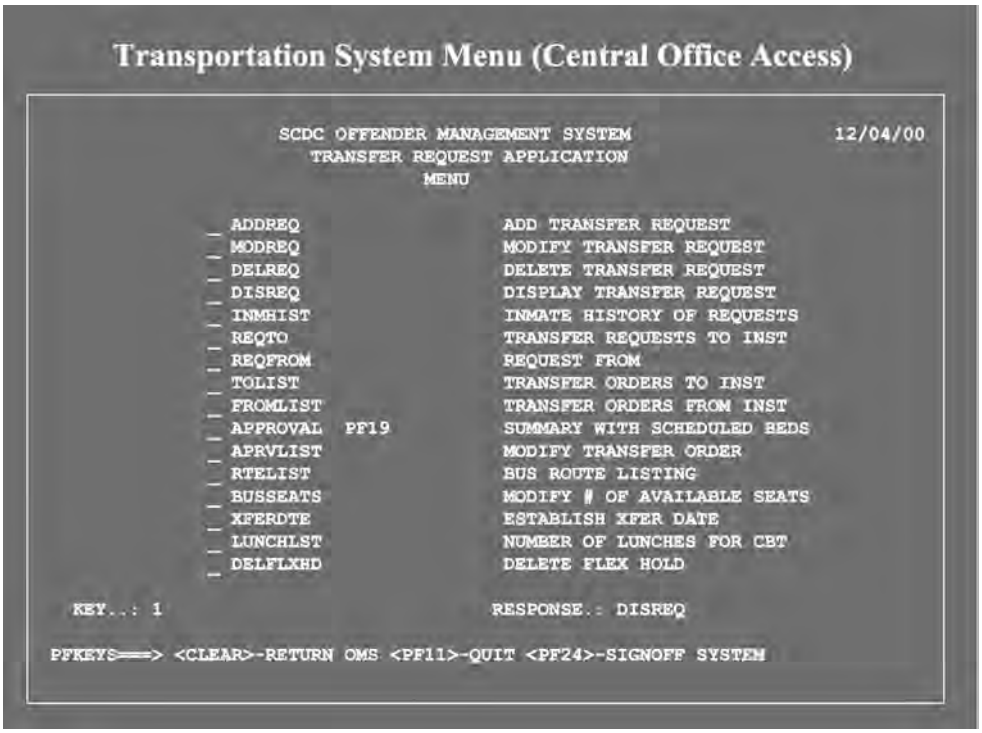
A. **LOCATOR SYSTEM**

CELL INQUIRY SCREEN
AXXXX FACILITY

CELL NUMBER:
CELL STATUS: OCCUPIED
STATUS CHANGE DATE: 12/19/XX
DEPT ID NUMBER: 96AXXXX
INMATE NAME:
CELL BOOK NOTE:
CELL USE: GENERAL CONFINEMENT **CELL TYPE:** PERMANENT
CELL PHYSICAL STRUCTURE: SECURE CELL **CELL SUBDIVISION:** AXXXX

Cell Status Codes	Cell Use Codes
1 = Vacant	1 = General Confinement
2 = Storage	2 = Special Housing
3 = Out of Order	3 = Restricted Use
4 = Shower	4 = Infirmary
5 = Hold-Live for DIN _____	5 = Mental Health Satellite
6 = Emergency Use Only	6 = Holding Cell
Cell Type Codes	Cell Physical Structure Codes
1 = Permanent	1 = Secure Cell
2 = Temporary	2 = Dormitory

Exhibit 4–12. Transportation System Menu Screen (South Carolina DOC)



For a transfer scheduling/assignment system to be fully automated (and for a housing assignment system to work), every prison bed must be documented in the MIS (exhibit 4–11).

The current location of each inmate must be automatically tracked and routinely updated. Tracking an inmate's location can be more complex than tracking the basic bed assignment. For instance, an inmate may be assigned a bed and be temporarily out (e.g., in court). Current technologies have enabled tracking and logging of an inmate's movement throughout the facility. Information processing technologies that facilitate tracking include barcoded ID cards or bracelets that are swiped through monitoring stations as inmates move through the facility.

Exhibit 4–12 illustrates the components of a transfer scheduling system. Exhibit 4–13 shows the "Add a Transfer Request" screen from the South Carolina MIS, which logs transfer requests in the system's transfer queue.

Internal Classification

All prisons must sort inmates according to internal risk to minimize risks of violence and exploitation of weaker by stronger inmates. Decisions involve selecting inmates for work outside the perimeter or in the administration building and for single cells, double cells, and dorms. However, few states have formal, objective internal custody classification systems. It is safe to assume that all states have formal procedures for identifying protective custody cases; a few use psychological or

Exhibit 4–13. Transfer Request Screen (South Carolina DOC)

behavioral instruments (e.g., the Adult Inmate Management System [AIMS]) to identify predatory and vulnerable inmate types.

Because formal custody classification systems are of recent origin (see Hardyman et al., 2002; see also chapter 8), their information requirements are not widely established and there is no clear consensus as to what data elements are required. As in external classification assignments, most of the needed information should have already been collected, stored, and made ready for use by classification staff. At the present state of development of internal classification systems, data elements include the following:

Minimum mandatory data elements

- Gang membership and affiliations.
- Protective custody indicators.
- Medical/mental health alerts.
- Seriousness of current offense.
- Prison institutional behavior and disciplinary history.

Optional additional data elements

- Sentence length.

- Family and community ties.
- Classification officer name, date, and comments.

One example of a formal internal classification system is the Florida Risk and Needs Model (RNM). Low-risk inmates with relatively little time left to serve are in high demand for competing work interests within the prison (e.g., outside work crews, work release, and other programs). RNM attempts objective quantification of custody and of all needs and treatment requirements of the inmate so that classification can authoritatively adjudicate between the competing interests within the prison. The gang module compiles gang data for initial and subsequent security threat group (STG) membership information (exhibit 4–14). Data entry coding categorizes the information (e.g., A = inmate indicated membership, B = inmate allies with a gang, C = enemies of inmate's gang).

Exhibit 4–15, also from the Florida RNM, illustrates how the system compiles and automatically scores outside influences, attitude and motivation, internal management, and restructuring potential (RP). Outside influences are entered using values of A through C or D for each item. The system then enters a corresponding point value (0, 1, 2, or 3) and automatically totals this section.

Exhibit 4–16, from the same RNM, inventories the inmate's attitude and motivation to work and participate in programs. Entries are coded from A (recommended to participate in any programs during incarceration) through D (not recommended to participate in any programs during incarceration). Inmate programs and work assignments (i.e., items 2 and 3 on the screen) are then entered. The classification officer then subjectively rates the inmate's interest and motivation (item 4, based on the interview and personal interaction) as good, fair, or poor. Section IV of this screen requires verification of any violent felony during the current incarceration

Exhibit 4–14. Inmate Risk and Needs Gang Data Screen (Florida DOC)

```
     DCLAE8B  11/06/2000 16:15:20
                    INMATE RISK & NEEDS (GANG DATA)                PAGE 1

 DC#:         NAME:                          EXT.STA: ACTIVE      TRD: 06/13/2001
     CUR.LOC:                  TEAM:     CUSTODY:      WK.ASG:      INT.STA:

I. ASSESSMENT DATE: 04/29/1999     STAFF ID:
   A. INITIAL S.T.G. INFO: Y       B.  SUBSEQUENT S.T.G. INFO:

ACTION SEQ  CATEGORY                        NAME OF GANG OR GROUP
       01   A INMATE INDICATED GANG MEM     FOLK NATION
                PLACE OF AFFILIATION: STREET:
                CITY: LAKELAND              STATE: FL = FLORIDA
                PRISON:

                PLACE OF AFFILIATION: STREET:
                CITY:                       STATE:    =
                PRISON:

                PLACE OF AFFILIATION: STREET:

                PRISON:
STAFF COMMENT(?): Y   (PF11)
```

Exhibit 4–15. Inmate Risk and Needs Screen (Page 1) (Florida MIS)

```
                                                DCLAE8B  11/06/2000 16:20:12
                          INMATE RISK & NEEDS (1/2)                  PAGE 1

  DC#:          NAME:              EXT.STA: ACTIVE      TRD: 06/13/2001
       CUR.LOC:                    TEAM:     CUSTODY:      WK.ASG:     INT.STA:


    ASSESSMENT DATE: 04/29/1999   SCORED BY:

 I.B.1. FAMILY RELATIONSHIPS:    A = POSITIVE INFLU      3 POINTS
     2. CONCERN FOR CHILDREN:    B = N/A                 2 POINTS
     3. INTIMATE RELATIONSHIPS: A = POSITIVE INFLU       3 POINTS
     4. ASSOCIATES/FRIENDS:      C = NEGATIVE INFLU      1 POINTS
     5. ENEMIES:                 B = IS NOT SURE         2 POINTS
     6. ATTORNEY/LEGAL REP:      C = NEGATIVE RELAT      1 POINTS
     7. OTHERS:                  C = NEGATIVE INFLU      1 POINTS

 OI SCORE: 4  =  NEU. TO NEG. INFLU.            TOTAL  13 POINTS
```

and is scored as yes or no. The classification officer enters an overall subjective assessment score (CPO) of the inmate's internal management risk. The system automatically compiles the inmate's RP score based on all information keyed in the risk and needs-assessment screens and adjusted by the inmate's target outdate. The coded RP score (–2 to 5) includes programs recommended and high inmate motivation, programs recommended but poor motivation, and recommended for special education.

In addition to the above general internal classification themes, several more specific decisions must be addressed.

Housing unit/bed assignment. The most basic data to be included in a prison MIS for internal classification are bed types, occupancy status, and location of inmates in the beds. The housing unit, facility, and type of each bed must be uniquely

Exhibit 4–16. Inmate Risk and Needs Screen (Page 2) (Florida DOC)

```
                    DCLAE8B   11/07/2000 15:53:09
                          INMATE RISK & NEEDS (2/2)                  PAGE   1
DC#:          NAME:                    EXT.STA: ACTIVE      TRD: 06/13/2001
     CUR.LOC:                  TEAM:     CUSTODY:      WK.ASG:      INT.STA:
   ASSESSMENT DATE: 09/03/1999   REVIEWED BY:
III. ATTITUDE AND MOTIVATION
     1. INTERESTED IN PARTICIPATING IN:  D = N/A,NO PROGRAM RECOMMENDATIONS
     2. PREFERRED PROGRAMS: 1ST:          =
                            2ND:          =
                            3RD:          =
     3. WORK ASSIGN OR PREFERENCE:  A     = YES,INMATE HAS WORK PREFERENCE
        PREFERRED WORK ASG: 1ST: M05      = CARPENTRY
                            2ND:          =
                            3RD:          =
     4. INTEREST AND MOTIVATION: B        = FAIR
                       AM SCORE: 1        = LOW MOTIVATN FOR PGM
IV.  INTERNAL MANAGEMENT
     1. VIOL. FEL CONV.(IN PRISON): N
     2. CPO ASSESSMENT SCORE: 1           = POTENTIAL VERY LOW R
 V.  RESTRUCTURING POTENTIAL
                     RP SCORE: 2          = LOW-NEU PRIORITY FOR
                                              F1=IRN SCREENS,F2=IM42,F3=IM44
       DISPLAY COMPLETE                       F4=IM02  F6=IM05,
```

identified: major subclassifications are hospital, special housing, segregation, and general confinement. The current status of each bed must also be identified: occupied, vacant, out of order, or reserved. The MIS must have a keep-separate tracking function linked to the housing/cell management module. In a well-designed classification MIS, the internal housing unit/bed assignment should be driven largely by the continually updated data already in the system. Additional data inputs for this phase of classification must include the following:

- Top-bunk medical eligibility.
- Smoker/nonsmoker.
- Double-bunk eligibility.
- Unit/pod assignment.
- Bed assignment.
- Special handling/priority flags.
- Housing assignment officer name, date, and comments.

Program/work assignment. Program and work assignments must be made in the context of an overall Inmate Management Plan (IMP). This plan encompasses the inmate's programs, treatment and work goals, custody and eligibility status, and expected release dates for the current incarceration and provides a roadmap for the inmate and the classification officer. This should be continually monitored, evaluated, and modified throughout the inmate's incarceration. The IMP and subsequent outcome summaries are also useful to parole and early-release screeners. Program and work assignment data include the following:

Mandatory

- Assessed needs inventory.
- Program and work history, start/end dates, and termination reasons.
- Available program and work assignments.
- Projected available openings.
- Program and work assignments and start/end dates.

Optional

- Weekly schedule.
- Specialized test scores (e.g., psychological tests).
- IMP summary.

Exhibit 4–17. Inmate Management Plan Screen (Page 1) (Florida DOC)

```
                                                    DCLAE8B  11/06/2000 16:24:04
  IRNB004                 INMATE MANAGEMENT PLAN (1/2)                    PAGE   1
 DC#:         NAME:                          EXT.STA: ACTIVE      TRD: 06/13/2001
     CUR.LOC:                  TEAM:     CUSTODY:      WK.ASG:       INT.STA:
   ASSESSMENT DATE: 03/17/2000   PREPARED BY:
    FACILITY:                                 RANK: AE:     0 VO:     0 SA:     0
    TESS: LOW                  VASS:        DIS:        DSSI: 12        WR:     0
SUCCESS FACTORS:    AM: 1 LOW MOTIV      RP: 2 LOW-NEU PRIO
PROGRAM FACTORS:    AE: 0 NO NEED        VO: 1 LEAST IN NEE  SA: 1 LEAST IN
NEED
                    WC: 4 MOD-MOST NEE   WR: 0 NO NEED       PI: 0 NO NEED
                    OW: 0 NO NEED
INTERNAL RISK FACT: IM: 2 LOW-MOD RISK   OI: 1 POSITIVE INF  HO: 5 SECURE CELL
SECONDARY FACTORS:  WL: 4 MODERATE TO    GS: 5 MOST IN NEED  TP: 4 MOD.-MOST NE

WK/PGM: RECOMMENDATION     ASSIGNMENT                        PLACEMENT
1. WC WORK COMPETENCY      AM S06 CONFINEMENT-DISCIPL W8 - N/A, ORIENT OR RECPT
2.                         PM S06 CONFINEMENT-DISCIPL
3.                         EV UUU UNASSIGNED
HOUSING: RECOMMENDATION    ASSIGNMENT                        PLACEMENT
5 - SPECIALIZED HOUSING    SC - SECURED CELL            H1 - MET PLACEMENT
  TRANSFER?: N           STAFF COMMENT?: N  (PF11)
        DISPLAY COMPLETE                          F1=IRN SCREENS,2=IM43,3=IM45
                                                  F4=IM02,6=IM05,8=IM29
```

- Programming priority status.
- Program/work time credits.
- Progress notes.

The Florida RNM illustrates this type of programming information. The "Inmate Management Plan" screen prompts development of an IMP, which is the basic

Exhibit 4–18. Inmate Management Plan Screen (Page 2) (Florida DOC)

```
IM45 0                                                E8B   11/06/00   16:27:03
   IRNB005                 INMATE MANAGEMENT PLAN (2/2)                    PAGE
 DC#:         NAME:                          EXT.STA: ACTIVE      TRD: 06/13/2001

 W/M  CUR.LOC:                  TEAM:     CUSTODY:      WK.ASG:       INT.STA:

   ASSESSMENT DATE: 04/29/1999   PREPARED BY:
   PERIOD FROM: 04/29/1999   PERIOD TO: 10/30/1999   PLAN COMPLETED: 04/29/1999

ACT
  GOAL CODE & DESCRIPTION   OBJECTIVE CODE & DESC.    STATUS CD.&DESC
  AZ NO GOAL                                        E1 GED AWARDED
  BA PARTIC. IN VOC. ED.    B1 EARN FULL VOC. CERT. V5 PROG. NOT AVAIL.
  CA DEV. NO DRUG LIFE.     C1 COMPL A TIER 2-4 PRO S4 FUTURE PLACEMENT
  DB MAINTAIN WORK ETHIC    D2 EARN ABOVE SAT RATIN W1 EARNED AB SAT RAT.
  EA COMPLY SEC. BEHAV. O   E1 EXCEED SECURITY STND C2 EARNED SAT RATING
  FA ADHERE-RULES PROH CO   F1 MAINTAIN CLEAR DR RE C6 1 DR DURING RPT PER
  GA INTRO TO HOLISTIC      G1 COMPLETE WELLNESS PG  R4 FUTURE PLACEMENT
  HZ NO GOAL                                        B1 COMPLETED SECOND. PG
  IZ NO GOAL                                        X9 INELIGIBLE FOR CWR
  JZ NO GOAL                                        T9 INELIGIBLE FOR RELEA

 COMMENT TO INMATE?: Y (F11)        PLAN PRINTED?: Y

        DISPLAY COMPLETE                          F1=IRN SCREENS,2=IM44,3=IM46
                                                  F4=IM02,6=IM05,7=RPRT
```

means by which key classification decisions are made and documented and by which progress is tracked throughout the inmate's incarceration in the system (exhibits 4–17 and 4–18). The IMP is reviewed at least annually and comprises primary work or program recommendations, housing recommendations, and goals and objectives to be achieved during incarceration. The site summary appendixes provide additional detailed information about these screens.

Screen 2 of the IMP documents the objectives for the inmate's next reporting period based on previous goals and current progress toward meeting each goal.

Exhibit 4–19. Offender Assignment Screen (New Jersey DOC)

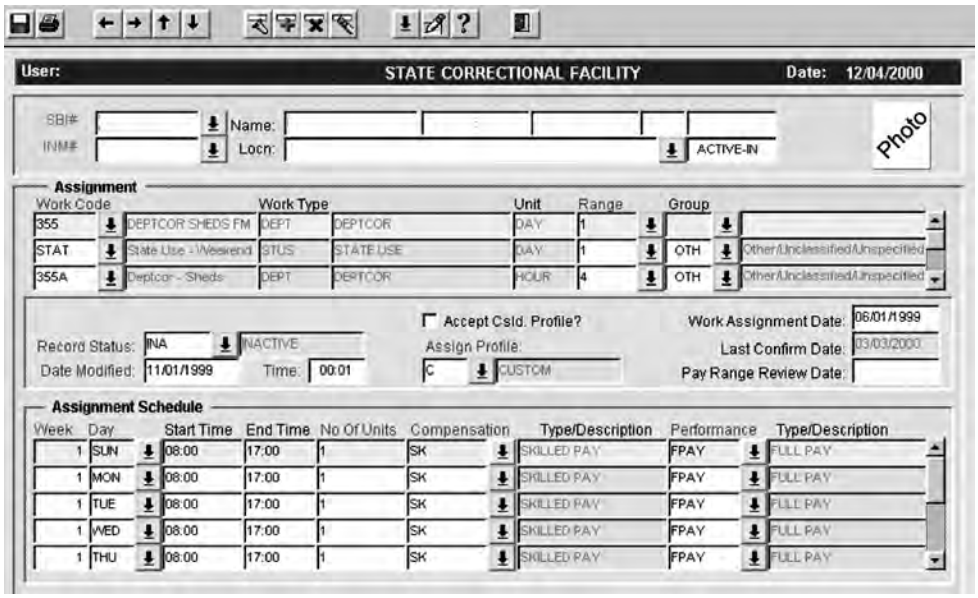


Exhibit 4–20. Substance Abuse Program Participation Screen (Florida DOC)

```
SUBSTANCE ABUSE PROGRAM PARTICIPATION                PAGE: 001
 DOCNO:          NAME:                                    STATUS: ACTIVE
       CUR.LOC.:                                EARLIEST REL.DT: 06/13/2001 TRD
 MPP: Y              SCREENING SCORE: 012            PRIORITY RANKING: 0000000
    DATE  SEQ.    COURSE                      ENTRY  FAC.   DAYS  EXIT
 REQUESTED #      CODE    DESC                DATE       SEC.       DATE   STATUS
  10/31/96 1   S TIER4   THERAPUTIC COMMUN 09/02/98 310 1  819 03/16/99   RSD
  REFERRAL SOURCE: IR INMATE REQ/VOLUN VENDOR: DCS DEPT. OF CORRECTIONS (SALAR
  EXIT REASON: 67 DISC. CONFINEMENT                    NEXT REFERRAL:
  NO ENTRY DT

  09/02/98 1   S TIER1YO TIER1 FOR YOUTHFU 09/21/98 310 2    0 12/01/98   RSD
  REFERRAL SOURCE: OT OTHER SOURCES    VENDOR: BOA BRIDGES OF AMERICA
  EXIT REASON: 74 INSTITUTIONAL NEEDS                  NEXT REFERRAL:
  NO ENTRY DT

  07/10/00 1   S TIERSVC INITIAL GENERIC R                                REQ
  REFERRAL SOURCE:                    VENDOR:
  EXIT REASON:                                         NEXT REFERRAL:
  NO ENTRY DT
```

Exhibit 4–19, from the New Jersey system, illustrates recording and tracking of inmates' current work assignments and schedule, work assignment history, and compensation status information.

Exhibit 4–20, from the Florida MIS, shows an inmate "Substance Abuse Program Participation" data entry screen for alcohol and drug programs.

Reclassification

A key process in a well-designed, objective classification is routine classification review. This may or may not result in a change in the inmate's classification. As with initial security/custody classification and housing/transfer decisions, reclassification should be supported by data collected routinely over time. Accurate, verified data on disciplinary behaviors, program performance and attendance, and updated legal status are important. This component of the classification process in an automated system is facilitated by the functionality (data organization features) of the software. However, the system user must record reclassification decisions and any other change in housing. Data inputs should include the following:

- Scores for each item on the reclassification instrument.
- Override (yes/no) and override reason.
- Classification review date and reason.
- New external security classification.
- New internal custody classification.
- New facility assignment.
- New cell/unit assignment.
- Transfer order and actual transfer date and time.
- Special handling/priority flags.
- Classification officer's name and comments.

The New Jersey classification MIS offers a useful example of reclassification (exhibit 4–21). It provides all pertinent information including an easy-to-use reclassification screen that inventories the last review type, result, reason, and date and other relevant factors.

Community/Prerelease Risk Assessment

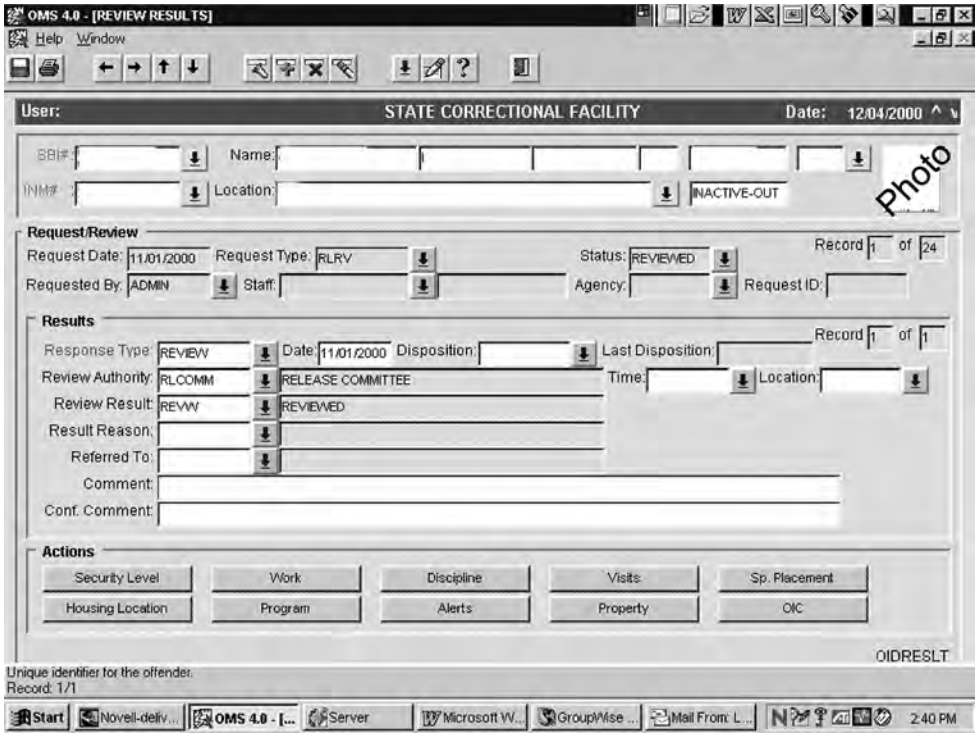
The process of screening and assessing inmates for early release into the community is increasingly viewed as an appropriate and important component of the classification unit. In a well-designed classification MIS, the classification team should be

informed about all aspects of the inmate's social history, vocational and skills background, and incarceration history.

Assessment for risk of community placement and offender and case management strategies follows logically given conceptual linkages and information overlap with initial and internal classifications. (The roles of institutional classification and community risk assessment are discussed in chapter 3.) As previously mentioned, community risk classification requires a broader inventory of risk, criminogenic, and needs factors (exhibit 4–22). Screening for community risk is increasingly seen as requiring a different assessment instrument with its own validation and reliability scrutiny. (See also chapter 8.) Many of these data (e.g., age, criminal history) can be accessed in the existing MIS design. Additional data elements covering both risks and strengths may include the following:

- Peer and criminal associates.
- Criminal personality factors.
- Criminal cognitions/thinking styles.
- High-crime residential environment.
- Social support versus isolation/loneliness.

Exhibit 4–21. Inmate Status Review Screen (New Jersey DOC)



- Family criminality.
- Social stability factors.
- Work/education opportunities on release.
- Financial status.
- History of community noncompliance (technical violations).
- Community/prerelease risk instrument scores and decisions.
- Override (yes/no) and override reason.
- Officer's name and assessment date.

Release

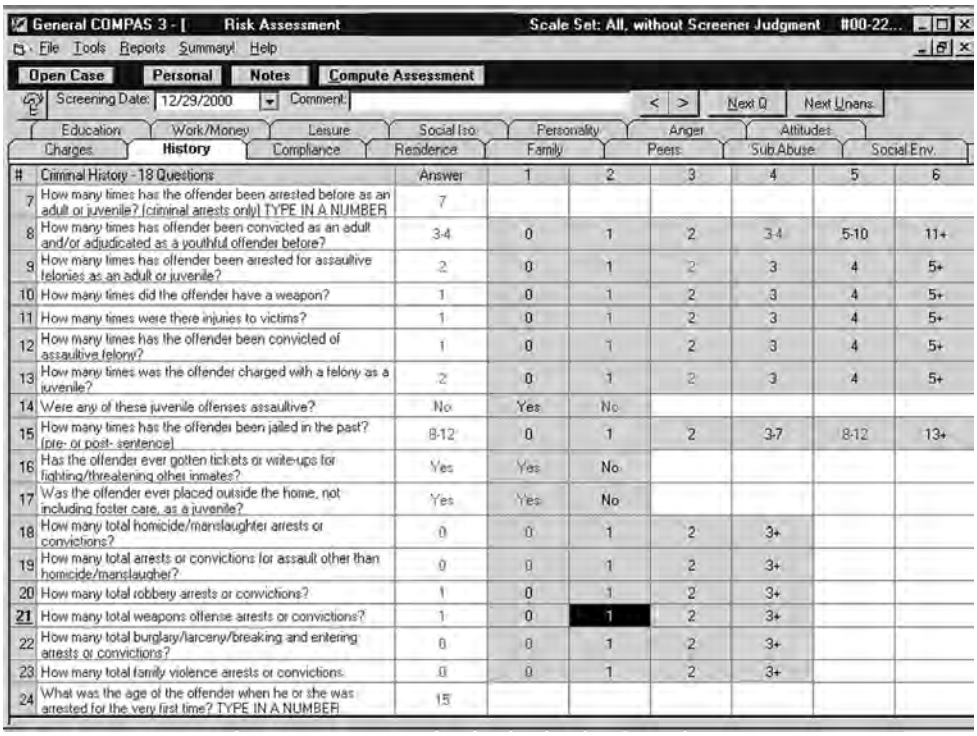
The final inmate release decision requires a review of time computations and the scheduled release date, other agency holds and warrants, compliance requirements regarding victim notifications, and offender registration lists. Data inputs, many previously entered in the system, must cover these factors to support this function:

- Sentence dates and lengths.
- Concurrent versus consecutive sentences.
- Statutory minimums/maximums.
- Time credits.
- Victim/sex offender notification list.
- Holds and warrants information.
- Parole date and conditions.
- Release date and reason.
- Officer's name.
- Comment.

System Functionality

Data must be stored, moved, and displayed as output by the MIS to support the workflow and the user interface (see chapter 5). The display of information on a screen, the sequencing of screens, and the links between systems and databases all

Exhibit 4–22. Risk Assessment Criminal History Screen (Northpointe MIS)



#	Criminal History - 18 Questions	Answer	1	2	3	4	5	6
7	How many times has the offender been arrested before as an adult or juvenile? (criminal arrests only) TYPE IN A NUMBER	7						
8	How many times has offender been convicted as an adult and/or adjudicated as a youthful offender before?	3-4	0	1	2	3-4	5-10	11+
9	How many times has offender been arrested for assaultive felonies as an adult or juvenile?	2	0	1	2	3	4	5+
10	How many times did the offender have a weapon?	1	0	1	2	3	4	5+
11	How many times were there injuries to victims?	1	0	1	2	3	4	5+
12	How many times has the offender been convicted of assaultive felony?	1	0	1	2	3	4	5+
13	How many times was the offender charged with a felony as a juvenile?	2	0	1	2	3	4	5+
14	Were any of these juvenile offenses assaultive?	No	Yes	No				
15	How many times has the offender been jailed in the past? (pre- or post- sentence)	8-12	0	1	2	3-7	8-12	13+
16	Has the offender ever gotten tickets or write-ups for fighting/threatening other inmates?	Yes	Yes	No				
17	Was the offender ever placed outside the home, not including foster care, as a juvenile?	Yes	Yes	No				
18	How many total homicide/manslaughter arrests or convictions?	0	0	1	2	3+		
19	How many total arrests or convictions for assault other than homicide/manslaughter?	0	0	1	2	3+		
20	How many total robbery arrests or convictions?	1	0	1	2	3+		
21	How many total weapons offense arrests or convictions?	1	0	1	2	3+		
22	How many total burglary/larceny/breaking and entering arrests or convictions?	0	0	1	2	3+		
23	How many total family violence arrests or convictions	0	0	1	2	3+		
24	What was the age of the offender when he or she was arrested for the very first time? TYPE IN A NUMBER	15						

must support the workflow and the immediate function. The ability of an MIS to move and combine information electronically (its functionality) affects three main activities:

1. *Eliminating or minimizing duplicate entries:* There is no need to enter an inmate's date of birth more than once. Paper documents can therefore be preprinted with the inmate's date of birth.

2. *Applying rules to combine data:* The possibilities are almost endless. Two applications are as follows:

   - Dates and cases can be sorted and combined by numerous rules (e.g., scheduling to create lists of inmates and decisions that are due or overdue).

   - Risk factors can be scored and combined mathematically in classification instruments using various algorithms.

3. *Quickly moving data to decision points:* The system should automate the movement of information, raw or combined, as follows:

   - From one location to another. For instance, a classification recommendation can be sent electronically from the referring facility to the central office reviewing unit.

- From one work process to another. For instance, a medical classification can be moved to a transfer screen. In addition, the MIS can automatically populate certain data fields intuitively (e.g., officer's name and date fields).

The functionality of any MIS is limited by several constraints. The most important of these are the following:

1. *MIS content:* Data coverage is a fundamental constraint. For instance, if the disciplinary system or the inmate's location is not in the MIS, functionality in this area will be severely limited.

2. *Hardware access and availability:* For instance, if caseworkers have poor access to a terminal, moving information among them with speed or precision may be impossible.

3. *Programming capability:* Unavailable programming resources can result in poor data manipulation, missing key management reports, and severely curtailed development flexibility.

4. *Lack of system integration:* Software module/database integration affects the flow of data between systems.

Electronically available preincarceration information can be easily shared and transferred among relevant units and made accessible by the department MIS. Information about legal dates, current offense(s), criminal history, escapes, and disciplinary history should likewise be easily accessible by the classification system modules. Information about security, custody, medical/mental health, programs, classifications, and an inmate's current location should be easily accessible to the transfer module. Data on sentences and jail time should be easily accessible by the time computation module. Program needs should be linked to program enrollments.

The sections below present brief examples of software design functionality that supports classification and related management processes.

Intake

Identification procedures and acceptance issues. Current advances in computing and increased memory facilitate inclusion of automated biometrics and fingerprint identification, which can be matched to state and national records to verify an inmate's identity. An automated cross-reference to aliases can attach alias data to the master person record.

Electronic capture of a photo image (mug shot) and data on scars, marks, and tattoos can be coordinated with other identifying information. Photo image data can be searched for other useful characteristics (e.g., hair color, complexion, identifying marks), for future query or reference, and for matching in investigations. In a fully

integrated MIS design, court commitment identification data are electronically transferred and automatically populate appropriate fields in the intake screens once positive identification has been established and the inmate's record has been created. Legal status can be evaluated using decision logic software that is designed into the MIS, which can also include an inventory of required information for both identification and acceptance criteria. As acceptance criteria are compiled, the system can automatically recommend eligibility for acceptance into the prison system.

Assigning system identification. A master person identification system is a key component of a prison MIS. Each inmate is assigned a unique identifier. If the inmate comes through the prison system repeatedly, the same master identifier is attached to the current incarceration record, typically with an added suffix or prefix. Each inmate will have only one master record with unlimited associated case/incarceration records. Each case record is unique and stored permanently in the system. If the inmate has not been in the system before, the system automatically assigns a unique person identifier.

Booking. A key function of the MIS is to assist users by automatically populating fields, organizing data, and calculating values. For example, instant offense information and court dates may be imported from an integrated court MIS. Parole revocation details should also automatically populate the appropriate fields in intake screens. Criminal history and detainer data ideally would be accessed and transferred by direct interface with state, national, and international criminal history and Law Enforcement Information Network (LEIN) databases automatically once a positive identification is established.

The MIS design should organize current offense and criminal history information to facilitate classification decisions and related processes by providing fields in which to record offense category (e.g., assault, fraud, drug) and crime class (e.g., felony type, misdemeanor, federal). This helps categorize offense histories for statistical/analytical purposes (e.g., automated calculation of classification risk score).

The system should compute and store the inmate's age based on date of birth. Static demographic data (e.g., gender, race, current/prior gang membership/affiliation, family history, substance use/abuse, medical/mental health, special needs) from previous records automatically populate the current case record fields of the booking screen. In addition, the MIS should automatically search for previous, known enemies who are still in the prison and link them to the inmate's current record. Designing this function into the MIS significantly increases the reliability/consistency of the data and the efficiency of the intake and booking processes.

Time computation. Time computation is a main challenge and often reflects the strength or weakness of MIS functionality. This is a complex process that can be done more accurately and quickly by an MIS software algorithm than by a person. However, sentencing laws are imperfect and changeable. Sentencing policies may be inconsistent with each other or with prison policies and may not foresee all contingencies. Furthermore, sentencing law is constantly changing, which requires

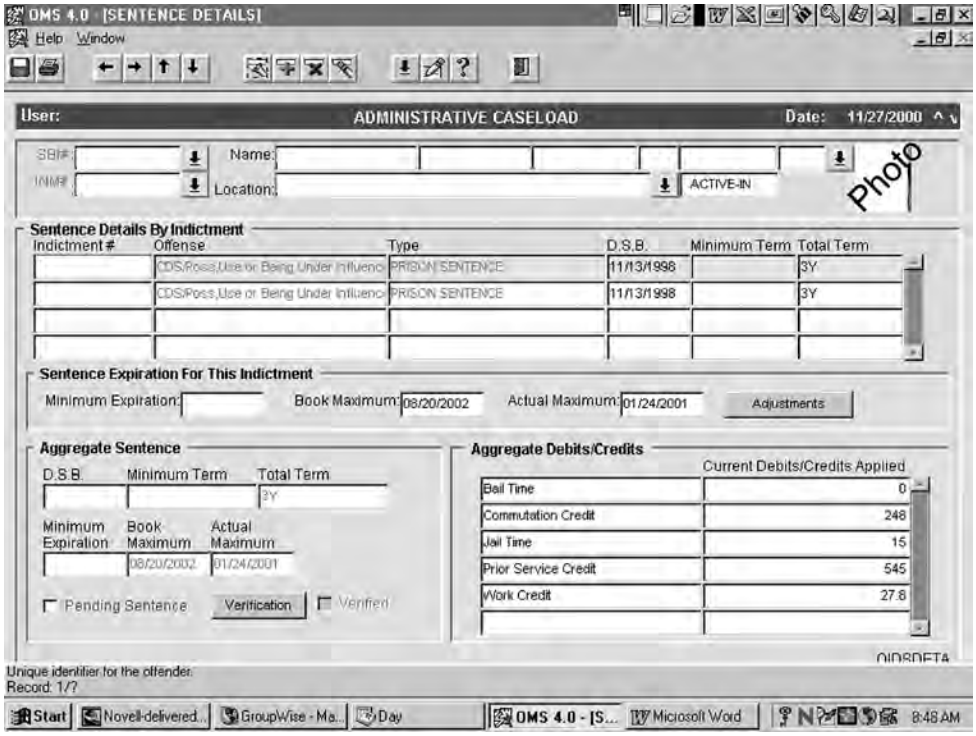
overlay of new formulas over old ones. North Carolina, for example, has more than 20 sets of sentencing laws. Time computation systems require a great deal of programming maintenance and staff monitoring.

New user interfaces allow sentencing grids to be designed into the software and to incorporate all components of the sentence calculation formula. The fields in the grid can then be, for the most part, automatically populated by data previously entered into the system (exhibit 4–23). The sentence calculation formula(s) can be programmed based on a combination of data and case variables such as concurrent, consecutive, mandatory minimums, mandatory maximums, sentence dates, sentence lengths, and time credits.

External classification (security classification). The system should automatically enter the classification date and officer's name (using user sign-on data). Software can determine the most serious offense through a decision matrix algorithm. Escape history, sentence length, and other objective risk factors can automatically be assigned numerical risk values. Subjective risk variables, such as offender notoriety, can be assigned a value by a coded-field feature in the input screen. The MIS can compute external security classification recommendations and record classification comments and special override decisions as manual user inputs.

An alternative design (in lieu of automatically populating fields for classification risk variables and calculating a security/custody recommendation) is to provide helpful popups that contain all relevant information for each specific risk variable for review by the classification officer.

Exhibit 4–23. Sentence Details Screen (New Jersey DOC)

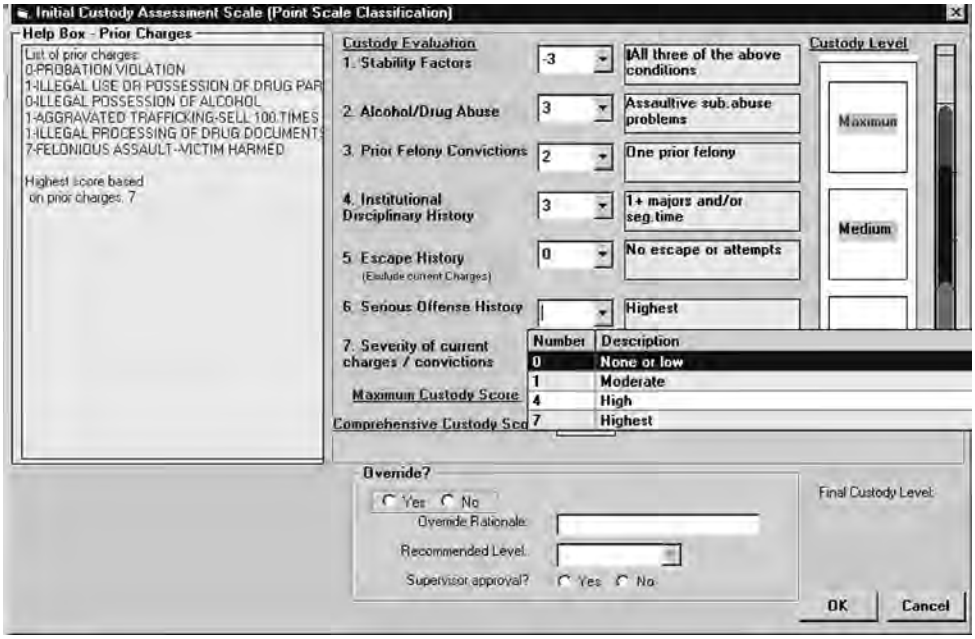


Regarding the classification officer's personal involvement and input in the classification decision, some have argued that a more informed classification decision is made when the officer is more involved in reviewing pertinent data and answering each risk item. Exhibit 4–24 shows an example of a classification MIS that automatically provides all information known in the system relative to a specific risk variable, offers point value options, and suggests an appropriate response.

A final classification decision should always involve at least one level of review. MIS functions can include the presentation of the classification recommendation on a summary screen along with a composite of classification notes, an easily accessible and organized disciplinary history, a criminal history, and a prior classification history. The officer making the final classification decision can use one set of screens to review all relevant data.

Program needs classification. As with other historical data, the MIS should automatically populate fields with prior needs-assessment, treatment, and work assignment histories. This includes fields such as community work history, trade/skill, alcohol/drug treatment (community and institutional), highest grade completed, high school diploma or GED, previous test scores, and other eligibility data. The system can automatically organize and present an inventory of the inmate's criminal history relevant to treatment needs (e.g., sex, drunk driving, and drug offenses; domestic abuse). The assessor need only enter any information that is new since the offender was last in the system. In conjunction with other needs-assessment data, this past information helps determine current treatment needs.

Exhibit 4–24. Initial Custody Assessment Screen (Northpointe MIS)



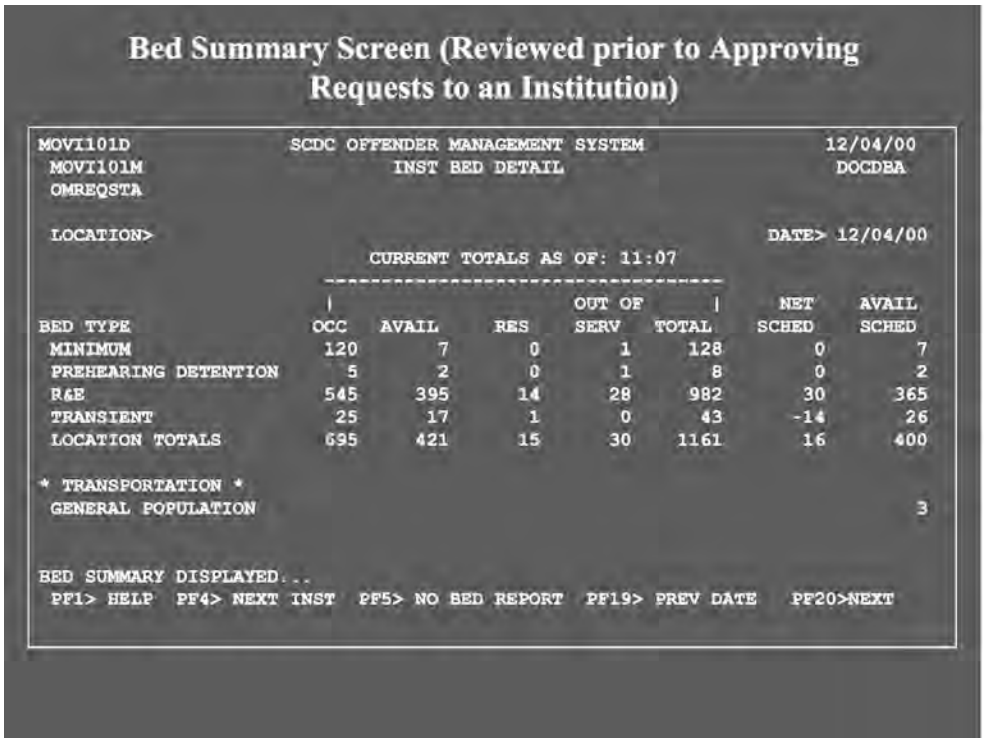
Transfer Scheduling/Assignment

The MIS can support transfer scheduling and housing assignment by integrating and organizing data on inmate moves, beds, and transportation. These integration requirements are often complex. For instance, an inmate may need a transfer from facility A to facility B, but B currently has no beds. A concurrent search of needed moves may identify an inmate who needs to move from B to A. Additionally, moves vary widely in their urgency and specificity. An inmate who needs to move immediately may be eligible for transfer to only one prison; conversely, another inmate move may be less urgent, and a wide range of facilities may be adequate. Similarly, a facility may have no vacancies, but if an inmate must be transferred in, a bed can be opened up by moving an inmate into the infirmary or a special housing unit. Although all bus seats may be taken, there may be an inmate with a low transfer priority in a bed that will not be backfilled who can be bumped from the bus. The MIS must incorporate these details, or staff will find that it is unworkable in practice.

Exhibits 4–25 through 4–27 illustrate functionality that supports the transfer process. Exhibit 4–25 is a screen for assigning an inmate move; it records characteristics relative to the inmate's move (such as transport restrictions). Exhibit 4–26 is a screen that compiles bed types and summarizes vacancies. It also presents all moves, both in and out, scheduled for a particular date to project vacancies at the close of business.[3] Exhibit 4–27 is a screen that presents all transportation routes and seats already taken. Knowing the capacity for each route, the staff can easily determine vacancies.

Exhibit 4–25. Add Transfer Request Screen (South Carolina DOC)

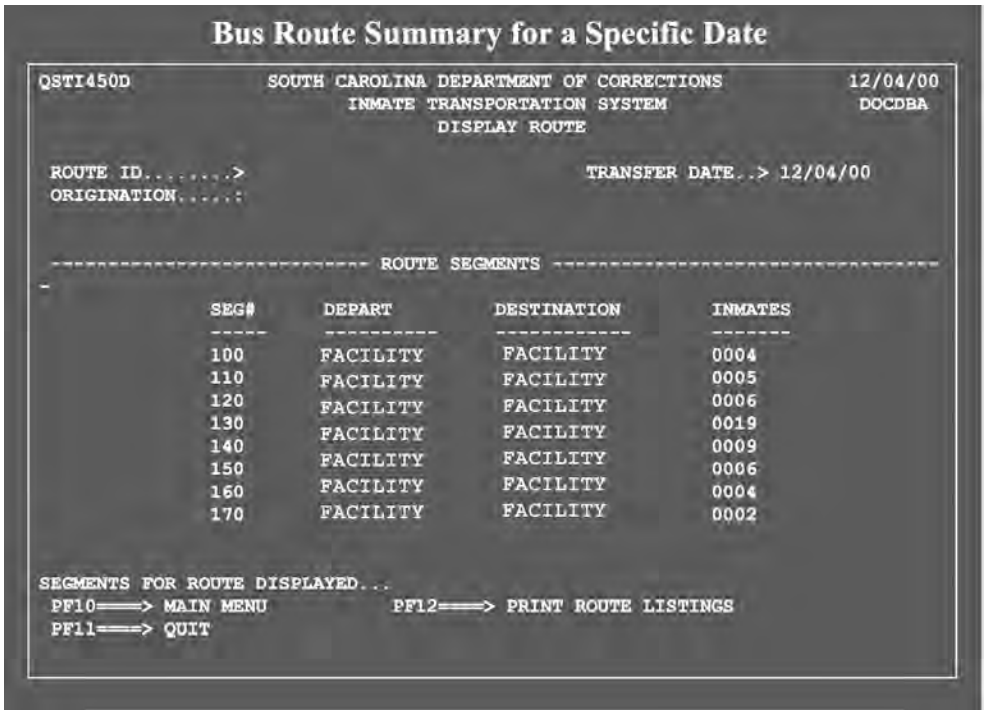
Exhibit 4–26. Bed Summary Screen (South Carolina DOC)



Bed Summary Screen (Reviewed prior to Approving Requests to an Institution)

```
MOVI101D          SCDC OFFENDER MANAGEMENT SYSTEM          12/04/00
 MOVI101M                  INST BED DETAIL                  DOCDBA
 OMREQSTA

 LOCATION>                                                DATE> 12/04/00
                          CURRENT TOTALS AS OF: 11:07
                          -----------------------------------
                          |                    OUT OF       |   NET    AVAIL
BED TYPE                  OCC   AVAIL   RES    SERV   TOTAL     SCHED    SCHED
 MINIMUM                  120       7     0       1     128         0        7
 PREHEARING DETENTION       5       2     0       1       8         0        2
 R&E                      545     395    14      28     982        30      365
 TRANSIENT                 25      17     1       0      43       -14       26
 LOCATION TOTALS          695     421    15      30    1161        16      400

* TRANSPORTATION *
 GENERAL POPULATION                                                        3


BED SUMMARY DISPLAYED...
 PF1> HELP  PF4> NEXT INST  PF5> NO BED REPORT  PF19> PREV DATE   PF20>NEXT
```

Exhibit 4–27. Bus Route Summary Screen (South Carolina DOC)



Bus Route Summary for a Specific Date

```
QSTI450D          SOUTH CAROLINA DEPARTMENT OF CORRECTIONS          12/04/00
                        INMATE TRANSPORTATION SYSTEM                DOCDBA
                              DISPLAY ROUTE

 ROUTE ID.......>                          TRANSFER DATE..> 12/04/00
 ORIGINATION.....:


 ---------------------------- ROUTE SEGMENTS ---------------------------------
-
              SEG#     DEPART        DESTINATION       INMATES
              -----    ----------    -----------       -------
              100      FACILITY      FACILITY          0004
              110      FACILITY      FACILITY          0005
              120      FACILITY      FACILITY          0006
              130      FACILITY      FACILITY          0019
              140      FACILITY      FACILITY          0009
              150      FACILITY      FACILITY          0006
              160      FACILITY      FACILITY          0004
              170      FACILITY      FACILITY          0002


SEGMENTS FOR ROUTE DISPLAYED...
 PF10====> MAIN MENU          PF12====> PRINT ROUTE LISTINGS
 PF11====> QUIT
```

The specific placement of inmates involves many details that staff must consider and manage. Exhibit 4–28 illustrates how name and facility data can be combined to help staff make a careful final check on a transfer.

Internal Classification

Many of the internal custody classification information requirements (e.g., severity of current offense, escape history, detainers, and balance of sentence remaining) can be brought forward from the existing database. Current discipline infraction data can be sorted by severity with the date of infraction to assist in the review and organization of the offender's disciplinary history. The system can use a decision matrix algorithm, as in assigning the primary offense, to assign the inmate to a classification category. Similarly, gang membership/group affiliation data, properly coded in the input screens, can populate the associated risk variable. The system should automatically enter classification date, time, and officer's name. The user who assigns the custody classification can manually enter additional inputs such as aggravating and mitigating circumstances.

The classification officer may also view previous protective custody and special management information. A well-developed functional system organizes and presents all of the offender's previous classification and event history sorted by date, as shown in exhibit 4–29.

Exhibit 4–28. Inmate Facility Screen (Washington DOC)

Exhibit 4–29. Classification Summary Contact Log Screen (Florida DOC)

```
CLASSIFICATION CONTACT LOG                          PAGE: 001
 DC NO:          NAME:                                  STATUS: ACTIVE
                 CUR.LOC:                               TRD: 05/02/2001

A DOCNUM   DATE   TIME     LOG  TYPE            DISPOSITION      STAFF MEMBER
-------------------------------------------------------------------------------
_        12/29/99 08:00 INITIAL RISK/NEEDS ASSE ACTION REQUIRED CDC GENERATED
_        12/29/99 08:05 INITIAL IMP DUE         ACTION REQUIRED CDC GENERATED
_        01/04/00 09:13 INITIAL RISK/NEEDS ASSE R/N INSTRUMENT  STAFF NAME
_        01/04/00 09:14 INITIAL IMP DUE         IMP COMPLETED   STAFF NAME
_        02/01/00 14:16 SUBSEQ. RISK&NEEDS ASSE R/N INSTRUMENT  STAFF NAME
_        02/01/00 14:17 SCHEDULED PROGRESS REPO IMP COMPLETED   STAFF NAME
_        08/29/00 16:41 SUBSEQ. RISK&NEEDS ASSE R/N INSTRUMENT  STAFF NAME
_        08/29/00 16:42 SCHEDULED PROGRESS REPO IMP COMPLETED   STAFF NAME
_        10/10/00 11:15 ESCAPE RISK             DOCUMENTED      STAFF NAME

OPTIONS: I = INQUIRY, U = UPDATE, S = TRANSFER PF6=IM05
```

Housing unit/bed assignment. A useful function is an automatically produced list of available and appropriate beds identified by type. This should be consistent with the agency's classification and housing policies. "Drilling down" to a bed location is a simple search procedure facilitated by the computer-generated bed list. It should allow for identification of all other inmates in that cell, pod, or block by custody classification; special condition flags; race; age; security threat groups; and keep-separates to assist in making informed housing decisions. The system can then generate a transfer list to initiate the move the next day or at a specified time and log the housing officer's name, date and time of housing assignment, date of transfer order, and actual date and time of placement in the new housing assignment. Crowding and limited-resource issues require that the system allow for housing placement overrides with documented override reasons. In addition, the system should automatically flag the inmate's housing as discrepant and post this as an alert in the inmate's classification summary screen. This should start a clock in the background to count discrepant days and should store these data in a computer-generated field that would be useful for reports and statistical breakdowns. The system should continuously check the housing discrepancy list and alert housing assignment staff when appropriate beds become available.

Program/work assignment. A good MIS should link inmates' needs and skills to available programs and workspaces. Once the key data are entered, the system can display available program and work slots with their characteristics and a matched set of available inmates with their characteristics. The MIS can sort lists of inmates in program and work assignments, based on various criteria.

Reclassification

The MIS should cross-reference reclassification rules with dates, case manager caseload assignments, and classification history to create a display of all cases that must be handled during the month. It should also create a report for supervisors of all cases that are due or past due.

Additionally, triggers or warnings should be programmed into the MIS, flagging an inmate for review based on aggravating or mitigating circumstances and other relevant factors. These may include disciplinary conviction, change in legal status, change in balance of sentence threshold, program completion, and change in medical or mental health classification.

The MIS should automatically score the reclassification instrument and allow staff to input their professional judgment and their agreement or disagreement with the numerically scored recommendation. Exhibit 4–30 shows a reclassification screen.

As an inmate's security or custody classifications change over time, the system should automatically calculate and store a computer-generated field for length of time classified at each custody/security level (minimum, medium, and maximum). This serves several useful purposes, including the production of system-generated reports or statistics showing current length of time by an inmate at a particular classification status (current date – classification date = time at current classification status) or the average time served by the population in minimum, medium, or maximum security. Analysts can then statistically profile the inmate population's length of incarceration at any classification/custody level (classification change or release date – current classification date = total time at a classification status). This is useful in determining the actual number of beds needed at each security level as the number of inmates classified in that a particular security status (i.e., minimum, medium, maximum, or super maximum) and their time spent at that security status are needed for accurate analysis.

Community/Prerelease Risk Assessment

Associates, the social environment to which the inmate will return, social supports, family criminality, criminal cognitions, stability factors, work/education opportunities on release, financial status, psychopathy, mental health, and history of community noncompliance are all relevant to decisions regarding community risk. Therefore, all of these factors should be organized and presented by the MIS. Static data populate the risk variables, supplemented by offender self-report data. Various procedures for predicting statistical risk, such as multiple regression, logistic regression, and pattern recognition, can be used to compute the predictor scales for community risk.

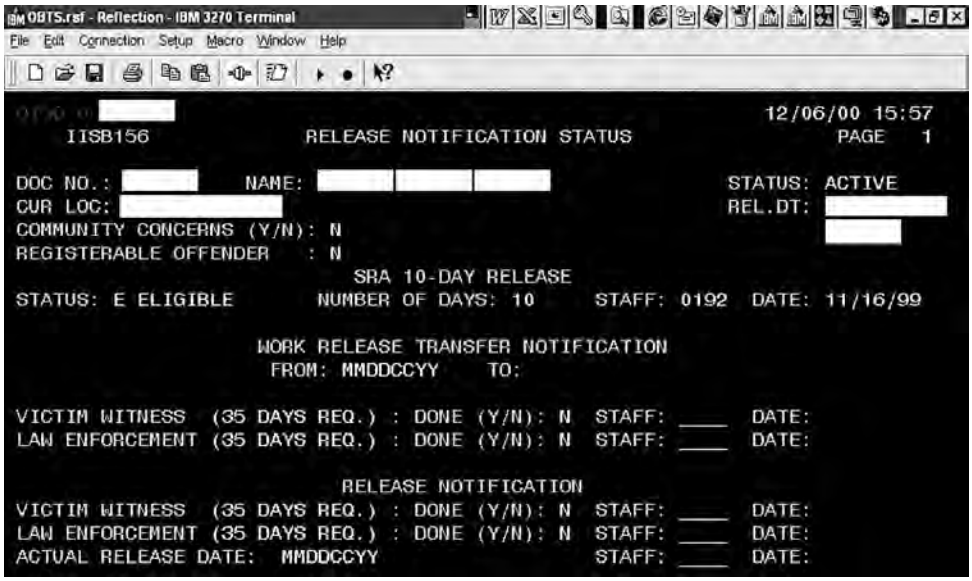
Release

A well-designed system supports the release process by organizing release information for staff (exhibit 4–31). The system can compile time computations; flag holds, detainers, and warrant information; and send queries for updated hold, detainer, and warrant checks. In addition, the system can check whether victims must be notified and automatically print the notification letter for signature. The system can automatically alert the officer if an offender registration is warranted (e.g., for sex offenders), generate the registration, and pass it on to the appropriate system (with signed manual copies to follow). When the final release date and reason are entered, a useful function is the calculation and storage of an "overall length

Exhibit 4–30. Custody Reclassification Screen (North Carolina DOC)

```
                        TS73P10  12/06/00 11:32:38
  ICCS003       CUSTODY RECLASSIFICATION      NC/DOC  PAGE 001
DOC#:          NAME:              CURLOC:       PROJ.REL:
FELON      CASE MGR:                   ACTIV:              OP BED:
CUSTODY: CLS  CONTROL: RPOP  SP.CHAR: IWR  ACT.GRD: 3 REV: 03/10/01 *SEX OFF

SUBMITTED DATE: 12/06/00 TYPE: R - RECLASS FACL:       - CENTRAL PRISON
1. PRIMARY CONVICTION:   0330 - RAPE SECOND DEGREE          2 02
2. SECONDARY CONVICTION:  1210 - BURGLARY 1ST DEGREE        2 00
3. INSTITUTIONAL VIOLENCE: A03 - ASSAULT STAFF W/WEAP  02/18/97   1 07
                           BASIC SUB-TOTAL   18
4. ESCAPE HISTORY: NON-VIO: 0 LT1Y; 0 GT1Y/IMP; VIO: 0 LT1Y; 0 GT1Y  00
5. RULE INFRACTIONS:    4  - NONE IN LAST 6 MOS.            02
6. INFRACTION SEVERITY:  3  - CLASS C                  0
7. MOST SEVERE DETAINER:    -
8. PRIOR FELONIES:      2  - 2 OR MORE PRIOR FEL.          02
  CASE MANAGER:                              COMBINED TOTAL    00

SUGG. C/F CUSTODY: 2 - CLS  STD.RULE:  -
NEW CUSTODY: 2 - CLS  RATIONALE:  -            COMMENTS?: N
FINAL ACTION: __/__/__  TYPE:        AUTHORITY LEVEL:

                    F1=MAIN MENU F3=SCREENS F4=REPORTS
                    F11=COMMENTS F8=REVIEW  F15=MENU
```

Exhibit 4–31. Release Notification Status Screen (Washington DOC)



of stay" field for statistical use. At release, the system posts the release event with inmate summary data to the DOC Web site for use by staff, law enforcement, and the public.

Integration of the prison and parole MISs facilitates automatic creation of a parole case record on release. This parole case record is automatically populated with pertinent information that is usually in the prison MIS. Automated interagency message systems alert parole administration and the appropriate field office of the inmate's release and pending or scheduled contact.

System Error and Data Coherence Checks

Effective MISs take advantage of recently developed programming tools and utilities to integrate automated system edits, data quality checks, and data omission alerts (exhibit 4–32) at appropriate locations in the software. Edit checks alert users that a data value is inappropriate (i.e., does not match coded values for that field) or that data being entered are inconsistent with data already entered in the database.

More sophisticated data integrity edits, like those developed for the COMPAS system (Brennan and Oliver, 2001), use signal-detection procedures to determine whether inmate data typically collected through interviews and official sources contain inconsistencies or incoherent implications (exhibit 4–33).

Outputs and Reports

Once classification case processing has been automated, the MIS can analyze the data to monitor and evaluate the entire classification system and related systems. Numerous management and policy-tracking reports can be produced to answer critical management questions. These reports can also suggest where improvements are needed across the prison system. Finally, reports based on classification data can project departmental needs for staffing, treatment resources, new beds and bed types, and so on.

Exhibit 4–32. Required Data Missing Alert Screen (Northpointe MIS)

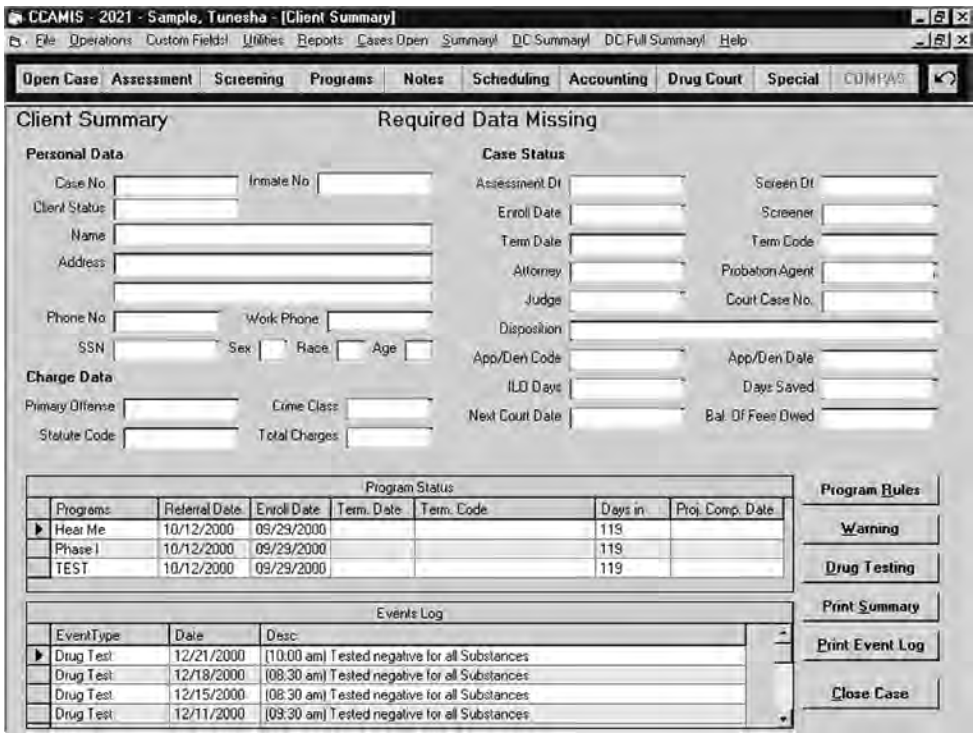
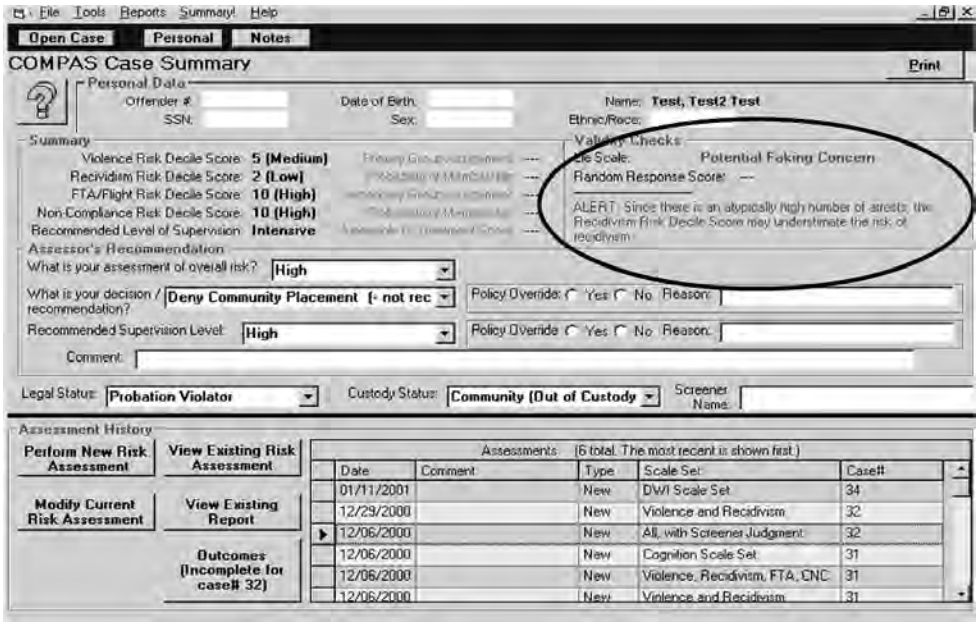


Exhibit 4–33. Data Validity Alert Screen (Northpointe MIS)



Recent advances in computing technologies and MIS software offer more powerful capabilities to prison staff and managers. However, the advent of improved analytical and report-generating capabilities has created a need for new competencies and training of various prison managers in using data to address their organizational needs. Current MIS reporting capabilities no longer require that all reports and outputs be developed and provided by the prison MIS staff or the research and planning departments. Current user-friendly reporting and analysis modules allow the creation of reports and outputs as the need arises.

MIS output and reporting capacities must respond to the many functions that are required by staff at different levels of the organization, including line and operational staff, middle managers, unit supervisors, top administrators, and policymakers. Some of the MIS data uses and outputs required by the various stakeholder groups are shown in exhibit 4–34.

Categories of Outputs and Reports

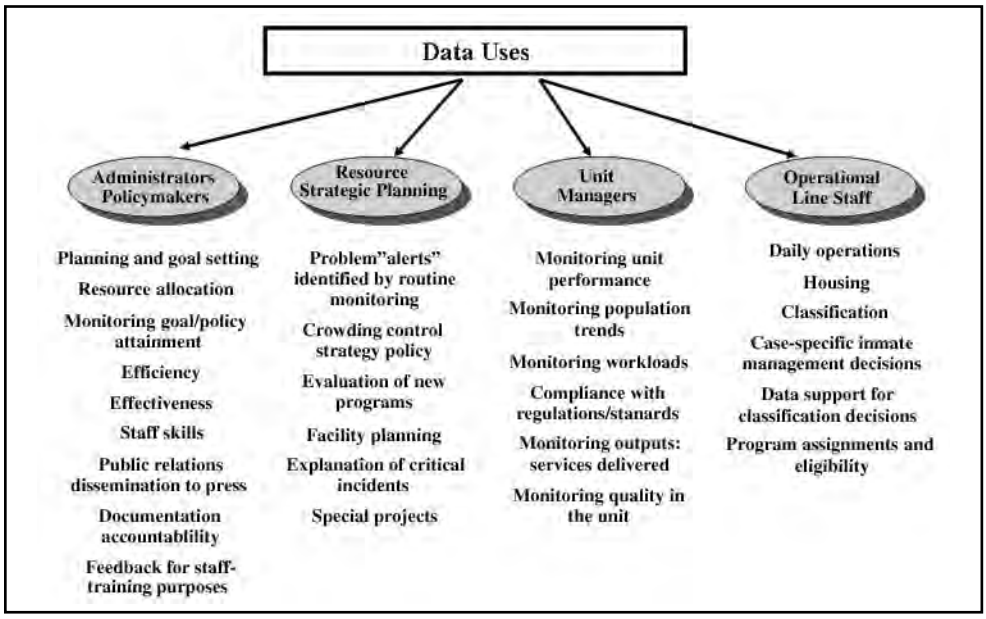
Various classes of MIS users require parallel sets of outputs and reports that respond to four general categories of organizational functions. The following discussion presents the specific output needs for each category:

1. *Case-processing decisions:* Inmate and classification data.

2. *Operations control and monitoring:* Task performance data.

3. *Management control:* Resource allocation and use data relative to organizational goals.

Exhibit 4–34. Agency Staff Output Data Needs



4. *Strategic planning and policy analysis:* Data relative to organizational objectives, resources used to attain those objectives, and policies governing resource use and management.

Classification case processing. Classification staff require detailed information about specific, named inmates in real time; accuracy of data is paramount. The following items are types of output that support this function:

- Inmate labels.
- Schedules and lists of inmates for classification and reclassification.
- Schedules and lists of inmates to process for legislatively mandated initiatives (e.g., DNA, sex offender notification, victim notification).
- Worksheets, such as classification forms, for staff to complete.
- Rosters of program vacancies and inmates awaiting program assignments.
- Preprinted fingerprint cards.
- Rosters of inmates available for movement.
- Housing vacancy reports.
- Preparole reports, for example, on inmates' institutional adjustment.

Correctional organizations have become information driven in that key decisions must be justified and driven by decision-relevant knowledge. With the advent of vast databases, external pressures from legislatures and the courts to document performance and results are mounting. Budget pressures and competition for limited public resources demand that prison administrators arm themselves with the information necessary to survive these policy battles.

Operations control. Control and monitoring of classification-related operations is a main concern of middle management. Reports should be available to track workload and work quality/efficiency for user-designated time periods (e.g., daily, weekly, monthly). These time-limited data can be transferred to data analytic charts to estimate trends and exceptions and to produce alerts if a trend line is rising or falling to a dangerous level. For example, a classification manager may require alerts if the trend in overrides has risen to excessive levels. Output needs include the following:

- Workflow monitoring.
- Relation of inmate classification to actual housing placement, including discrepancy reports.
- Distribution of classification decisions and overrides by the caseworker and facility.
- Relation of inmates' program needs to actual program/work assignments.
- Transfer orders that need to be canceled.
- Exception reports, such as enemies in the same prison, data accuracy and completeness, inmate releases without victim notification, and sex offender notification.

Management control. At a higher organizational level, the same data can be processed to reflect overall prison operations and the degree to which major prison correctional goals are being met. For example, many of the same operations control and monitoring reports used by unit managers can be aggregated to reflect the operation of the larger organization (e.g., safety charting across the organization). Whereas operations managers use detailed reports on inmate classification and housing discrepancies to ensure that each discrepancy has an appropriate documented reason, management can use the same report to examine the number of inmates at a specific classification level and bed availability for that level. Typical management-level reports might include the following:

- Staff resources (caseload sizes).
- Bed resources (patterns of vacancies, shortfalls).
- Program resources (patterns of vacancies, shortfalls).
- Transportation resources (patterns of empty seats, unnecessary moves).
- Reports of unsuccessful transfers.
- Projections of resource needs, including trends in stock and flow populations by resource variables (e.g., trends in numbers and types of special needs inmates, distribution of security classification types, and education levels).

- Evaluations as needed for measuring the validity and impact of classification systems (e.g., evaluations of disciplinary adjustment or completion of appropriate programs).

Strategic planning. Strategic planning requires flexible analysis to address multiple policy issues. A large range of complex analytical techniques (e.g., simulation procedures, regression-based forecasting methods, data-mining techniques; see chapter 9) may be required. Strategic tasks include revising organizational objectives, forecasting population growth trends to determine resource needs, and developing implementation plans for new programs for specified offender categories. Classification supports strategic planning by providing routine analyses of prison population subcategories and trends in the size and nature of specific offender classifications. The specification of policy relevant to offender target groups is a critical component of most alternative sanctioning policies. Classification data must indicate which new offender categories are critical to major policy challenges (e.g., overcrowding and prison population management) or whether offender target categories should be changed. Classification data must also support simulation studies on the impact of policy changes and evaluation studies on program effectiveness for specified target populations. The range of policy studies is virtually unlimited, which in turn creates the demand for flexible analytical procedures (see chapter 9).

Production of Output Reports

Output reports can be produced in several ways. In the past, traditional mainframe systems often limited outputs to canned reports that had been developed by the prison MIS staff or research department. This restriction is still widespread. Canned reports typically can be run quickly and routinely without the need for high-level programming skills. A customized or modified report, however, may require time-consuming programming and cause delays, which have produced considerable frustration and have in many cases undermined the utility of IT in corrections.

A second approach makes use of relatively user-friendly data analytic packages (e.g., Statview, JMP, Microsoft Excel, and others) and report production packages (e.g., Business Objects Crystal Reports and others) for greater flexibility. These third-party reporting and statistical tools facilitate a somewhat cumbersome but workable strategy of downloading extract files from the mainframe systems to personal computer (PC) platforms for access by these reporting packages. Exhibit 4–35 illustrates this approach as adopted by the South Carolina prison MIS staff. This approach has allowed many prison systems to increase their data analytic and reporting capabilities greatly, introduce more advanced data analytic procedures, and achieve greater flexibility in addressing diverse management and policy problems such as crowding analysis and complex projections and forecasting.

Recently developed MIS graphical user interface (GUI) and object-oriented user interface (OOUI) applications provide integrated and ad hoc reporting capabilities within the system (see chapter 9 for details of some of the more advanced procedures). In addition to generating numerous canned reports, these new systems

Exhibit 4–35. Mainframe to PC Ad Hoc Reporting Schematic (South Carolina DOC)

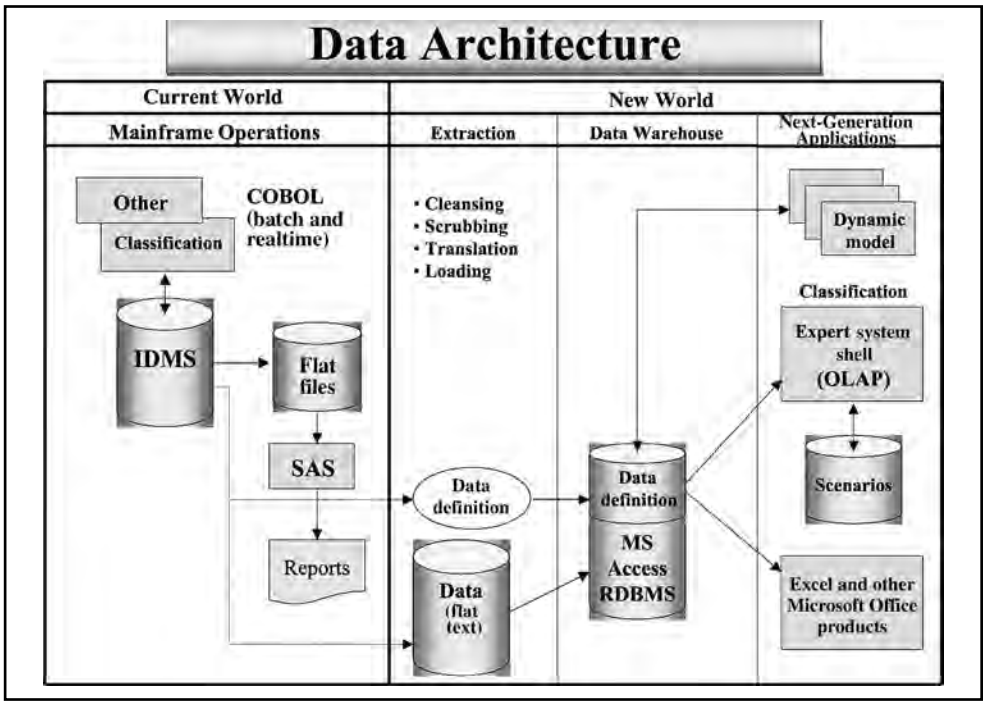


Exhibit 4–36. Web-Based Ad Hoc Report Generator (North Carolina DOC)

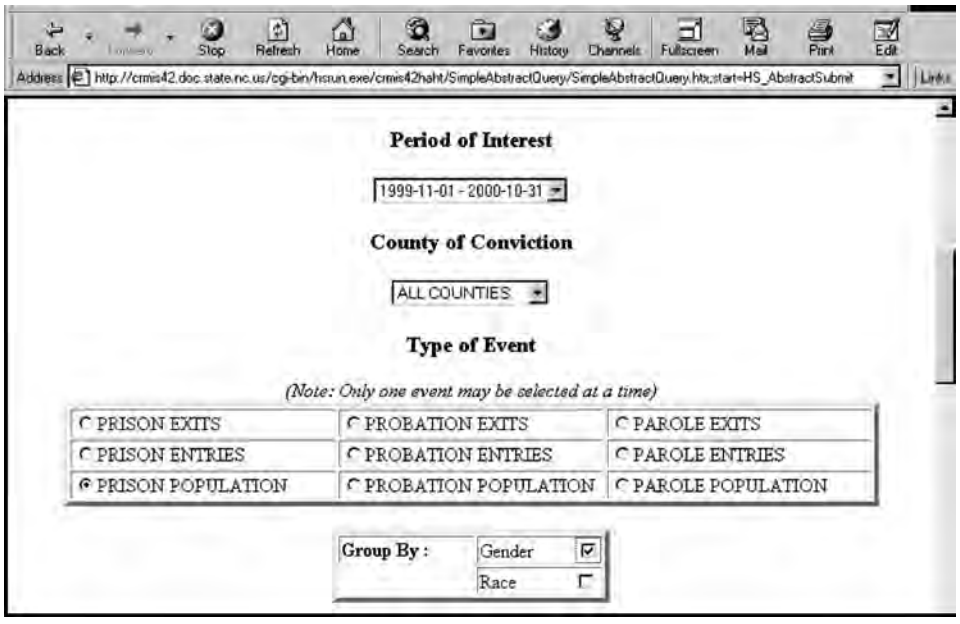
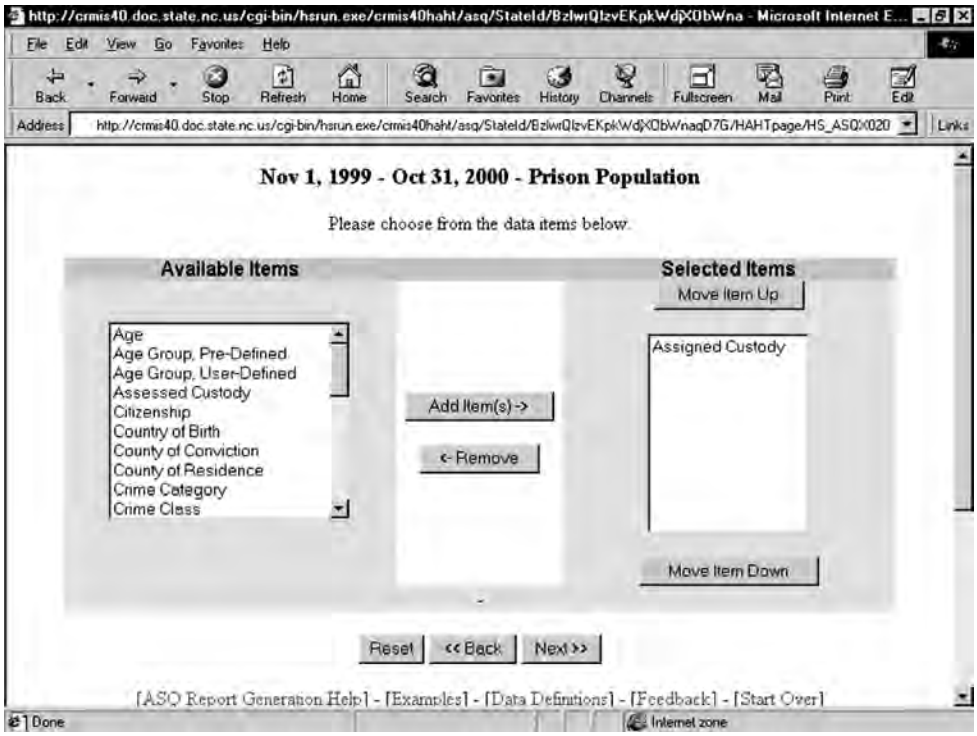


Exhibit 4–37. Web-Based Ad Hoc Report Generator (North Carolina DOC)



enable an MIS user with minimal training to generate custom reports as needed. Similar ad hoc reporting tools are available through Web access (exhibits 4–36 and 4–37). These systems typically access an extract database from the main agency's MIS (often with the help of "wizards") to navigate the report-generating process.

Conclusion

Advances in MIS technology have expanded the options available to classification managers and staff to include options for organizing, viewing, retrieving, and reporting data required for day-to-day line staff and management decisions in a timely and efficient manner. Current MIS software can enable staff to create and revise statistical reports as needed, given that system features and functions are responsive to users' needs and that particular circumstances are in play at the individual agency. Training and competence building are critical to users' development of a deeper understanding of statistical reports and the issues of valid measurement. Increased competence and more powerful and accessible software should encourage prison managers to make greater use of these reporting capabilities, stay better informed, and be more effective in meeting agency objectives.

five

CHAPTER

Software Design Principles and the User Interface

Introduction

State correctional agencies have been automated to varying degrees for the past quarter century. This period has witnessed significant investments in hardware and software. Most state DOC systems were automated in 1970s and early 1980s mainframe-based MIS infrastructures. These character-based, mainframe systems have generally served their purpose in automating and managing the data needs of large correctional agencies, but many are encumbered by the design limitations of the older technologies. These restrictions have become increasingly obvious in recent years.

These older technologies have in some cases delayed or limited progress in designing and implementing newer software designs. In the early days of computing, programmers and systems designers often adopted an attitude that computing resources were scarce. Scarcity thinking fueled the broad assumption that there was never enough computational power, hard-disk space, or random-access memory (RAM). Recent advances have created a world of profusion. Today's computers are many times more powerful and often are underutilized by the demands of current correctional software. Hard-disk space, RAM, networking, and so forth, are no longer viewed as major limitations that restrict correctional agency applications.

A dilemma in many correctional agencies is whether to continue to invest in their mainframe or legacy systems and attempt to incorporate new software technologies into them or to jettison the old system in favor of a contemporary computing environment that satisfies increasing demands for user-friendliness and distributed computing. A related financial issue is that unlike legacy mainframes, modern desktop computers and much current software are seen as consumable assets rather than as fixed assets. The fundamental problem is not that the current stock of prison mainframe computers and related MIS software cannot perform their designated functions but that the technology is advancing so rapidly that current software may lag behind the productivity gains offered by newer and often cheaper technologies. Maintaining older computers and software in critical mainstream roles longer than appropriate can be "penny wise and pound foolish" (Cooper, 1995).

Advances in computing technology have created a mindset of "abundance thinking," particularly in software design, which liberates the designers from worries about memory, storage, and cycles and shifts the focus to optimizing the "friendliness," speed, and comprehensiveness of the user interface (Cooper, 1995).

Decisions to abandon older technologies may be made earlier and more easily in the private sector, but this issue is relevant in current correctional settings. Arguably, some correctional MISs may need to migrate to newer platforms as quickly as possible to take advantage of productivity enhancements available with the new technology. Ironically, migrating to a new platform can sometimes occur more quickly and inexpensively than attempting to program changes into the legacy systems.

User Interface

Current user-interface (UI) technologies have seen major advancements and several paradigm shifts in their evolution (Mandel, 1997). The most obvious differences between the older mainframe-based computing environments and today's Microsoft Windows-based technology are evident in the software application's UI. UI comprises input and output devices and the software that supports them. The interface may be viewed as including everything that shapes the user's experience with the computer, including documentation, training, and human support (Baecker et al., 1995).

Current desktop computing systems have clearly taken advantage of this new breed of UI software, which has revolutionized the way people at different skill levels can work with a computer. Much computer software, especially older mainframe and character-based systems, is not intuitive, easy to learn, or easy to use. If users become frustrated or confused when using software, the problem is often the interface. UI is thus a critical element in the selection of software solutions for a prison environment. Software must fit users' skills, learning capacities, work styles, and work pressures in each agency. An effective software interface enables users to do what they want to do, when and how they want to do it; it must not get in the way of or repeatedly interrupt the workflow. Distractions may undermine the quality of the work and users' productivity.

However, an effective interface is only one aspect of software application design. UI cannot compensate for a flawed or ineffective underlying design or system. This distinction often arises with the decision to update older mainframe systems. Many development tools may enable the MIS staff to adapt a modern personal computer (PC) user interface to existing mainframe programs, but this may simply result in an ugly program with a pretty face.

Many software developers in the past two decades have attempted to improve their software by adding more functionality to their programs. However, this focus on program functions has changed so that current technology has an equal or greater focus on the analysis of tasks that users perform. This task-oriented focus is increasingly implicit in all aspects of MIS and UI design, including online and hardcopy help and documentation (Mandel, 1997).

Software Design Principles

Visual representation, screen design, table design, and so on, are literally only the tip of the iceberg in software design. The second layer of the design iceberg is the "feel" of the interface, including interaction techniques, device mapping, and standard menus, which govern users' interaction with the software. The most important components of the system design are those that are embedded in the user interface, such as object properties (e.g., font type, color, size, formatting tools, table structure). Additionally, design features incorporate many recognizable symbols, icons, and so forth, that users can easily remember (e.g., printer and folder icons). These icons should correspond to common mental models linked to the structure of the overall system and users' specific work tasks.

Mandel (1997) argues that UI design should be based on a thorough knowledge of users' work experience and expectations. Designers should be familiar with the basic physical, perceptual, and cognitive abilities of users. The selection of design tradeoffs must be based on a knowledge of which features are more important in accomplishing users' goals. Design principles may conflict with the basic goals of the software. For example, classification line staff may feel that a minimal number of data elements is adequate for their decisionmaking regarding specific inmates, whereas management may need more complete information for quality control purposes (often viewed by staff as unnecessary and requiring extra work). Another feature that may annoy staff is editing routines built into the software to alert staff to incomplete or erroneous data entry. These routines may be seen as causing unnecessary delays, depending on their efficiency for fast editing.

Mandel (1997) further argues that users should not be limited to only one UI style. No single interface style is optimal for all users at all times. Different interface styles may be more appropriate for different tasks and for users at different levels of expertise. For these reasons, most current operating systems offer more than one user-interface style (e.g., mouse, keyboard, touch screen), allowing users at different skill levels to customize the software for their own comfort.

The three UI design principles are the following:

- Place users in control of the interface.
- Reduce the memory load for the user.
- Make UI consistent across all programs that will be used.

Development of UI styles has followed the evolution of PC operating systems. UI should be transparent and should encourage users to interact with objects on the screen (icons, buttons, menus) rather than using indirect methods such as typing commands.

In a transparent UI, users interact with the computer in a fashion similar to the way in which they perform their ordinary work tasks. This contrasts with interactions that are driven by the needs of the computer's operating system or other factors that have no clear relation to task goals. For example, a transparent UI for a housing officer would provide an onscreen map of cells with inmates as visible objects in the cells. This contrasts with a UI that requires the user to navigate the computer's file storage system by opening folders and directories to find cells and inmate data to be edited on a text command screen.

Interfaces must become more intuitive, predictable, and forgiving than those designed in the mainframe era. A continuing problem is that many current UI models do not take full advantage of the power of current hardware and software technologies and thus are awkward for today's users. One problem noted in some current DOC MIS software programs is that they are often built on multiple platforms with different operating systems and many diverse programs. This makes it difficult to offer a consistent interface, so that in some cases staff must use several very different computers and UIs to accomplish a single task.

Design Principles Placing Users in Control

Mandel (1997) outlines various design principles that place the end user in control of the workflow:

- Use mode changes judiciously. For example, older mainframe programs demand that a user shift into a special state to enter records and then into another to print them. These behavioral states are modes that can be extremely confusing and frustrating.
- Allow users to use either the keyboard or the mouse (flexible).
- Allow users to change focus (interruptible).
- Display descriptive messages and text on the screen (helpful).
- Provide immediate and reversible actions and feedback (forgiving).
- Provide meaningful and efficient paths and exits (navigable).
- Accommodate users who have different skill levels (accessible).
- Make UI transparent (facilitative).
- Allow users to customize the interface (accommodating).
- Allow users to manipulate interface objects directly (interactive).

Interface Styles

Several interface styles that have been common in prison work in the past 20 years are described below.

Command-line interface (CLI). CLI was one of the original human-computer interface styles for early PCs such as CP/M machines and the IBM PC. Users typed in requests or actions using predetermined codes, each with a unique meaning and syntax. CLI is the least effective interface in terms of its consistency with the user's mental model of how the application software works. CLI is best suited to experienced users rather than novice users. Exhibit 5–1 lists advantages and disadvantages of CLI (Mandel, 1997).

Menus, toolbars, and popups. Menus are a powerful means of translating the system designer's view of the system into tasks or operations that users can understand and use. Menus provide a visual representation of the structure of the underlying software and the selections available to users at any time. The key to the success of menu design is skillful translation of underlying application concepts and functions into a coherent set of user options. Menus should provide routings and choices that logically fit the job tasks. CLI users often have no idea where to find programs and files (choices) in the operating system (routings). Menus provide explicit listings of the routings and the choices of directories and folders (Mandel, 1997). Exhibit 5–2 lists advantages and disadvantages of menus, toolbars, and popups.

Exhibit 5–1. Advantages and Disadvantages of Command-Line Interfaces

Advantages	Disadvantages
• Quick, powerful, efficient interaction for experienced users	• Little or no prompting and instructions on screen
• User-controlled interaction online memory aids	• Usually requires use of hard copy or
• Uses minimal screen space status	• Usually provides no feedback or task
• Can be used in conjunction with other user interfaces	• Assumes typing skills
	• Difficult to learn and memorize for new users
	• Command names are not meaningful to users and often difficult to understand/ remember
	• Command syntax must be followed exactly (making it error prone) and is not interruptible

Source: T. Mandel, *The Elements of User Interface Design* (New York: Wiley Computer Publishing, 1997).

Exhibit 5–2. Advantages and Disadvantages of Menus, Toolbars, and Popups

Advantages	Disadvantages
• No memorization of complex commands certain users or tasks	• May not be appropriate or efficient for
• Reduces keyboard entry errors; minimal typing	• Often needs fast-path navigation and selection techniques
• Structured navigation benefits the casual user	• Does not automatically make interface easier to use
• Easier to learn	• Uses more screen space
• Easy to track and correct responses and errors	• Relies on user understanding of menu groupings and hierarchies
• Supports recognition memory vs. recall (less demanding)	• Overuse of modes can force rigid use of system's path
• Can be used in conjunction with other user interface styles	

Source: T. Mandel, *The Elements of User Interface Design* (New York: Wiley Computer Publishing, 1997).

Most current interface styles incorporate menus. They are standard in Microsoft Windows-based applications (exhibit 5–3) but have also been incorporated in less sophisticated ways into traditional mainframe applications (exhibit 5–4). Menus serve two purposes: to help users navigate within a system (routings from one place to another or from a menu to other menus or submenus) and to help users perform actions by selecting items/functions from lists (exhibit 5–5).

A key feature of menus is that they can provide users with only the valid choices and routings for the current task or selected objects. This reduces errors, raises efficiency, and cuts learning time. For example, exhibit 5–6 shows that certain menu options are disabled when an inmate's record has yet to be selected because their functions are not relevant in the absence of a selection. Once a record has been loaded, all relevant menu options become available (exhibit 5–7).

These newer interface styles also provide toolbars and function buttons that present additional menus of program actions, tools, and options (e.g., print, search, copy) that users can place anywhere on the computer screen (exhibit 5–8). Function buttons basically act like menus, presenting tasks as titled tabs (exhibit 5–9).

Another component of the menu interface style is the popup menu. They are called popup menus because they appear to pop up on the screen next to an item when users press the appropriate key or mouse button. Popup menu content depends on the context and the range of the user's tasks at hand. Exhibit 5–10 shows a popup menu of sentence adjustment codes detailing options available for time credit/debit entries.

Exhibit 5–3. Main Menu Screen (New Jersey DOC)

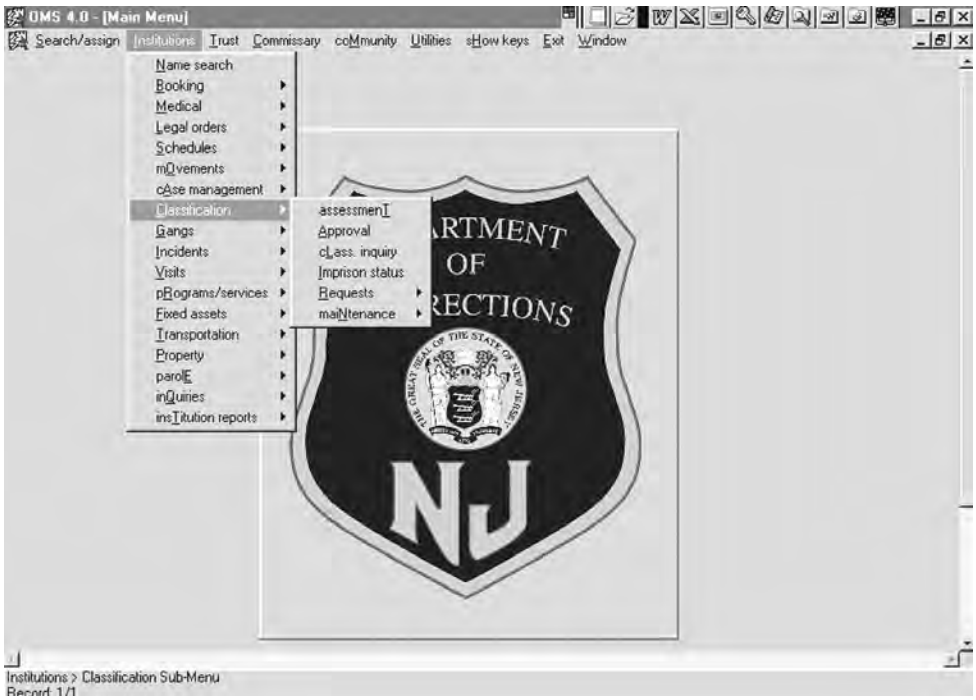


Exhibit 5–4. Transportation System Menu Screen (South Carolina DOC)

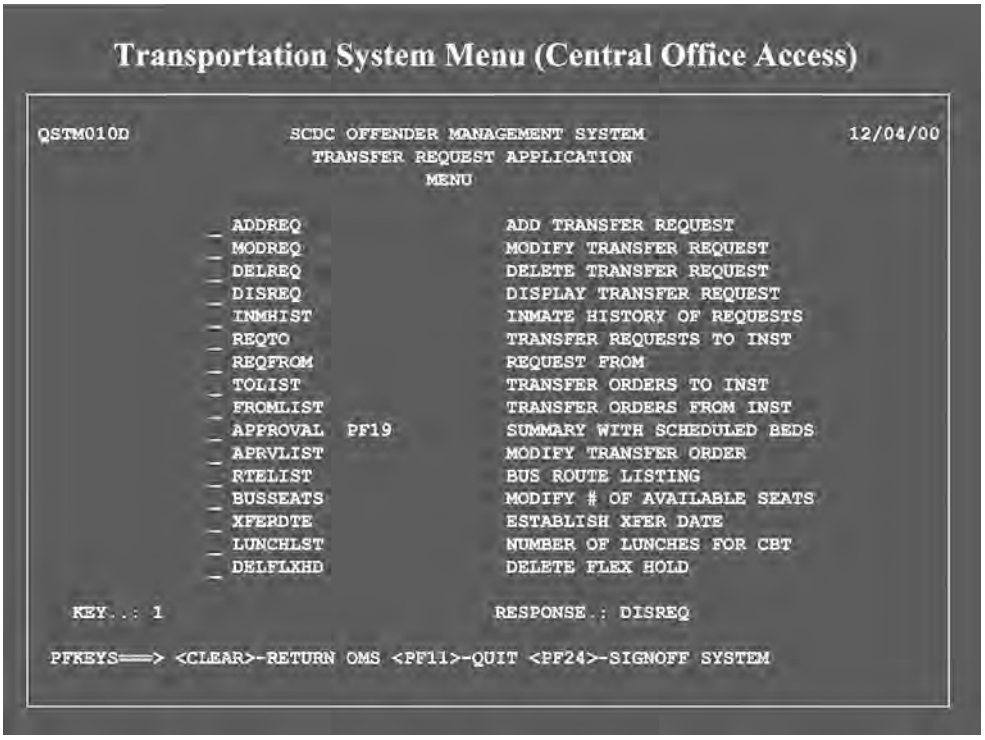
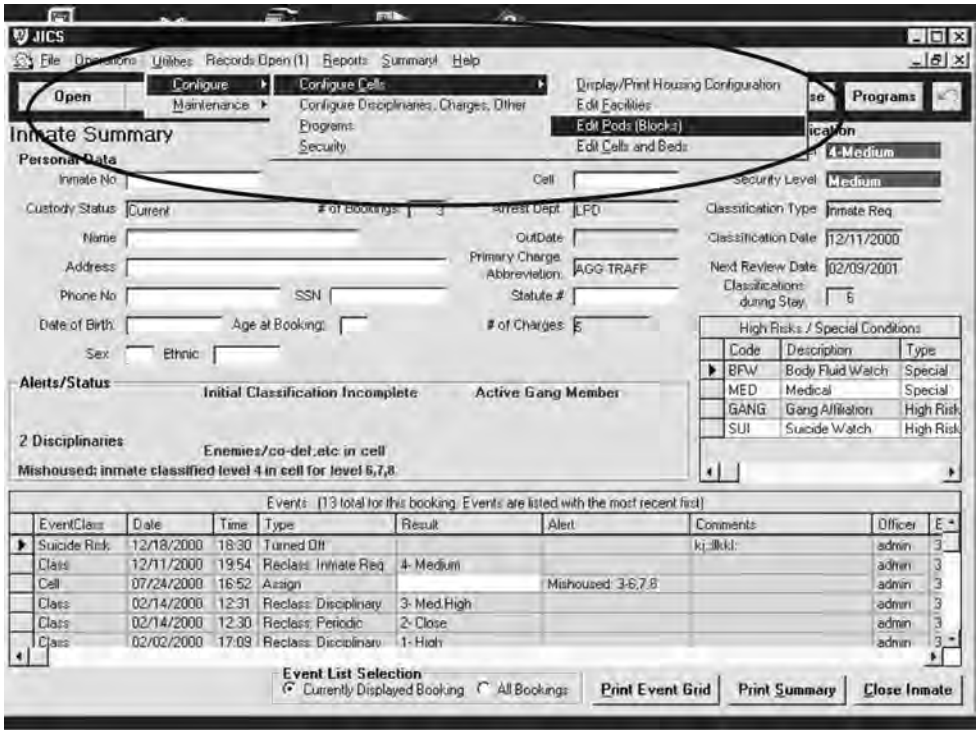


Exhibit 5–5. Inmate Summary Menu Screen (Northpointe MIS)



Wizards

Wizards are increasingly being incorporated into software interfaces to guide the inexperienced user through predefined sequences of common tasks. Caution should be used in programming wizards because of the ultimate desirability of letting the user stay in control. For the more experienced user who does not need controlled guidance, the ability to turn off the wizard or skip steps is important. Exhibits 5–11, 5–12, and 5–13 show a partial wizard sequence for generating custom reports. Note that action buttons (e.g., "Back," "Next," "View," "Report," and "Show Percentages") are on each screen directing the sequence.

Exhibit 5–6. Open/Create Record Menu Screen (Northpointe MIS)

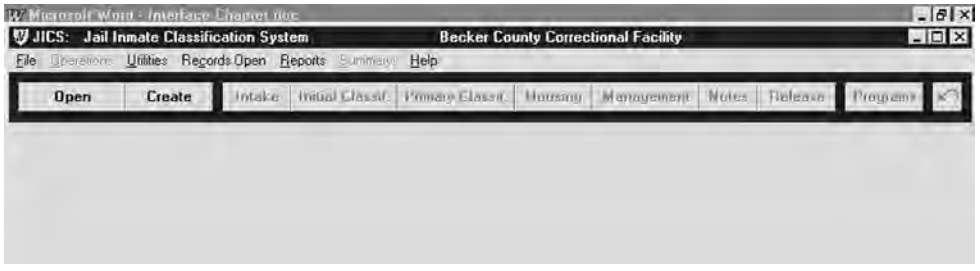


Exhibit 5–7. Inmate Summary Screen (Northpointe MIS)

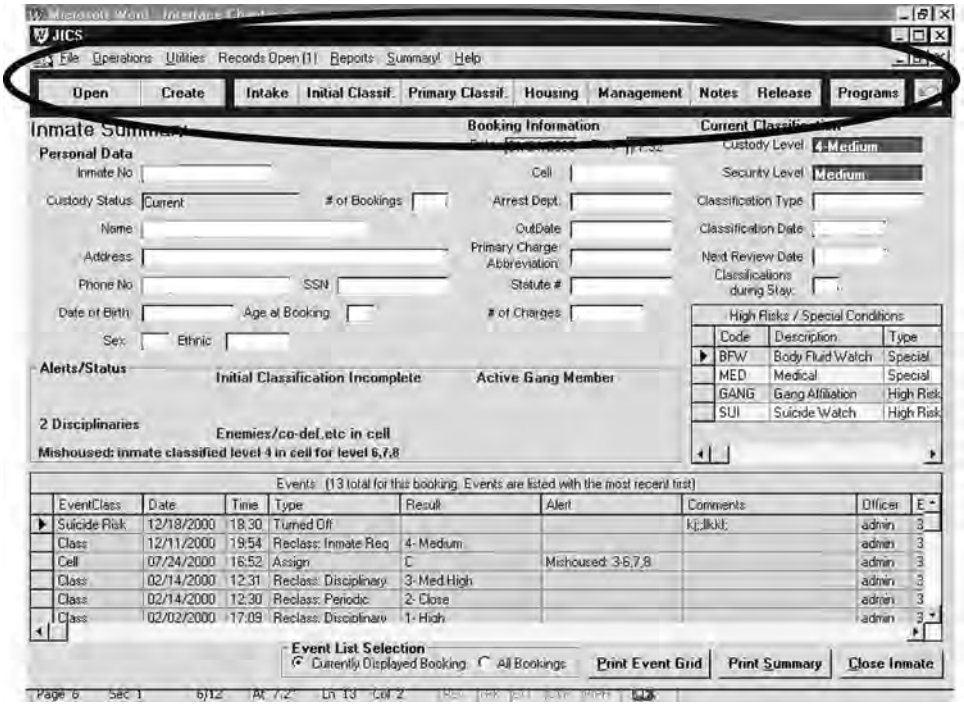


Exhibit 5–8. Toolbar on Commitment Order Screen (New Jersey DOC)

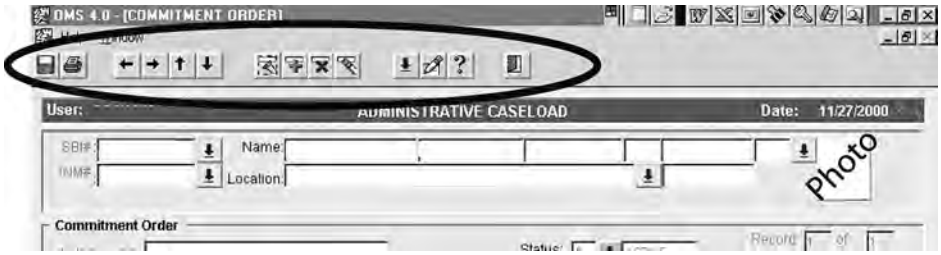


Exhibit 5–9. Tab Menu Options on Initial Classification Medical Observations Screen (Northpointe MIS)

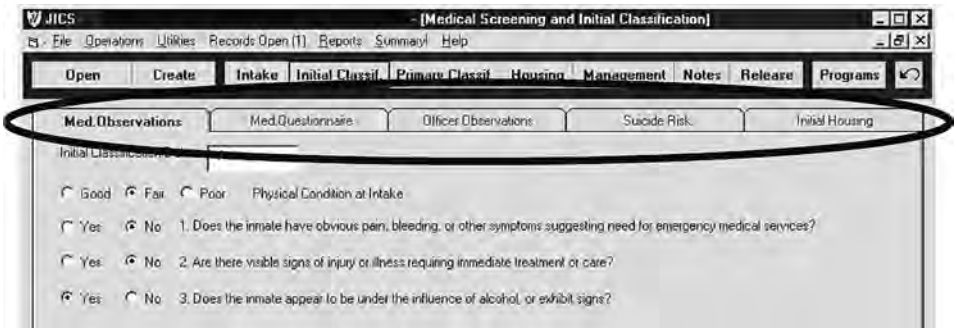


Exhibit 5–10. Popup Menu on Sentence Adjustment Screen (New Jersey DOC)

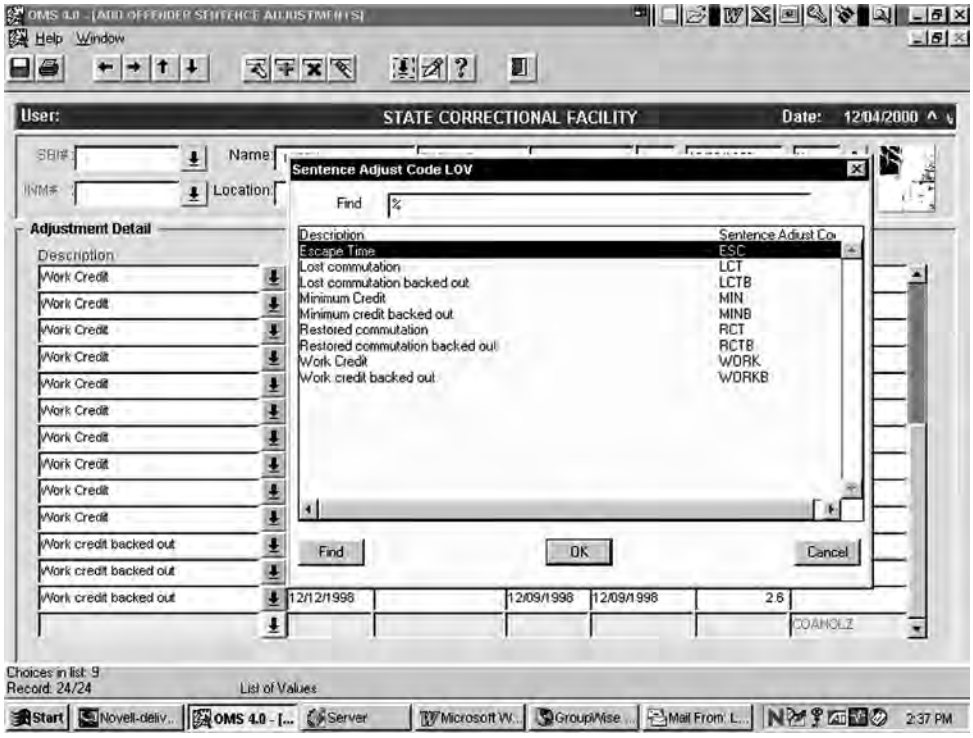


Exhibit 5–11. Custom Report Builder Wizard (North Carolina DOC)

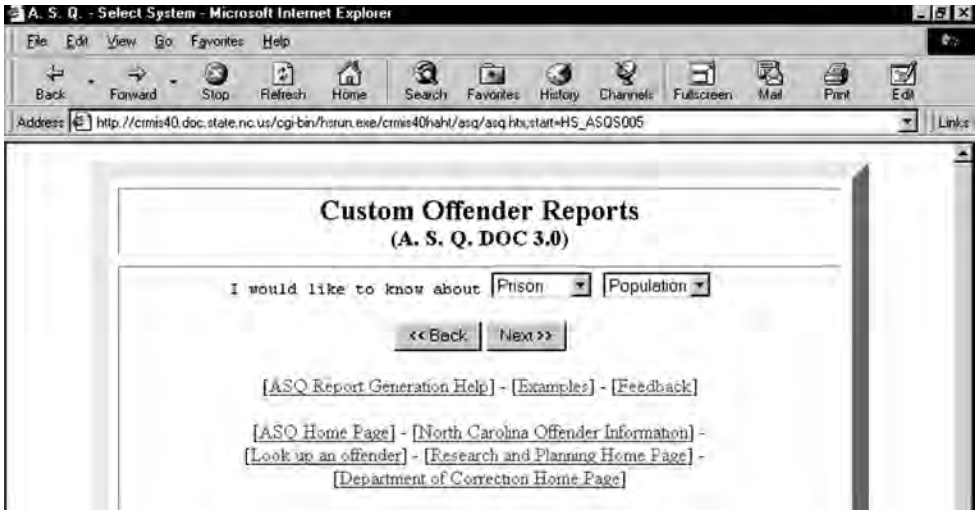
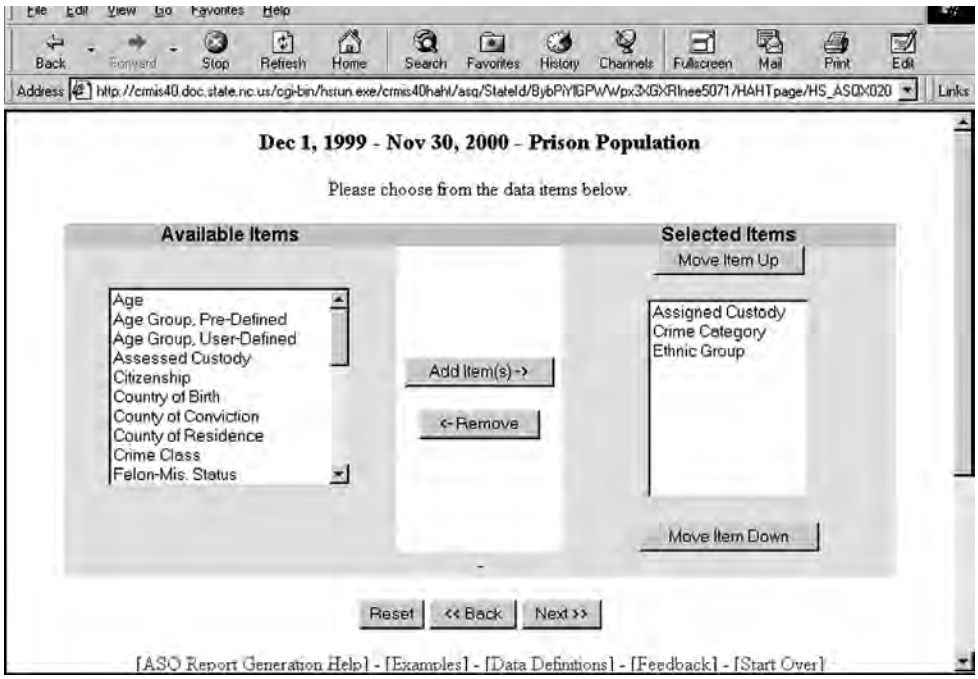


Exhibit 5–12. Custom Report Builder Add/Remove Variable Wizard (North Carolina DOC)



Note: Clicking "Next" from the screen shown in exhibit 5–12 loads the report wizard (exhibit 5–13).

Exhibit 5–13. Report Output Wizard Screen (North Carolina DOC)

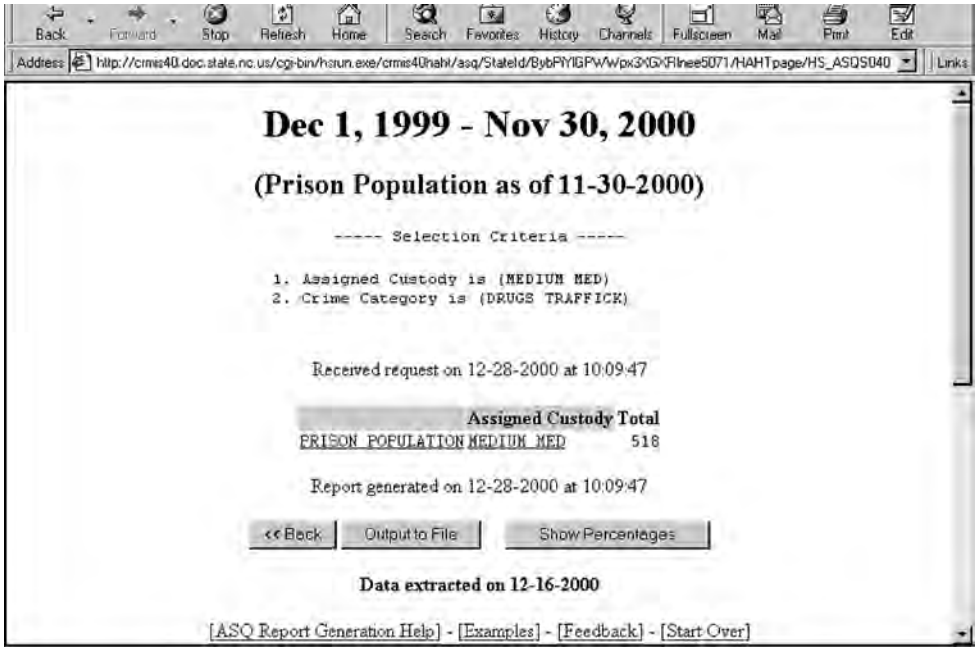
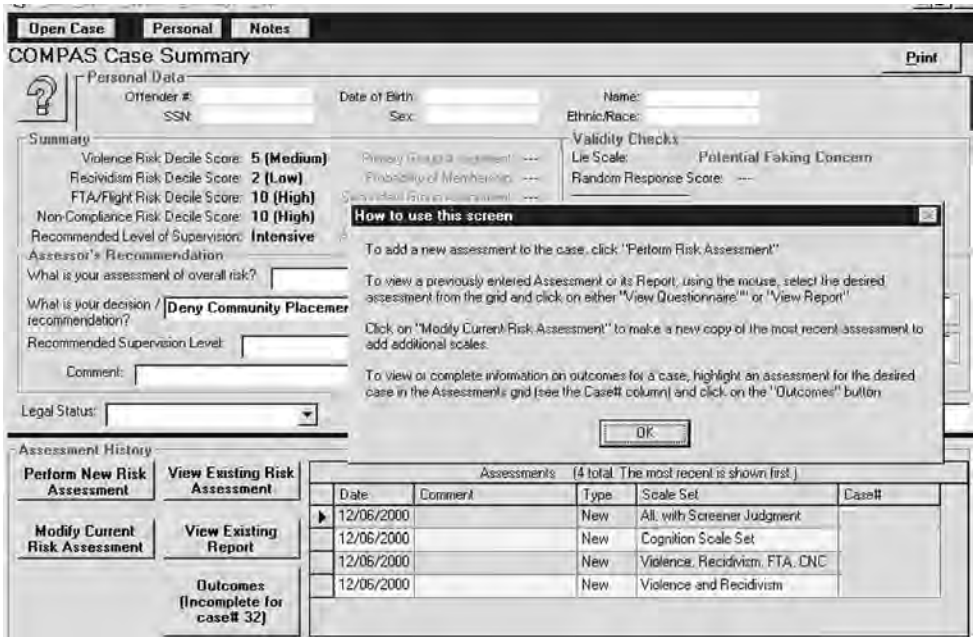


Exhibit 5–14. Offender Summary Popup Help Screen (Northpointe MIS)



Current user interfaces also offer user-friendly help to assist in screen or function navigation (exhibit 5–14). Each screen can have a "How to use this screen" guidance panel that can be turned off once the user no longer needs it.

Graphical and Object-Oriented User Interfaces

The basic characteristic of GUIs is the integration of many elements to facilitate working with the software. In simple terms, a GUI is the graphical representation of and interaction with all of the key elements (e.g., programs, data, and objects) on the screen. GUIs consist of windows, icons, menus, widgets (visual controls such as buttons, check boxes, and arrows), and pointers, as shown in the exhibits above. A range of "GUI-ness" can be programmed into an application's interface.

In the past few decades, GUIs have made computers more "people literate" instead of forcing users to become more computer literate. Humans, in general, appear to process information better visually than textually. To realize the advantages of computer technology, user interaction has become progressively more visual. The issue is not the graphic nature of the program but the level of visual interaction. Cooper (1995) opted to use the term *visual user interface* (VUI) to describe a major goal of software design. The ability of the unconscious mind to group objects into patterns using visual cues enables humans to process visual information quickly and efficiently. Understanding and applying this visual model of cognitive processing is a

key element of effective and efficient interface design. According to Mandel (1997), the main software design features that define a GUI/VUI include, in part, a bitmapped, high-resolution, color computer display and a pointing device (typically a mouse). Functions include the following:

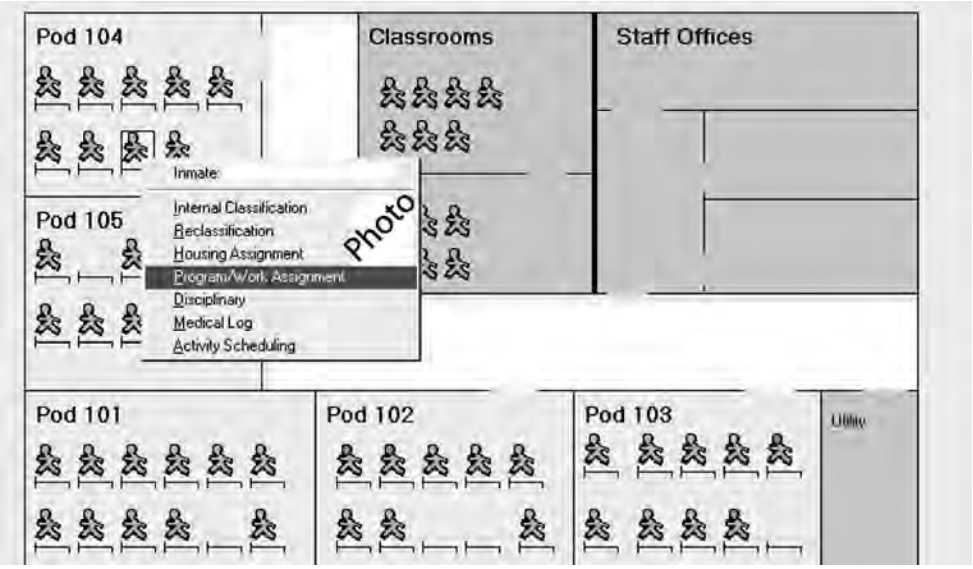
- Promoting interface consistency between programs.
- Displaying graphics and text on users' screens as they will appear when printed.
- Following an object-action interaction paradigm.
- Allowing direct manipulation of onscreen information and objects.
- Providing visual display of information and objects (icons and windows).
- Providing rapid visual feedback for each user action or task.
- Allowing flexibility between keyboard and other input devices.

A newer software interface incorporated into recent software applications is OOUI. A key characteristic of OOUIs is that they strive to remove the main drawback of GUIs, which is their application orientation. GUIs use graphical/visual representations of computer systems, applications, and data files to impart user-friendliness. OOUIs go beyond the simple look-and-feel aspects and focus on building user models that carry over from the real world of work tasks into the computer environment. The goal of OOUI is to allow users to concentrate on their tasks rather than focusing on how the computer system is set up or how to use software options and files to accomplish their goals.

OOUIs improve usability and functionality by enabling users to interact directly with every aspect of an application's UI. Users can thus manipulate objects on the screen instead of sifting through a maze of commands and pulldown menus. This direct interaction empowers users and has the potential to further enhance the usability of an application and improve productivity.

An example of an OOUI is shown in exhibit 5–15. The user sees a screen showing a housing area layout and clicks on a block or pod to see all inmates currently assigned to that pod. When the user clicks on an icon representing an inmate, a list of task options appears. That inmate's icon may also be dragged to another physical location (e.g., a classroom or a new housing assignment), which then automatically logs the event and the associated location, time, date, and officer's name in the inmate's record without the need for manual entry. These interfaces are also used in some new prison security systems' touch-screen software (e.g., for tasks such as monitoring the security status of doors from a systemwide screen schematic).

Exhibit 5–15. Housing Screen With OOUI (Northpointe MIS)



Conclusion

Computer technology drives UI design and the classification support software being used in prisons. One danger of recent advances is that they may force humans to use unnatural cognitive processes. Many problems with modern UI designs appear to originate from well-intentioned, intelligent, and capable software engineers' attempts to improve approaches that are inconsistent with how people think and operate. A refocus on the user's goals and working style seems to be the essence of recent advances in UI designs (Cooper, 1995). Whereas the user must focus on job-related tasks, the software designer must look beyond these to identify the user's goals. The design process for supporting prison classification should respond to the user's goals, patterns and needs, and requirements for data integrity, portability, and learnability.

These requirements may vary widely in different prison contexts and from application to application. The software designer must explore these user-centered stipulations. However, recently developed software innovations that support prison classification suggest that user-centered and graphical/visual interfaces should continue to be incorporated into MIS software, although these advances are clearly in a state of rapid evolution.

six
CHAPTER

Evaluating Classification MISs

Introduction

This chapter is intended to assist corrections staff in evaluating the comprehensiveness, functionality, and utility of their agency's current classification MIS components and in identifying areas of needed improvement. The automated classification and MIS features that are listed in the evaluation instruments (see below) may also be useful to prison administrators in developing system specifications for requests for proposals for the design or purchase of new MIS software and computer systems. Utility is the overarching concept that integrates all the functional components of the MIS. This chapter provides a practical guide for assessing these system components.

Before using this system assessment guide, selected groups of 6–10 users representing each of the various prison activities and organizational levels should act as respondents in gathering these data (exhibit 6–1).

For each function, a first step is to collect hard copies of all relevant computerized input and output documents and screens, navigation screens, manuals, data dictionaries, and code tables. The protocol questions below can then be used in assessment sessions. Each member of the assessment group should score the appropriate sections of the assessment instruments separately. The group can then discuss the reasons for any poor assessments and differences in scores.

Exhibit 6–1. Activities and Organizational Levels for MIS/Classification System Analysis

Activities	
• Records management	• External classification
• Medical/mental health	• Internal classification
• Initial classification	• Central office classification
• Reclassification	• Facility classification
Organizational Levels	
• Case processing staff	• Quality control managers
• Management control staff	• Strategic planning staff

System Assessment Guide: Definitions

Exhibit 6–2 presents scoring definitions for assessment of data support and integrity, functionality, timeliness, and UI.

Tabulating the System Assessment Score

Exhibit 6–3 is a sample system assessment guide. This form provides a format for entering the findings of the system reviewers so that the assigned numerical values can be manipulated to arrive at a single score for the system in question.

To use the guide, add the total score for each column and enter that score on the "Total column score" line in each column, including the "Total Row Score" column. Count the total number of assessment items scored in the column. If all items are scored, the total is 61. The number of items scored should be the same for each column. Enter that total on the "Total items scored" line in each column. To compute the average column score, divide the total column score by the total number of items scored (the average column scores will be between 1 and 3). Row scores may also be summed, with scores ranging from a minimum of 5 points to a maximum of 15 points, to provide insight into the adequacy of each system component. Total row scores between 10 and 15 indicate an adequate-to-good system component.

To compute the overall system assessment score, add each of the total column scores and enter the total on the "Total column score" line in the "Total Row Score" column. Enter the total number of items scored in the assessment on the "Total items scored" line (this should be the total items scored in the first column multiplied by 5, or 305 if all items are scored). Divide the total of the column scores by the total number of items scored to get the overall MIS classification components score (the overall score will be between 1 and 3). If all items in the assessment were not scored, acknowledge this when making the final assessment of the system.

Instrument Scoring and Definition Guidelines for Outputs and Reports

Outputs and reports require considerations that differ from those of the overall system's and should be addressed separately using their own rating scale, as shown in exhibit 6–4.

Tabulating Output/Report System Assessment Score

Exhibit 6–5 shows an output/report system assessment guide similar to the system assessment guide shown in exhibit 6–3. The form provides a format for entering the findings of the reviewers to determine a single score for the output/report system in question.

Exhibit 6–2. Scoring Definitions for MIS/Classification System Assessment

Score	Level	Definition
		Data Support Inputs
3	Comprehensive	Data inputs are comprehensive and meet all or most expectations/requirements.
2	Adequate	Data inputs are adequate or do not impair the effectiveness of classification decisions.
1	Insufficient	Data inputs are inadequate or seriously impair system effectiveness.
		Software Functionality
3	Good	System organizes decision-support data in an efficient, effective manner; readily displays data as needed. System prevents missing data or reduces or prevents inaccurate entries based on coded fields and automated logic.
2	Fair	Some data are organized efficiently/effectively; some decision-support data are readily displayed. System prevents most missing data; system prevents some erroneous data entry.
1	Poor	Keyed data are not efficiently organized/presented. Few checks exist on missing data or erroneous data entry.
		Timeliness
3	Good	System meets all or most expectations/requirements.
2	Fair	System meets some requirements and does not seriously hamper the completion of immediate tasks.
1	Poor	Many of the data are not provided in a timely manner, seriously impairing system efficiency.
		Data Integrity
3	Good	System meets all or most expectations.
2	Fair	Integrity of data for most part is good and does not seriously hinder the user.
1	Poor	Integrity of data is often suspect/unreliable/not current and may seriously impair user.
		User Interface
3	Good	System is easily understood; screens are well organized, easy to navigate, and well integrated with workflow.
2	Fair	System is understandable/relatively easy to learn, follows workflow, and is relatively easy to navigate.
1	Poor	System is not very understandable; system does not follow workflow and is not easy to navigate.

Exhibit 6–3. System Assessment Guide: MIS Classification-Related Functions

MIS Classification/Related Function	Data Support Inputs (1, 2, or 3)	Functionality (1, 2, or 3)	Timeliness (1, 2, or 3)	Data Integrity (1, 2, or 3)	User Interface (1, 2, or 3)	Total Row Score
		Intake				
Positive identification						
1. Master system ID search	___	___	___	___	___	___
2. Automated fingerprint match	___	___	___	___	___	___
3. Physical characteristics	___	___	___	___	___	___
4. Automated check of commitment/legal papers, court sentence, court return	___	___	___	___	___	___
5. Automated acceptance into or denial from state system	___	___	___	___	___	___
Booking						
1. Inmate demographics	___	___	___	___	___	___
2. Background data	___	___	___	___	___	___
3. Identify keep-separates	___	___	___	___	___	___
4. Identify detainers/warrants	___	___	___	___	___	___
Medical/mental health screening						
1. Initial medical/mental health screening	___	___	___	___	___	___
2. Suicide risk screening	___	___	___	___	___	___
Time computations						
1. Offense information	___	___	___	___	___	___
2. Sentence dates, sentence lengths, concurrent/consecutive, statutory minimum/maximum	___	___	___	___	___	___
3. Time credits at intake	___	___	___	___	___	___
4. Automated ongoing time-credit adjustments	___	___	___	___	___	___

5. Automated calculation of minimum and maximum outdates	___	___	___	___	___	___
External Classification						
Security classification						
1. Integrated criminal history and search	___	___	___	___	___	___
2. Seriousness of current offense automated	___	___	___	___	___	___
3. Escape history automated	___	___	___	___	___	___
4. Integrated sentence calculation	___	___	___	___	___	___
5. Other instrument factors	___	___	___	___	___	___
6. Automated public risk factors	___	___	___	___	___	___
7. Automated recommended classification assignment	___	___	___	___	___	___
8. Document override assignment	___	___	___	___	___	___
Medical classification						
1. Previous medical history brought forward	___	___	___	___	___	___
2. Current medical history inventoried	___	___	___	___	___	___
3. Medical classification assigned	___	___	___	___	___	___
Mental health classification						
1. Previous history brought forward	___	___	___	___	___	___
2. Previous suicide assessments and attempts brought forward	___	___	___	___	___	___
3. Current history inventoried	___	___	___	___	___	___
4. Mental health classification assigned	___	___	___	___	___	___
Program needs assessment						
1. Previously assessed needs and treatment history brought forward	___	___	___	___	___	___

Exhibit 6–3. System Assessment Guide: MIS Classification-Related Functions (continued)

MIS Classification/Related Function	Data Support Inputs (1, 2, or 3)	Functionality (1, 2, or 3)	Timeliness (1, 2, or 3)	Data Integrity (1, 2, or 3)	User Interface (1, 2, or 3)	Total Row Score
2. Presentence investigation information brought forward or inventoried	___	___	___	___	___	___
3. Criminal history (e.g., domestic abuse, drug/alcohol offenses) inventoried	___	___	___	___	___	___
4. Current needs assessment inventoried	___	___	___	___	___	___
Transfer assignment						
1. Automatically matches inmate to appropriate facility/facilities based on classification and available space	___	___	___	___	___	___
2. Alerts for transfer issues (e.g., medical holds, keep-separates)	___	___	___	___	___	___
3. Automatically schedules move based on transfer date, transport seat availability	___	___	___	___	___	___
4. Documents facility assignment, override if other than a matched facility	___	___	___	___	___	___
5. Flags inmate record as mishoused (if applicable)	___	___	___	___	___	___
Internal Classification						
Custody classification						
1. Inventories current offense seriousness, disciplinary history, gang status, age, substance abuse	___	___	___	___	___	___
2. Previous incident history automated; recommends classification assignment	___	___	___	___	___	___
3. Documents override assignment	___	___	___	___	___	___

Housing assignment						
1. Automatically inventories available beds based on policies	___	___	___	___	___	___
2. Automatically warns of keep-separate	___	___	___	___	___	___
3. Documents housing assignment, policy housing override	___	___	___	___	___	___
4. Flags inmate record as mishoused	___	___	___	___	___	___
Program/work assignments						
1. Matches programs to assessed needs	___	___	___	___	___	___
2. Tracks program openings; automatically schedules enrollment	___	___	___	___	___	___
3. Tracks program/work assignment schedules	___	___	___	___	___	___
4. Tracks enrollments, terminations, termination reasons	___	___	___	___	___	___
5. Automatically tracks/posts good time	___	___	___	___	___	___
Reclassification						
1. Tracks mitigating/aggravating circumstances	___	___	___	___	___	___
2. Automatically recommends classification assignment	___	___	___	___	___	___
3. Documents override assignment	___	___	___	___	___	___
Community/Prerelease Risk Assessment						
1. Parole eligibility date	___	___	___	___	___	___
2. Inventories community placement risk predictors	___	___	___	___	___	___
3. Recommended risk assessment	___	___	___	___	___	__

Exhibit 6–3. System Assessment Guide: MIS Classification-Related Functions (continued)

MIS Classification/Related Function	Data Support Inputs (1, 2, or 3)	Functionality (1, 2, or 3)	Timeliness (1, 2, or 3)	Data Integrity (1, 2, or 3)	User Interface (1, 2, or 3)	Total Row Score
			Release			
1. Release date confirmations	___	___	___	___	___	___
2. Automated victim notification	___	___	___	___	___	___
3. Institutional behavior summary passed to supervising authority	___	___	___	___	___	___
Total column score	___	___	___	___	___	___
Total items scored (61 if all scored)	___	___	___	___	___	___
Average column score (total column score divided by total items scored)	___	___	___	___	___	___

Note: See exhibit 6–2 for scoring guidelines.

Exhibit 6–4. Scoring Definitions for Outputs/Reports

Score	Level	Definition
		Availability
2	Yes	Answers the question: Are outputs/reports adequately available on the system?
1	No	
		User Interface
3	Good	Easy to generate, flexible; user can select/change parameters, change data order, change formats, and easily create ad hoc queries.
2	Fair	Moderately easy to generate; some flexibility in changing parameters, changing data order, supporting ad hoc queries, etc.
1	Poor	Not easily generated; no flexibility in format or content.
		Comprehensiveness
3	Good	All necessary data to produce informative outputs are present; meets most user expectations.
2	Fair	Most necessary data to produce informative outputs are present; does not seriously degrade report comprehensiveness.
1	Poor	Necessary data to produce informative reports are not present, severely limiting output usefulness/comprehensiveness.
		Timeliness
3	Good	Outputs are provided in a timely manner; meets all or most user time requirements.
2	Fair	Output timeliness meets some user requirements; does not seriously hamper task performance.
1	Poor	Outputs are not timely, seriously impairing efficiency.
		Data Integrity
3	Good	High level of confidence in quality, accuracy, and reliability of data for outputs.
2	Fair	Moderate level of confidence in quality, accuracy, and reliability of data for outputs.
1	Poor	Low or suspect level of confidence in quality, accuracy, and reliability of data for outputs.

Exhibit 6–5. System Assessment Guide: Outputs/Reports

Output and Report	Available (0 or 1)	User Interface (1, 2, or 3)	Compre-hensiveness (1, 2, or 3)	Timeliness (1, 2, or 3)	Data Integrity (1, 2, or 3)	Total Row Score
Automated Classification Support System Interface and Data Exchange						
1. State courts	___	___	___	___	___	___
2. Probation/parole	___	___	___	___	___	___
3. National Crime Information Center	___	___	___	___	___	___
4. Triple I	___	___	___	___	___	___
5. State computerized criminal history	___	___	___	___	___	___
6. Interpol	___	___	___	___	___	___
7. USCIS	___	___	___	___	___	___
Case Processing						
1. Inmate labels/barcode IDs	___	___	___	___	___	___
2. Schedules of inmates to be reviewed for classification/reclassification	___	___	___	___	___	___
3. Schedules of inmates to process for legislatively mandated initiatives (DNA, sex offender/victim notification)	___	___	___	___	___	___
4. Worksheets/forms for staff to complete	___	___	___	___	___	___
5. Rosters of program vacancies, inmates awaiting program assignments	___	___	___	___	___	___
6. Preprinted fingerprint cards	___	___	___	___	___	___
7. Rosters of inmates available to move	___	___	___	___	___	___
8. Housing vacancy reports	___	___	___	___	___	___
9. Inmate Face Sheet Report	___	___	___	___	___	___
10. Medical Intake Summary	___	___	___	___	___	___
11. Preparole reports: inmate's institutional adjustment	___	___	___	___	___	___

Operations Control						
1. Classification decisions overdue for review	___	___	___	___	___	___
2. Mishoused reports	___	___	___	___	___	___
3. Distribution of classification workload, overrides by caseworker, facility	___	___	___	___	___	___
4. Program-assessed needs vs. program/work assignments	___	___	___	___	___	___
5. Use of program resources: vacancy patterns, program misuse	___	___	___	___	___	___
6. Inmate Management Plan Performance/Progress Report	___	___	___	___	___	___
7. Transfer orders to be canceled	___	___	___	___	___	___
8. Exception reports including:						
a. Enemies in same prison	___	___	___	___	___	___
b. Data accuracy	___	___	___	___	___	___
c. Data omissions	___	___	___	___	___	___
d. Inmate releases without victim/sex offender notification, etc.	___	___	___	___	___	___
9. Number of inmates assigned to special housing, by type and facility	___	___	___	___	___	___
Management Control						
1. Staff resource use: caseloads, productivity	___	___	___	___	___	___
2. Bed resources: vacancy patterns, shortfalls, misuse	___	___	___	___	___	___
3. Transportation resources: empty seat patterns, unnecessary moves, percentage of transfers made as scheduled	___	___	___	___	___	___

Exhibit 6–5. System Assessment Guide: Outputs/Reports (continued)

Output and Report	Available (0 or 1)	User Interface (1, 2, or 3)	Compre-hensiveness (1, 2, or 3)	Timeliness (1, 2, or 3)	Data Integrity (1, 2, or 3)	Total Row Score
4. Use of program and work resources	___	___	___	___	___	___
5. Dormitory Capacity Report: actual vs. design; lawful capacity	___	___	___	___	___	___
6. Resource need projections						
a. Trends (numbers, types) special-needs inmates)	___	___	___	___	___	___
b. Trends in distribution of security classification types	___	___	___	___	___	___
c. Trends in education levels	___	___	___	___	___	___
Strategic Planning						
1. Population forecasting	___	___	___	___	___	___
2. Internal policy simulations (e.g., change in classification variables)	___	___	___	___	___	___
3. Staffing analysis/projections	___	___	___	___	___	___
4. Legislative impact analysis (e.g., mandatory sentences, determinate sentencing)	___	___	___	___	___	___
Total column score	___	___	___	___	___	___
Total items scored (42 if all scored)	___	___	___	___	___	___
Average column score (total column score divided by total items scored)	___	___	___	___	___	___

USCIS = United States Citizenship and Immigration Services (formerly Immigration and Naturalization Service)
Note: Total column score for availability is excluded from computation of overall outputs/reports system assessment score.

To begin, sum the item response scores (0 or 1) in the first column. Divide the total number of items in the assessment (i.e., 42) by the total column score to get the percentage of outputs and reports currently provided by the system. For the remaining four assessment columns, score only those items identified as available (having a score of 1). Add the total scores for each column and enter that score on the "Total column score" line in each column, including the "Total Row Score" column. Count the total number of assessment items scored in each column (42 if all items are scored). The number of items scored should be the same for each column. Enter that total on the "Total items scored" line in each column. To compute the total average column score, divide the total column score by the total number of items scored (the average column scores will be between 1 and 3).

To compute the overall outputs/reports system assessment score, add each of the four total column scores (user interface, comprehensiveness, timeliness, data integrity) and enter the total on the "Total column score" line in the "Total Row Score" column. Enter the total number of items scored in the assessment on the "Total items scored" line (this should be the total number of items scored in each of the four columns, 168 if all items are scored). Divide the total of the four column scores by the total number of items scored to get the overall outputs/reports score (the overall score will be between 1 and 3). If all items in the assessment were not scored, acknowledge this when making the final assessment of the prison system's comprehensiveness.

Conclusion

Using a comprehensive, structured, and weighted management information evaluation tool such as the example presented in this chapter results in a more objective assessment of the MIS, because this type of evaluation tool not only allows for a convergence of raters' opinions but also recognizes their varying degrees of expertise in each assessment area. For example, a team member who has an information technologies background may have a more comprehensive knowledge of the software's technical features, but may know less about workflow functionality, or team members who represent line users may be intimately familiar with workflow details, but may lack a strong background in the technical aspects of their MIS.

This evaluation method mitigates the risk that an assessment of a particular management information system will be dominated by any one discipline or perspective, resulting in an MIS that meets the needs of all stakeholders.

CHAPTER seven

Integrating Criminal Justice System MISs

Introduction

As noted in chapter 1, one of the main goals of criminal justice agencies at the federal, state, and local levels is information systems integration. Efficiency requirements and legislative mandates drive the need to share accurate and complete information in a timely and secure manner. Many agencies are developing plans for comprehensive, integrated justice information systems.

Integrated database systems improve the quality of classification and decision-making information by reducing redundant data entry; broadening access to information, which is especially useful for classification; enhancing timely access to data; capturing data when they are most likely to be accurate and complete; and cross-verifying data.

Interagency MIS integration generally refers to the ability to access and share critical data at key decision points. The functions normally considered in integration efforts between agencies include the following:

- Requesting information from local, regional, state, and national databases to assess the criminal justice status of a person (e.g., to determine whether a person is currently wanted by another jurisdiction, has charges pending in another jurisdiction, is currently under some form of correctional supervision, or has a criminal history at the state or national level).

- Transferring data automatically between agencies, contingent on actions taken in the originating agency (e.g., when an inmate is released or scheduled for release, the prison MIS should "push" information to the parole office for use in case management, intake, supervision, or risk assessment and classification).

- Retrieving information from other systems (e.g., populating a prison MIS with offender information captured in the jail or from court sentencing information).

Several barriers exist to information integration. Different databases may have inconsistent data structures. Data element coding and definitions may be irreconcilable. Many criminal justice agencies are responsible for their own data and may be reluctant to depend on another agency's data or may have concerns regarding data accuracy and integrity. Agencies often differ in their emphases on detailed information or highly specific data coding structures. Finally, the level of IT development

(e.g., computing hardware, analytical capacities, evolution of coding definitions, staff expertise) may differ across agencies.

This differential development has been documented in a recent history of criminal justice IT, which identified some major milestones in the evolution of IT in law enforcement. Law enforcement agencies were the first to automate and have generally maintained a lead in the development of IT. For example, in the 1960s, the FBI implemented the National Crime Information Center (NCIC), AT&T created the 911 system, and a national police telecommunications network was established. In the early 1970s, uniform crime reporting, parking ticket, and accident-reporting systems became widespread.

MIS integration projects to connect cooperating agencies must address organizational, political, and technical issues.

In contrast, only in the early 1970s did courts begin to automate information. Not until the 1980s did automated MISs emerge in a more fully developed form in corrections. Correctional agencies developed IT procedures at different times, and they have evolved at different rates, complicating the process of integrating and sharing data.

Systems integration must focus on specific target agencies and key databases. Perhaps the most important integration challenge for prison classification is between local, state, and national criminal history databases, including detainer and warrants databases (NCIC, computerized criminal history [CCH], LEIN, Triple I, automated fingerprint identification systems [AFISs], etc.). Other MIS interfaces pertinent to prison classification are courts, state jails, probation, and parole and victim notification/offender registration. At the lowest level, this may require an individual classification officer to make ad hoc queries to each database, download manual printouts, sift through the data, and enter pertinent information in the DOC MIS. Very fast new search engines can trigger fully automated simultaneous searches of each LEIN and CCH target site and then automatically populate the host MIS.

Interagency transfer of criminal justice data varies from state to state. Exhibit 7–1 describes the main information transfers between criminal justice agencies.

Ad Hoc System Interfaces

Because modern software offers more flexible operating systems, programming tools, and data-linking utilities, information sharing among agencies—even those using mainframe legacy systems—is increasingly feasible. For example, because most prison commitments pass through jails before intake, many demographic, jail behavioral, and classification data can be electronically transferred to prison intake. Court information, commitment orders, sentencing information, and offense information can be forwarded electronically to the prison database.

Integration of these systems often requires a special integration initiative. Ad hoc integration may use several data exchange methods based on available technology, integration objectives, data access limitations, and restrictions on licensed software. Techniques for data exchange include batch file transfers, transaction emulation,

Exhibit 7–1. Interagency Data Transfer Examples

Agency	From State Classification	To State Classification
National Criminal History System (NCIC), III, Wanted Persons	—	Out-of-state criminal histories; out-of-state wanted persons
State criminal history	Admissions, releases, identification queries	Criminal histories, wanted notices, identification responses
Sex offender registration	Registrations, changes of address	—
Parole	Inmate legal dates, prison performance	Parole board decisions, parole violations, discharges
Probation	Disciplinary history, needs assessment, program participation outcomes	Presentence reports (criminal history, military, work, educational, substance abuse); risk/needs-assessment scores
Courts	—	Commitment papers; orders to produce, of protection, for treatment; resolution of unclear dispositions
Prosecution	—	Warrants, orders to produce, detainers, confidential information
County jails	Disciplinary history, state ready intake, prison adjustment, special management (medical status, mental health status, warrants, inmates out to court)	State ready notification, disciplinary histories, special management flags, medical status, mental health status, warrants
Local police	Release information and location	—
Youth corrections	—	Case file on transfers from youth to adult facility
USCIS	Notification of foreign-born inmates in custody	Notification of USCIS status

USCIS = United States Citizenship and Immigration Services (formerly Immigration and Naturalization Service)
NCIC = National Crime Information Center

remote database access, remote procedure calls, and asynchronous message transfer. Techniques for translating data codes and formats and exchanging them among incompatible systems are equally varied and complex. Integration efforts in many criminal justice information systems are one-of-a-kind efforts, providing little in the way of reusable software or methods (Leuba, 1999).

Jail MISs are probably the most diverse in the criminal justice system. Jails, even within a single state, use more than 20 MIS packages created by numerous vendors. Information formats and code-table values differ considerably among agencies, making electronic data exchanges difficult. Two approaches facilitate systems integration. The first, a long-term approach, is a disciplined effort to standardize data formats and coding tables. This requires reworking existing software at a cost of considerable time and expense and is often met with little enthusiasm from vendors or jail administrators.

A less daunting, less expensive approach is for the state oversight agency to identify a smaller set of standard classification data elements to be passed by each jail to a central repository (a shorter term ad hoc solution). For example, the Michigan Office of Community Corrections developed a standardized, objective jail classification. Standard reporting fields and code values were developed in a standard electronic reporting format. Using state community corrections funds offered to each county and local jail as an incentive, each of the several jail software vendors developed compatible data conversion routines to extract the standard reporting elements and convert them to the standard reporting format. This resulted in common data transfer from each jail to the state central data repository. The primary uses of Michigan's system, thus far, have been data analysis and policy planning. However, these data could be made available to prison intake and reception centers through an interface with the DOC MIS. South Carolina is embarking on a similar project with the specific objective of integrating the centralized jail data into its MIS.

Although ad hoc interfaces are probably the most practical at the present time for many criminal justice MISs, some agencies are planning for and in some cases attempting to implement architecturally integrated MISs. According to the Search Institute at the time of writing, at least 31 states had institutionalized the integration of criminal justice information systems. The SEARCH Web site *(www.search.org)* provides an updated profile of states' information and database integration efforts. SEARCH has designed a model of the organizational structure and functions for state IT governance boards. The key implementation features are listed below.

Organizational issues

- Include key stakeholders in criminal justice information.
- Include an executive sponsor.

Functional issues

- Develop a strategic plan that sets priorities.
- Identify and break down barriers to integration.
- Coordinate funding for the strategic plan.
- Define data requirements (who needs what information, why it is needed, and who should enter it).
- Establish standards for hardware, software, and data structures.

Nationally, the Office of Justice Programs (OJP) has initiated efforts to coordinate activities of criminal justice standards-setting bodies to develop a national consensus on technical and data integration standards. OJP's goal is to develop the National Integration Resource Center to coordinate local, state, and federal data integration efforts to upgrade the comprehensiveness of the classification data that are used in jails, prisons, and other agencies.

Data Integration Principles

Several principles can be incorporated into state integration efforts:

- Data are best captured at the originating point rather than reconstructed "downstream."
- Data should be captured once and used many times to leverage existing resources and improve data quality.
- The integrated system should be driven by the operational systems of participating agencies and should not be separate from agency systems.
- The capabilities for automatic query should be constructed so that, for example, additional automatic reporting can be implemented easily when additional data requirements are identified.

Agencies remain free to seek their own IT solutions. Adoption of integration standards throughout criminal justice may motivate software developers to incorporate these standards into their applications so that individual MIS modules, regardless of agency or vendor, could be integrated using standardized data definitions, formats, and communication links. Modular interface designs use well-defined standard interfaces and interchangeable components to facilitate the reuse of both software designs and standard interface techniques. Each step in this direction lowers costs and shortens implementation schedules.

Integration Components

Leuba (1999) identified three components of the integration architecture for criminal justice information systems:

1. *Workflow:* The focus of initial integration design efforts on workflow characteristics of participating criminal justice agencies across organizational boundaries.

   Workflow analysis establishes the "how" and "what" of information flow between agencies. Several factors must be considered. In some instances, specific data from a source system need to be handed off to a destination system at a single point in time (e.g., intake). In other instances, data may be required on a recurring basis, based on a "triggering event" such as a court appearance. In this scenario, updates to the court system related to a scheduled hearing automatically trigger the transmission of a specific message to the prison system. This message would contain the data required to retrieve or update an inmate's record in the prison system database and add the pending court hearing to this record.

Data exchange interfaces may be unidirectional or bidirectional. Prison information systems may send or receive data. For example, an inmate's transfer to a county jail may require the electronic transfer of data from the prison to the local jail system. Workflow analysis assists in determining interface direction, content, and events that trigger the transfer of data.

2. *Data:* The reconciliation of data formats and code values on a system-by-system, case-by-case basis to enable communication among the processes of the criminal justice system.

   Data analysis is also critical in systems integration. Data standards are evolving to facilitate future systems integration. A recent example is the set of NCIC 2000 Standards and Specifications, which ensure that AFIS, criminal history, inmate management, and related systems data at the federal, state, and local levels are defined and formatted consistently and clearly. As older prison MISs are enhanced or replaced with new technology, new standards may help ensure that data interfacing can be accomplished without excessive financial resources for data conversion and mapping. More broadly based technology standards for data exchange, such as extensible markup language (XML) data standards, can also facilitate the exchange of data and documents between justice agencies.

   Data standards are still evolving, and although they offer a long-term strategy for systems integration, they do not always solve short-term problems. Most current prison MISs were designed and implemented without considering data-exchange requirements. Data attributes (e.g., length, type) and coded values for reference tables tend to vary significantly among applications based on the age of the system, the system designers' preferences, and the technical environment.

   In this kind of heterogeneous environment, mapping data and defining conversion rules between systems can be a monumental task. Whereas mapping race codes may be relatively straightforward, mapping other fields such as charge tables and address fields is often particularly onerous. In many instances, this involves the resolution of one to many mappings between code-table values. Other challenges include (1) finding key identifiers that are continually present in a consistent format to match the records of source and destination systems and (2) addressing missing or optional data in the source system that are required by a receiving system. The data analysis and conversion processes are frequently hampered by limited or nonexistent data dictionaries and the general weakness of data documentation, particularly in older mainframe systems.

   The importance of data analysis as a factor in system design cannot be overemphasized. These requirements should be specified before defining the technical architecture. Some developers tend to select middleware/software tools first and then analyze systems integration requirements. This is risky because the tools selected may not be appropriate for meeting system requirements.

3. *Technology:* The definition of the means for data interchange techniques among case-processing database systems and the definition or standardization of messaging architecture for actual data transfer. The messaging architecture includes specifications of message triggers, formats, contents, and delivery methods for intersystem communications.

   The technology component must be well aligned with the workflow and data analysis components. There are many technical approaches to the development of push, pull, and query strategies for system interfaces. Several commercially available middleware packages facilitate implementation of systems interfaces. Middleware supports the processing, conversion, and routing of messages between systems using asynchronous transfer data packets. If the need for data transfer is immediate, tools are available to support near real-time data transfer. An adequate network infrastructure is also required to support this type of interface.

   The development of data warehouses strengthens prison classification because of the broader range of data they provide. Middleware can support both data warehousing and direct system-to-system interfaces. Data warehousing typically involves the replication, conversion, and storage of data from multiple justice agency databases to a single integrated database that can be queried by all participating agencies. A data warehouse approach moves criminal history data into a single repository to eliminate multiple queries with different UIs across several systems. Once agreement has been reached on what data can and should be shared among agencies, triggering events can be defined to send data automatically from law enforcement, prosecutorial, court, and correctional systems to the criminal history data warehouse. Middleware can transform the data and create a consolidated database for query access. Some prisons and larger jails (e.g., those operated by the Los Angeles County Sheriff's Department) are using middleware and relational database technology to enable the cost-effective development of this type of system integration strategy. On one hand, these technologies make it easier to maintain and enhance the interfaces as the systems environment changes. A customized development approach, on the other hand, can be cost prohibitive and difficult to maintain.

   Middleware can also enable direct system-to-system interfacing, which requires data translation and formatting of messages between different technical environments. Source systems must send data based on predefined triggers (e.g., release or scheduled court hearing). The middleware must then reformat and route the data to the receiving system using a communication protocol understandable to that system. This approach ensures that data are already staged and available for the receiving system in a usable format before they are needed.

   Another approach is to retrieve data dynamically from the source system as needed. For example, at intake, an identifier can be used to search foreign systems for data related to that inmate. This approach can be difficult to implement

Systems integration is evolving beyond simple sharing of structured data among database applications. Technology exists to exchange documents, mug shots, and other kinds of data. This evolution further strengthens the databases on which classification relies. The use of industry standards is particularly important in this arena.

when technical environments differ across agencies, and it may also introduce system performance problems. Dynamic retrieval of data from foreign systems usually occurs only when the source and destination systems use similar technical environments (e.g., two Oracle databases or two mainframe MISs).

Classification user requirements, mediated by the existing technical environment, should drive the selection of a systems integration strategy. On completion of the classification workflow and data analysis, the integration strategy can be determined and middleware and other technical tools selected. The use of a system development methodology to design, construct, test, and implement systems interfaces is important to the success of these projects.

Integration Implementation Strategies

Successful implementation of information systems integration requires careful planning and effective organization. Multiple jurisdictions must articulate a vision, define the scope and objectives of their project, establish an effective organizational structure, recruit initiative sponsors, secure funding, develop comprehensive strategic plans, and address technical and policy issues to enable the sharing of information within and among agencies. Several noteworthy examples of interagency classification data integration projects are discussed below.

An automated identification verification system is often a great practical advancement. In the past, states fingerprinted admissions, sent the fingerprint cards to the state's centralized data bank, and eventually received notice of the inmate's identification. Now several states send fingerprints electronically to the data bank and receive identification almost immediately. In Colorado, DOC has worked with other agencies in the Colorado Integrated Criminal Justice Information System to create a system in which mittimus information is sent electronically directly from the Judicial Department's information system to the DOC system. Warrants soon will be sent directly from the district attorneys' information system to DOC. New Jersey has an automated, standardized, statewide objective jail classification (OJC) system. Statewide integration of classification data elements has several key advantages:

- Automatic notification of state offenders' admission to and departure from any county jail in the state.
- Standardized discipline reports on state inmates in county jails.
- Standardized and uniform dates for DOC objective classification.
- Statistical and characteristic reports on state inmates housed in country jails.

Design and implementation of the New Jersey OJC took 3 years and required the cooperation of many agencies. The New Jersey County Jail Wardens Association established the OJC User Requirements Committee to work with the DOC Classification Bureau and the Administrative Office of the Courts Information System

Division to create the instrument design and software requirements. The committee adapted an objective jail classification instrument that had been developed with NIC funding. The state's Criminal Justice Information Systems Policy Board coordinated funding for the project. NIC provided assistance for the design phase, for training, and for validation of the instrument.

New York's Statewide Criminal Justice Data Dictionary project was a similar statewide integration process that began in 1984. The common data dictionary, now in its eighth edition, has almost 400 data elements. The New York State Division of Criminal Justice Services Integrated System Development Unit (DCJSISD) coordinated the project, which involved more than 20 state and local criminal justice agencies organized into three functional area teams (law enforcement, courts, and corrections) and a liaison committee consisting of the leaders of each area team and representatives of DCJSISD. Each area team identified data elements that were collected by its agencies and required transfer to other agencies. Each agency described its definition and use of each element. Following agreement on a draft dictionary entry, the members took the entry to their agencies for approval. The entry was then submitted to the other two area teams for review and approval. The liaison committee resolved outstanding issues, and the new element was entered into the dictionary. Participating agencies were free to define data elements according to their own needs, provided they transferred the elements to other agencies in conformance with the data dictionary definitions.

Conclusion

The fundamental advantage of database integration from the perspective of classification decisionmaking is increased accessibility to key data elements. Cross-verification of risk and needs data is also aided by the ability to transfer data electronically. Thus the emergence and development of integrated interagency databases have tremendous potential for strengthening the integrity and coverage of classification data, which in turn strengthens the predictive validity and usefulness of prison classifications.

Individual criminal justice agencies can no longer simply maintain their own isolated MISs without considering integration with other agencies. The criminal justice system is a continuum of offender-based information processes that operate more efficiently when linked. The traditional approach of maintaining disconnected and independent databases has consistently led to information processing bottlenecks. Even when agencies have automated their internal case management systems, transferring a case to the next agency in the legal process often involves preparing and submitting paper-based case files containing many redundant forms.

Information systems integration seems inevitable. This process holds particular promise for prison classification and all other forms of criminal justice data integration and analysis. Classification and risk assessment units in jails, prisons, probation, and parole are in a particularly key position in this process because they have

traditionally been the focus of information integration efforts. In this familiar role, classification and assessment have already grappled with many of the issues that are involved in assessing data integrity, verification processes, and the integration of diverse data elements when making high-risk decisions regarding offenders.

CHAPTER eight

New Directions in Classification Factors and Information Content

Introduction

This chapter presents current directions in the selection of key classification variables that should be contained in MIS databases, addresses how prisons are searching for better classificatory factors, and introduces the complex topic *content validity of classification.* A more powerful MIS allows the use of more classificatory variables and thus increases the information content of a classification. Past litigation has implied that all relevant classification factors should be included in correctional classifications (Brennan, 1987b; Tonry, 1987). The implication is that critical classification factors should not be overlooked. It is incumbent on the MIS to provide the key classification factors. To the degree that key variables are missing, classification validity, usefulness, and effectiveness are impaired.

Content validity is a major foundation of effective classification. Classification system designers inevitably must decide which variables should be included. Content validity is ultimately based on the purpose(s) of a classification. Each type of prison classification process (e.g., external, internal, treatment, reentry) relies on factors that are relevant to its unique purposes. As noted previously, the trend toward multiple purposes and more comprehensive classifications inevitably demands a broader coverage of key variables. This vastly increases the role of the MIS.

Contribution of the MIS to Classification Effectiveness

As correctional agencies adopt more comprehensive, multidimensional classifications for internal management, treatment purposes, and community reentry, the role of the MIS and IT will expand dramatically. The simpler classifications of the past 20 years have profoundly underutilized the enormous memory and analytical power of today's computers. However, the newer, more comprehensive classifications, almost by necessity, rely more on the computing power that makes complex classifications feasible. An early example of this trend was Megargee's Minnesota Multiphasic Personality Inventory (MMPI) typology, which incorporates computations that are impossible for a human being. Megargee and colleagues developed a special computer program to help staff match inmates to the most appropriate class. Without this algorithm, staff simply are unable to classify a new offender into the correct profile type. This system has 10 separate classes, defined in a multidimensional space of 10 factors.

"Content validity of classification" refers to the coverage of key risk and criminogenic factors. Adequate content validity is a scientific and ethical prerequisite to the use of classification to guide critical human decisions. Decision errors are more likely when key classification factors are missing.

Prison MISs support more effective classification systems in the following ways:

- A powerful automated MIS allows more comprehensive coverage of classification factors. This requires faster search engines, speedier data retrieval, more extensive data storage, computation of scale scores, summarization and identification of inmate profiles, and graphical outputs for simplified profile representation.

- In more complex prison classifications, matching prisoners to their profile types is too demanding for human computation. The present manual system relies on the simplicity of current offender classification systems. To find "best fit" classifications, the analytical capacity of the MIS is critical in computing probabilities of membership scores, computing distances and matching measures, and summarizing this information to relieve staff of its computational requirements.

- Prison managers require powerful state-of-the-art procedures to monitor the quality of classification work. Monitoring the quality and fairness of classification decisions is important for political, ethical, and public safety reasons. The analysis of error patterns and the quality of classification decisions is feasible only with computers. Thus, procedures to analyze error patterns (e.g., signal-detection methods and receiver-operator characteristics analyses) are likely to become widespread and perhaps politically required to monitor and demonstrate the validity of classification procedures. These procedures place intense computational demands on the MIS (Brennan and Harvey, 2000; Mossman, 1994; Quinsey et al., 1998). Classification managers will require powerful MIS software to conduct error analyses to reveal false positives and negatives, override rates, hit rates, and so on. Computational power is also needed to produce appropriate statistical indices to monitor the accuracy of a prison's classification procedures.

Criticisms of Prison Classification Data Coverage

As noted elsewhere, many articles in the prison classification literature reveal concerns about the poor content validity (information coverage) of prison classification systems (Brennan, 1987b). For example, MacKenzie (1988) argued that the justice models of classification had a devastating impact on content validity, producing classifications with poor coverage of salient variables that provided little guidance in managing or treating offenders. Sechrest (1987) similarly complained that most correctional classifications suffered from narrowness, oversimplification, and an absence of theoretical guidance.

The current oversimplification of classification in corrections has occurred for several reasons, including failure to appreciate the full range of classification purposes, weak guidance from criminological theory, inadequate validation research, and the belief that "nothing works" regarding treatment (Brennan, 1987a; Quinsey et al., 1998; Sechrest, 1987). In addition, the "just deserts" correctional philosophy widely

adopted during the 1980s emphasized a narrow set of legalistic and behavioral variables and restricted the use of relevant social and psychological factors (Austin, 1983; Palmer, 1992). Unfortunately, the simple classifications that resulted were almost useless for inmate management, treatment, and case planning.

Finally, the unavoidable practical constraint of staff overload forced prisons to design oversimplified systems. Specifically, information overload was such a serious problem that most prior prison classifications were designed for very simple and efficient manual processing, thus the coverage of variables was very restricted. The emergence of powerful computerized information processing has removed this constraint. Several powerful classification algorithms are now available that incorporate multiple classification risk and needs factors into classification decisions, imposing almost no stress on staff (see chapter 9).

Classification Types, Goals, and Approaches

The discussion below is based on the following types of prison classifications:

- External classification and reclassification.
- Internal classification for management and programming.
- Classifications to predict violence and dangerousness (which may have implications for both external and internal classification).
- Classifications for community reentry, treatment, and rehabilitation.

The potential range of risk and needs factors in prison classifications is enormous. This review is selective and guided in part by the prisons that were examined in this study. However, the discussion also includes exciting developments not evident in these systems, such as the work of Quinsey et al. (1998) in classification of violent offenders, Cooke's (1998) work on behavioral classification, and other recent developments.

The desire of different prison systems to create their own customized classifications was evident in the classification variables used in each prison system. Each adopted slightly different philosophies, correctional goals, training and theoretical backgrounds, and so on, to produce unique systems. The prison systems consistently demonstrated the trend toward more comprehensive internal classifications, broader sets of social and psychological factors, and a renewed interest in treatment and reentry classifications.

External Classification

The goals and purposes of external classification systems were consistent across prisons, but they were written and operationalized in different ways. External classification guides decisions regarding the security level and the institution to which

an inmate is assigned: minimum-security inmates should be assigned to minimum-security facilities. However, in many prisons, the need for special programs or services is also factored into external classification. Related purposes involve the safety of the community, facility, staff, and other inmates. Violent, predatory, and high-risk offenders are identified and separated from nonviolent offenders and assigned to settings that have a higher security level.

Typical classification factors used to assess security levels include the following:

- Severity of current offense.
- Severity of prior convictions.
- Escape history.
- History of violence.
- Length of sentence.
- Time to parole eligibility.
- Pending charges and detainers.
- Disciplinary history.
- Risk-group membership (e.g., gangs).
- Stability factors (work, residential, family, etc.).
- Substance abuse problems.
- Current age.

These factors are numerically scored and summed to give a simple additive scale. The scale then uses "cutting points" to separate high-, medium-, and low-security inmates. Typically, two cutting points (or threshold levels) are applied to produce three classes, although applying three cutting points to produce four security levels is simple. Thus, a high cutting point can be used to separate "max 1" from "max 2" prisoners. In most prisons, these decision thresholds are established on logical grounds rather than by using statistical analyses. Thus, the prevailing current practice is to choose cutting points on policy grounds so that serious and repeat violent offenders are placed in high security.

Some external classifications (e.g., in Oregon, Missouri, and other states) distinguished *public risk* from *institutional risk,* and different risk factors were used to compute scale scores for both aspects of risk. Institutional risk involves higher weighting for a history of disciplinary infractions, serious violent infractions, and other factors thought to predict internal disciplinary problems and threats to safety.

Public risk involves higher weighting for factors that are believed to predict escape or recidivism, particularly regarding dangerous and violent crimes.

In most prisons, the variables needed for external classifications were available electronically in the MIS/database to minimize data retrieval burdens on staff. Many classification instruments were scored by computer to save staff time and minimize errors.

In the prisons reviewed by the research team, both discretionary and mandatory staff overrides of the formal point scales were allowed. These overrides were based on various anomalous, or unusual, factors identified through observation of or interviews with inmates. Typically, overrides are monitored and reviewed by supervisory staff.

Generally, external classification required assessment of a range of treatment needs, including mental health, medical, dental, and other program or treatment needs. In some external classification systems (e.g., in Florida), features such as medical, mental, and dental health were incorporated explicitly into the external classification rules because of limited access to these services in specific facilities.

Reclassification

Reclassification aims to update an inmate's initial security placement periodically, based on behavioral adjustments, recent disciplinary behaviors, and the need for specific program/work options. The prevailing reclassification approaches rarely use personality, attitudes, or other criminogenic factors but rely on simple checklists that largely replicate the initial external security classifications. The advantages of this approach include simplicity, ease of use, minimal data entry and retrieval requirements, and an emphasis on recent behavior.

The approaches to reclassification in most systems (e.g., in Washington and Colorado) relied strongly on the initial external classification level, with minor modifications of the instrument to emphasize recent behavior. In Colorado, for example, classification factors were divided into part A (history of institutional violence, recent institutional violence, severity of current offense, number of current convictions, offenses resulting in death, and severity of prior convictions) and part B (detainers/pending charges, escape history, number and type of disciplinary reports, and time to parole eligibility). Several of these factors (e.g., time to parole eligibility, recent violent and disciplinary behaviors, details of pending charges/detainers) are dynamic, which gives inmates an opportunity to reduce their custody levels.

Internal Classification

Internal classification has more complex purposes and requires a more comprehensive set of classification factors than external classification. The purposes of internal classification involve the management, treatment, and work assignment of inmates within a facility. Thus, needs assessment, treatment and housing assignments, inmate compatibility, and interpersonal relationship styles take priority over

risk assessment and are needed to match inmates with compatible cellmates. Successful matching of cellmates is important because of crowding, the use of double-cell housing (even in situations requiring higher security), and the use of dormitories for prisoners requiring lower security. Thus, internal classification differentiates prisoners for safe, trouble-free housing at a common custody level and for productive work assignments.

All prison systems in this study had developed and implemented internal classifications. Internal classifications emerged because of the inadequacy and subjectivity of prevailing reclassification decisions and weak guidance from external classification for housing, program, and work assignment decisions (Hardyman et al., 2002). The problems of inappropriate commingling, biased housing decisions, poor compatibility of cellmates, and endless internal transfers created the need for this kind of classification.

Most of the prisons visited for this study had computerized data entry, retrieval, tracking, and monitoring for internal classifications. More comprehensive coverage of classification factors creates a greater burden on staff for data collection. The MIS must store all key risk and needs factors used in the internal classification. Data coding procedures are also more complex, as many of these classification factors refer to specific historical time periods (e.g., in New Jersey, disciplinary histories were considered for the previous 2-year period), and the MIS coding procedures must be sensitive to these time frames and the dates of infractions.

Prison systems have developed their own unique approaches by prioritizing purposes and selecting different classification factors for their internal systems. New Jersey, for example, prioritized the identification of inmates appropriate for therapeutic communities, mental health programs, and programs for emotionally disturbed or disabled prisoners. They also emphasized the need to expand work opportunities to increase the number of inmates provided with appropriate work assignments. Another priority was to identify and appropriately house inmates with affiliations to specific gangs or other risk groups.

Florida developed a detailed inventory of risk and needs factors to drive internal classification (described in chapter 4). Florida prisons addressed the difficult topic of responsiveness and aimed to assess inmates' critical attitudes, motivation to participate in programs, and potential to gain from participation (i.e., restructuring potential). Yet, providing appropriate housing and compatible cellmates and matching inmates' risks/needs to program and work assignments were the fundamental purposes guiding that system.

Washington had similar basic goals but chose different classification factors. They emphasized case management as a tool to improve matching, gain control over inmate movement and discipline, reduce escape risk and other destructive behaviors, and guide the development of programs to be more responsive to offenders' needs. They adopted the LSI as a classification system for both risk and needs

assessment and also used other instruments that focus on violence and interpersonal relationships (e.g., the Buss-Durkee Hostility Inventory).

Internal prison classification systems, despite having common goals, are designed in different ways by different prisons. Different risk and needs inventories, such as AIMS, LSI, and the Prisoner Management Classification (PMC) are thus selected to support this task. The nation's prisons are using a wide range of experimental internal classification approaches. Because classifications for treatment and programs are linked to the design of internal classifications, the work of Palmer (1992), Sechrest (1987), Quinsey et al. (1998), and others is highly relevant in designing these internal classifications.

Another reason for the wide array of internal classification approaches is the absence of theory to guide the selection of variables. Relevant theories of offender classification would provide coherent guidance in designing new approaches for both external and internal classifications.

Some interesting theoretical developments have been reported in the criminology literature that may improve the design of classification systems in prisons and other correctional agencies. These include criminal lifestyle theories, theories of desistance from crime (Sampson and Laub, 1995), criminal opportunity and routine activities theory (Horney, Marshall, and Osgood, 1995), psychopathy and criminal personality theory (Brannigan, 1997; Hare, 1996; Gottfredson and Hirschi, 1990), social learning theory and crime (Andrews and Bonta, 1994), and genetic marker theory (Carey, 1989). Developments based on this research will likely suggest more powerful classification factors. Thus corrections may be at the threshold of dramatic improvements in selecting classification factors that will yield substantial improvements in prison classifications.

The discussion below describes some major design efforts in internal classification procedures that are being introduced into current practice in prisons.

AIMS—assessing prisoner behavior. AIMS, first developed in 1983 for use in the Federal Bureau of Prisons, continues to attract much attention in today's prisons as an internal classification method (NIC, 2001). The information content of AIMS originally consisted of five behavioral scales constructed through factor analysis: aggressive-psychopathic, manipulative, situational/normal, inadequate/dependent, and neurotic/anxious (Quay, 1987). These scales allow each prisoner to be classified into five behavioral categories according to his or her highest scale score.

AIMS has several advantages for internal classification purposes. First, it assesses observable inmate behavior using simple checklists. These behavioral checklists have high relevance for prison classification because they were developed with the input of prison officers and therefore have good face validity (i.e., they make logical sense to the user). Second, prison staff, who have had the most frequent interactions with prisoners, do the ratings. Third, it is relatively efficient because classification can be done quickly without imposing a great burden on staff time.

Fourth, it uses direct observations of behavior. This contrasts with most clinical tests (e.g., the Millon inventory, MMPI), which focus on attitudes, personality characteristics, motivations, and other nonbehavioral factors.

However, several critical problems are associated with AIMS. The first concerns its factor structure and factorial validity. Some confusion exists about exactly what is assessed by AIMS. Cooke (1998), for example, reported that the first two dimensions (aggression and manipulation) tend to collapse into a single factor that he called antiauthority. A second problem is that the neurotic/anxious factor has an ambiguous factor structure and is not clearly interpretable. These definitional problems were also found in the use of AIMS for internal classification in both the Missouri and South Dakota prison systems (NIC, 2001). A third and the most serious problem of AIMS is its procedure for classifying an inmate using the highest scale score. This confuses a scaling dimension with a "category" of persons. For example, a prisoner could score high on two or more scales with insignificant differences between these scores. AIMS forces the inmate into the highest scale score and ignores other behavioral tendencies. As Cooke (1998) noted, this problem is not just a theoretical quibble but has profound implications for predictive validity. A fourth problem is low predictive validity. At least one recent study has found an unacceptably high false-positive error rate for the aggressive category (NIC, 2001). A fifth problem, which has led to a reconsideration of its use for internal classification in some prisons, is an unacceptably poor interrater reliability.

Despite these problems, the AIMS approach to behavioral assessment is simply too important to abandon. There are several ongoing efforts to improve the system. A major research effort in Scottish prisons reevaluated AIMS. The result was a modified factor structure and improved interrater reliability and predictive validity (Cooke, 1998). Cooke's new scale is referred to as the "Prison Behavior Rating Scale." The new factor structure found three as opposed to five fundamental factors: (1) antiauthority, which collapses Quay's first two dimensions; (2) anxious/depressed; and (3) dull/confused. These refinements are consistent with decisions by American prisons to simplify the system by using three categories rather than five (NIC, 2001). The interrater reliabilities in the Scottish approach indicated that the intraclass correlation coefficients were .78, .68, and .59, respectively, for the above scales, indicating that improvements are still needed, particularly for the dull/confused scale.

However, a profoundly important finding in Cooke's work was that the antiauthority scale—the strongest and most reliable scale—had a significant correlation with Hare's Psychopathy Checklist. The importance of this finding is that prison staff may be able to use behavioral ratings to identify psychopathic prisoners who represent the highest risks to both the institution and the community.

PMC/CMC System. Another method that continues to attract attention as an internal management classification and treatment programming system is PMC. Several prisons are actively developing PMC as an internal classification. PMC was originally developed in Wisconsin to provide decision support for probation services

(Lerner, Arling, and Baird 1986). Following various revisions, it was renamed "CMC" and widely disseminated with support from NIC (see Hardyman et al., 2002).

This system has broad coverage of risk and needs factors and consequently requires an extensive interview with each offender. The data handling and processing tasks are fairly demanding. CMC assesses background factors; criminal and social histories; family factors; relationships with staff, inmates, and peers; and a range of attitudinal and psychological factors. It has both a risk assessment scale and a longer component that deals with treatment needs. An important feature that is often missing in structured interviews is an assessment of postrelease plans. In addition, following the semistructured interview, staff provide several behavioral ratings on the demeanor, attitude, behavioral traits, and subjective evaluations of the seriousness of some needs. This is reminiscent of the postinterview ratings used by Quinsey et al. (1998) in their correctional assessment interview of prisoners.

Comprehensive information gained in this process is used to assign an offender to one of four classes: limit setting, casework control, selective intervention (treatment and situational), or environmental structure. Prisoners assigned to the first two classes are viewed as more aggressive, presenting more serious management problems. Prisoners assigned to the latter two classes are viewed as less aggressive and disruptive, requiring lower levels of supervision.

The interview takes approximately 45 minutes (depending on interview style) and, in addition to requiring intensive training and creating data handling burdens, has contributed to considerable implementation problems. During the past decade, many correctional systems introduced PMC and then abandoned it because of time and cost (interviewing and scoring demands) issues. In addition, some agencies use only the risk assessment scale and abandon the more comprehensive social and psychological section.

Notwithstanding these problems, various evaluation studies have suggested that CMC can successfully identify predators, separate predators from victims, and reduce institutional disciplinary problems (Hardyman et al., 2002; Harris, 1994). Another strength of CMC is its detailed case planning, programming, and management guidelines for each offender, which are of considerable value to correctional officers.

Behaviorally based internal classifications. Behavioral assessment for internal classification remains popular and was chosen as a strategy by several prison systems in this study (e.g., in Florida and New Jersey). In contrast to AIMS, behavioral assessments do not use psychometric measures or formal scaling instruments but rely on simple behavioral measures (e.g., disciplinary infractions, program and work performance, in-custody behavioral interactions with staff or other inmates) already commonly used in prisons. These measures are highly relevant to managing and processing inmates In addition, some behavioral classification systems use simple additive point systems to suggest changes in housing or program arrangements.

Behavioral assessments, like reclassification procedures, typically focus on a unit of time (e.g., the past 12 months) and thus are legitimately regarded as dynamic measures of adjustment.

Common classification factors used in this approach include level and frequency of aggression against staff or other inmates, seriousness of misconduct, days spent in disciplinary segregation, gang affiliations, and current program and work performance. In some prisons, these factors are augmented with others, such as age and seriousness of current offense.

Megargee's MMPI typology. This clinical system has been used as an internal classification (although not in any of the prison systems that participated in this study). It was originally introduced in 1977 to categorize offenders into 10 types derived by cluster analysis of MMPI personality profiles. Megargee and Carbonell (1998) claimed that more than 100 separate evaluation studies had demonstrated that this typology makes useful contributions to offender management and treatment decisions in federal, state, and local correctional organizations.

Much current effort is directed at refining this system. New developments include a new standardization based on the MMPI–2 and new rules for classifying offenders according to the 10 types. In addition, Megargee and colleagues are modifying this system for female offenders (Megargee and Carbonell, 1998). Their research appears to confirm the same basic types as those in the initial development (Megargee and Bohn, 1979).

The 10 types have neutral names (e.g., Able, Baker, Charlie) to minimize bias associated with descriptive labeling. Able, for example, is impulsive, manipulative, charming, and often able to adjust well to institutional life. Baker is inadequate, anxious, and underachieving; lacks sociability; has authority conflicts; and so on. Treatment implications have been developed for each type (Megargee and Bohn, 1979).

Considerable controversy surrounds the performance and validity of this system. Different researchers report different levels of interrater reliability, and there is doubt about whether some specific types (e.g., Baker, Delta, George) can be identified reliably or even exist (Van Voorhis, 1994). Van Voorhis reviewed the degree to which different types have been replicated by various studies. The conclusions are mixed, and only a few types seem to have been replicated unequivocally by other researchers. These studies also have not supported one another in their findings regarding predictive validity; some found good predictive validity and others found no significant results.

The problems of Megargee's MMPI typology appear to originate in the initial cluster analytic procedures used to create the basic profiles. To create the typology, Megargee used Ward's cluster analysis, which is known to artificially fragment populations into too many clusters. These artificial boundaries, by definition, are unreliable and contingent on the sample being used. Second, the Ward procedure for estimating the true number of clusters (i.e., a graph of error levels in successive

clustering solutions) is known to be inefficient (Brennan, 1980; Milligan, Soon, and Sokol, 1983). The Ward clustering procedure used by Megargee has been superseded by more advanced and effective methods (Gordon, 1999; Jain and Dubes, 1988).

Despite these controversies, the Megargee typology represents a profound advance in using powerful data classification algorithms on clinical personality data. It is one of the few systems that is solidly based on modern classification technology and sound psychometric measurement. Its major deficiency may be the lack of internal explanatory coherence within each type stemming from the possibility that the clinical personality dimensions are of limited relevance for building an explanatory or treatment-relevant classification. Specifically, the typology's basis in personality may miss other profound causal factors and factors that are linked specifically to criminal behaviors (e.g., social learning, criminal cognitions and beliefs, criminal opportunities). The most profound deficit of the Megargee system is that its content validity is too narrow and is focused on mental health rather than on criminal behavior.

Classifications To Predict Violence and Dangerousness

The need for improved classification risk factors for predicting violence was a dominant theme in all the prisons examined in this study. For example, Washington is experimenting with the Buss-Durkee Hostility Inventory, and others are experimenting with AIMS to identify and classify violent prisoners. Nationwide, prison officials and policymakers are constantly seeking improved risk predictors for violence and disciplinary problems. The traditional risk factors for predicting violence have generally focused on prior criminal history of violence. Although these are clearly still useful, they are being augmented with other risk factors to improve predictive accuracy and reduce classification errors. This section reviews some new directions in identifying and classifying violent inmates and predicting their behavior.

Assessing and identifying the psychopath. Much recent assessment research focuses on prisoners characterized by psychopathy. This group appears responsible for a high percentage of violent crime and rule violations while incarcerated (Hare, 1996; Rice, 1997). The development of classification tools to identify psychopaths is an area of considerable activity, and new practical approaches are emerging (Fishbein, 2000). These kinds of data will inevitably enter into prison MIS databases. This category is likely to be extensive and hard to measure but critical in its implications for crime control, institutional order, and public safety.

The basic personality dimensions underlying psychopathy (aside from criminal activity) include impulsivity, risk taking and sensation seeking, manipulation and deceitfulness, absence of guilt, a callous attitude toward victims, anger/quick temper, dominance, and an ability to charm others. Currently, the most widely used assessment instrument is Hare's PCL. This has been demonstrated to predict both violence and recidivism. Drawbacks include the time required for a full assessment (about 2 hours) and the advanced interviewing skills required.

Briefer approaches to assessing these dimensions are also emerging. For example, several of the personality dimensions underlying psychopathy (e.g., impulsivity, sensation seeking, absence of guilt) can be measured by shorter paper-and-pencil tests that may offer more efficient approaches for identifying selected personality aspects of psychopathy (Bandura, 1996). For example, a factor analytic scale adapted from Bandura's dimensions, as used in the COMPAS system, found that these measures were reliable and valid (Brennan and Oliver, 2000). Additionally, as noted earlier, the first factor of the AIMS behavioral checklist correlated significantly with Hare's PCL among Scottish prisoners (Cooke, 1998), suggesting that psychopathy may be identifiable using brief behavioral ratings. However, no final consensus exists in this area of assessment, and PCL apparently continues to be the dominant instrument.

Physiological measures and psychopathy. Another direction in assessing psychopathy uses physiological measures (Fishbein, 2000; Raine, 1993). Exciting progress is being made using physiological responses (e.g., skin conductance, heart rate changes in certain situations, stress levels, anxiety levels) that appear to differentiate psychopaths from other offenders (Raine, 1993). The psychopath tends to experience less fear, anxiety, stress, and emotionality than others and evinces other physiological differences under certain test conditions. Fishbein (2000), in reviewing these approaches, argues that these approaches may have considerable diagnostic usefulness.

Additionally, some theories suggest that specific cognitive functions (e.g., decision-making, impulse control) mediate between underlying physiology and observable behaviors. The key issues appear to involve cognitive functions linked to self-control. This supports the widespread assertion in the criminology literature that low self-control forms the basis for a theory of criminal personality (Gottfredson and Hirschi, 1990).

Other new approaches to assessing psychopathy focus on everyday cognitive functioning (e.g., daily planning, problem solving, daily functioning, the ability to be aware of and monitor social behavior, and control over emotional arousal [Royall, Manhurin, and Gray, 1992; Wilson 1997]). Fishbein (2000) suggested that these tests are inexpensive, easy to administer, effective in identifying psychopathy, and useful for guiding cognitive rehabilitation programs. Typically, these tests measure behavioral performance in problem-solving situations, memory and planning ability, and the ability to shift mental patterns in new situations.

The possible emergence of efficient and more valid tests for psychopathy has important implications for inmate housing decisions, surveillance decisions, treatment planning, and reducing violence and discipline problems. These tests also have the potential to reduce or control violence and recidivism when prisoners are released to the community. A limitation is that many of these tests require more than 1 hour to complete. They also may require administration by highly skilled technicians, preferably psychologists, who may be unavailable or too costly in many correctional contexts.

Classification for Reentry Into the Community

Several prison systems in this study were actively experimenting with classifications for community reentry, case management, and rehabilitative arrangements. These purposes differ from those of internal and external classifications and require an even broader coverage of both risk and needs factors, although they do overlap with the earlier types of classification. Similar classification factors may be used for internal and community reentry classifications. Washington, for example, has given careful consideration to using LSI, AIMS, and CMC for better internal control as well as reentry classifications.

The boundary between internal classification and reentry classification is blurred because they share a focus on treatment, interpersonal relations, social skills, personality, risk of violence, and so on. They may also utilize overlapping risk and needs factors (Hardyman et al., 2002; Van Voorhis, 1994). The systems described in this section can be used for internal classification or reintegration purposes.

Several of these assessment systems are offered by private companies as proprietary software, including LSI (Multi-Health, Inc.), the Jesness Inventory (Multi-Health, Inc.), COMPAS (Northpointe, Inc.), and the Millon Clinical Multiaxial Inventory (National Computer Systems, Inc.). Some of these systems are offered as standalone software packages in which a complete classification system is integrated into an underlying MIS database (e.g., COMPAS); others are offered as automated testing services.

LSI. This is the most widely used instrument for reintegrating offenders into the community. For example, it is routinely used by both Washington and Colorado DOCs. In Washington, it is being evaluated both for use in internal classification and for guiding case management and supervision plans for transition to community living (NIC, 2001). LSI was originally developed in Canada and implemented by the Ministry of Correctional Services in Ontario to assess the risk and needs of probationers and parolees (Andrews and Bonta, 1994).

LSI consists of 54 items that assess recidivism risk and 10 subscales dealing with criminal history, education/employment, financial problems, family/marital, accommodation problems, leisure/recreation problems, peers, alcohol/drug problems, emotional/personal, and attitudes/orientation. Each item is scored as 0 or 1. The 54 items are summed to provide an overall risk score. A semistructured interview format is used to collect these data. On average, each interview requires a minimum of 45 minutes and often more than 1 hour. The semistructured format requires considerable training to achieve acceptable consistency across raters. A substantial literature exists on LSI, much of it using Canadian samples. Key issues regarding this assessment tool are described below.

Reliability. The overall scale (54 items) achieves an acceptable internal reliability, producing α coefficients ranging from .70 to .80 across studies. Subscale reliabilities are less impressive. Some of these fall below .50 into an unacceptable range (Arens et al., 1996). Interrater reliability is of perhaps greater importance for LSI

and other instruments that rely on semistructured interviewing (which allows interviewers to judge more subjectively). Few studies have examined interrater reliability for LSI. One early study by Andrews (1982) reported interrater correlation coefficients between .80 to .94. However, some researchers have expressed concern regarding the interrater reliability of LSI (O'Keefe, Klebe, and Hromas, 1998), and research is clearly needed on LSI with American samples.

Factorial validity. Factorial validity examines whether the rational or theoretical structure of a test's scales is replicated when empirically tested, usually using factor analytic procedures. Although LSI is presented as containing 10 specific scales, several factor analyses of the full set of LSI items have failed to replicate these scales. For example, Arens et al. (1996), in a Colorado study, failed to replicate the expected factor structure. In a subsequent study, O'Keefe, Klebe, and Hromas (1998, p.4) concluded that "there was no support for any underlying dimensions of the LSI. Three studies, involving five separate analyses, aimed at establishing the underlying structure produced no concordance of findings." Thus, the proposed theoretical structure of LSI appears in doubt, and the factorial validity of its subscales has not been established.

Predictive validity. The predictive validity of LSI is generally assessed for the overall scale instead of the specific subscales because of concerns about the reliability of the subscales (O'Keefe, Klebe, and Hromas, 1998). Studies by Canadian researchers report impressive predictive validity for various samples and outcome behaviors (Andrews and Robinson, 1984; Loza and Simourd, 1994). Yet, when switching to American samples, these impressive results have not always held up. For example, for Colorado offenders, LSI was not predictive of either program termination status (r = .10), or institutional misconduct (r = .16) (Philbrick, Gati, and Guisti, 1993). O'Keefe, Klebe, and Hromas (1998) had similarly mixed results in predictive studies of parole outcomes and community corrections offenders and could only partially replicate the Canadian findings.

Buss-Perry Hostility and Aggression Scale. At the time of this study, Washington was using the Buss-Perry Hostility and Aggression Scale as part of its community placement classification procedure. The scale assesses several dimensions of hostility and aggression (e.g., verbal aggression, physical aggression, anger, and hostility) (Buss and Perry, 1992). Several versions of the scale have been developed since its first appearance about 30 years ago. The most recent version, published in 1992 as the *Buss-Perry Aggression Questionnaire,* is a refinement of the earlier version, which had 66 true/false items.

This scale aims to identify the aggressive, angry, and socially hostile inmate. It thus can contribute both to internal classification and to assessments of the risk of violence in a community placement. Unfortunately, little research on the predictive validity of this instrument in correctional settings has been reported.

Reliability. The internal consistency reliability of the scale is satisfactory. The four scales range from a low α of .72 to a high of .85. The total scale has an impressive α of .89.

Validity. This scale has strong concurrent validity; that is, it correlates highly with impulsivity, competitiveness, and assertion. Additionally, these hostility scales correlate significantly with the COMPAS violence scale in a study of jail prisoners (Brennan and Oliver, 2000), providing evidence of concurrent validity for both instruments.

COMPAS. This automated risk/needs instrument was designed for community reentry decisions and case management planning. It assesses four risks (violence, recidivism, community failure, and flight) using logistic and ordinary least squares regression models. It uses a broad range of social, psychological, and behavioral risk factors to produce a detailed inmate profile. Additionally, it includes several internal validity tests to assess data integrity. An embedded-lie test identifies offenders who may be misrepresenting their responses. The instrument also includes a test of the coherence/incoherence of each prisoner's data. Both of these validity tests use signal-detection techniques to pinpoint data quality problems (Brennan and Oliver, 2000).

COMPAS has been statistically validated in prisons, probation, jails, parole, and community corrections. National norms have been developed. A user manual describes these design features and various reliability and validity studies (Brennan and Oliver, 2000).

Although superficially similar to LSI, COMPAS has a different focus, different prediction methodologies, different risk and needs factors, and four separate risk equations rather than a single overall risk scale. Its comprehensive set of risk factors appears to have both practical and theoretical relevance for community reentry. Its risk and needs factors include criminal involvement; history of violence, community failure, and noncompliance; criminal associates; substance abuse; residential instability; financial problems; criminality of family; criminal cognitions; criminal opportunity/lifestyle; residence in a high-crime area; vocational and educational problems; and others.

Jones (1995) argued that risk assessment systems in corrections should be guided by current criminological theory and should include theoretically relevant risk factors. COMPAS has adopted this strategy and includes several theoretically based criminogenic dimensions from several major theories of crime (e.g., social learning, criminal lifestyle and criminal careers, social control and criminal cognitions). This strategy should increase its relevance for treatment interventions. These scales include the following:

- Criminal opportunity, based on Sampson and Laub's (1995) lifestyle theory of criminality and routine activities theory.

- Socialization failure, based on Lykken's (1995) theory of sociopathy.
- Criminal cognitions, based on Bandura's (1996) theory of moral disengagement.

Reliability. The COMPAS scales have high internal reliabilities, with Cronbach α around .80 for the four main risk scales and .70 for most of the needs and background scales. However, two of the needs scales have weak reliabilities and are undergoing further development. Test-retest reliability studies are in progress and thus have not yet been published.

Factorial validity. Data from several jurisdictions have shown that the factorial structure of COMPAS conforms to expected theoretical structures. The factor analyses indicate that all scales are unidimensional, with significant factor loadings in theoretically expected directions (Brennan and Oliver, 2000).

Validity. Considerable evidence of concurrent, construct, and predictive validity has accumulated in more than 20 validation studies in different jurisdictions, including jails, prisons, and parole departments, mostly in the United States. For example, the COMPAS violence risk scale correlates significantly with the Buss-Durkee aggression scales. A recent study of New York probationers found that the predictive validity of the COMPAS recidivism scale (using a 12-month followup) reached highly significant levels (using signal detection and receiver operator characteristics [ROC] analysis), with an area under the curve (AUC) close to 0.80. This is comparable to the results of Quinsey et al. (1998) in predicting recidivism with their time-consuming VRAG inventory (Brennan and Oliver, 2000).

A potential drawback to any comprehensive assessment is the time required to complete an interview, which typically averages 45–60 minutes. However, the COMPAS software allows an agency to select only those scales of high interest to the agency. This flexibility allows customization of the assessment to the assessment staff's time available without losing validity of the key risk scales.

Weakness of Theory in Internal and External Classification

A basic problem with the construction of databases for most current external and internal classifications and most classifications for reentry is that they make almost no use of criminological theory. Correctional classification to date has been dominated by an atheoretical approach (Jones, 1995; Palmer, 1992). Bonta (1997) notes that most existing risk assessment and classification methods are driven by blind empiricism; that is, the selection of classification factors is based on guesswork, conventional wisdom, or data-driven empirical correlation with selected behaviors (e.g., parole outcomes, recidivism). There is virtually no attempt using coherent or theory-based explanations to justify the selection of classification factors.

There is a limit to this atheoretical approach, and at some point, the need arises to transcend these classifications and incorporate coherent theoretical guidance in selecting effective classification factors to improve predictive power and guide interventions. Bonta (1997) argued that most atheoretical classification systems reach an upper limit of predictive validity with correlations around .30. Another profound disadvantage of systems with weak explanatory coherence is that they offer little guidance for interventions or treatment.

LSI, COMPAS, and the Jesness and Millon inventories are exceptions. Each uses explicit theory. The first two use criminological theory, and the latter two rely on psychological theory. As criminological theory evolves, criminal justice databases will probably become "smarter" by including more powerful explanatory factors. These systems will be able to purge irrelevant "noise." This evolution should have a profound impact on improving both the predictive power and intervention guidance offered by correctional classification systems.

Conclusion

Although there is movement toward more comprehensive classification systems and more powerful predictive and explanatory factors, most prison systems have a long way to go in the search for optimal classification factors. In addition, the more powerful memories and fast search procedures of today's computers and MISs will enhance the ability of classification procedures to use multiple factors and the increased information content of emerging classification routines. This increased technical capacity should promote the discovery and use of more powerful classification factors.

The examination of numerous classification factors in current prison systems suggests that prison classification is in an exploratory phase of searching for more comprehensive and effective classification factors. This contrasts with almost two decades of simplistic and reductionistic classifications that relied on a severely limited or restricted selection of factors (MacKenzie, 1988; Palmer, 1992). Corrections may be at the threshold of considerable development in the discovery of more effective prison classifications. The convergence of richer and more informative databases, coupled with a great rise in the analytical power of computer systems, should accelerate the design of effective prison classifications.

CHAPTER nine

Advances in Analytical Capacities of IT To Strengthen Prison Classification

Introduction

This chapter examines technical innovations in the analytical capacities of IT that may have profound implications for developing more effective prison classifications. In terms of the productivity framework offered in chapter 2, this chapter focuses on the effectiveness (validity, quality, and utility) of classification. The analytic capacity of an MIS is a major factor in supporting the quality and power of a classification. However, IT is an enormous field, with recent developments in artificial intelligence, data mining, pattern recognition, and several other statistical techniques that have great relevance to classification and decisionmaking.

Prison managers do not have to be statisticians or software experts to make use of these emerging technologies. In fact, many of these techniques are more intuitive than conventional statistical procedures and offer exciting possibilities for improvement by using prison databases to achieve higher quality and more valid classifications. The days of simplistic linear additive systems that have dominated current prison classification techniques may soon be relegated to history as profoundly more powerful classification techniques become available.

It is beyond the scope of this chapter to review *all* of the newly emerging technologies that may contribute to prison classification. Only a few of these were being explored in the prison systems examined in this study. This chapter narrows the focus to developments with the highest relevance to prison classification and adopts a user perspective in discussing new analytical technologies. Specifically, this chapter is written not for statisticians, computer programmers, or hardware specialists but for the correctional managers who wish to understand the options, directions, and policy strategies offered by these new technologies. This chapter avoids statistical and computer jargon but describes how these new techniques can help correctional agencies to reach more valid classification decisions.

Some of the new analytical tools that are addressed in this chapter had already been examined or even implemented in the prison systems studied in this project. For

example, the following tools were actively under development in the identified prison MISs:

- Data warehouses (comprehensive, integrated MIS databases).
- OLAP.
- Artificial intelligence and expert systems for new classification systems.
- Data-mining technologies.

These technologies were mentioned in the South Carolina prison MIS plans for shifting from "Old World" to "New World" data architectures and for introducing more advanced analytical technologies. Other prisons (e.g., in Colorado, South Carolina, and Washington) were introducing data warehouses, OLAP, and advanced or next-generation applications in their MIS planning processes.

Data Warehouses: Integrated Databases

The data warehouse is an innovation of the 1990s with strong implications for the way data are organized to support classification and other complex decision-support functions. The fundamental purpose of the data warehouse is to provide data that are comprehensive, clean, reliable, and relevant to the decision task at hand. The data should be verified for the following characteristics:

- Correctness (high likelihood of being true).
- Consistency and reliability (i.e., there is only one version of each data element).
- Relevancy (the selected data elements pertain to management problems and decisions).

Additionally, the data warehouse software concept typically links the database to powerful but easy-to-use state-of-the-art data analytic tools for OLAP, data mining, and producing management reports efficiently.

Importance of the Data Warehouse for Classification

The data warehouse may profoundly strengthen classification by greatly improving the basic data on which classification procedures are based. It provides more comprehensive coverage of key risk factors and related classification variables at a higher level of integrity than an ordinary MIS. Integrated data from jail, court, and prosecutors results in more complete classification profiles. Additionally, the verification and validation procedures of the data warehouse should produce data that are more accurate and reliable, which in turn should improve the quality of any classification based on the data.

Evolution of the Data Warehouse

In the 1970s, the name *Decision Support System* (DSS) described knowledge-based software systems that supported upper management decisionmaking and operations monitoring. DSSs attempted to integrate easy-to-use but powerful analytical tools with an integrated correctional database to address management and policy problems. Report-generation software was included in these systems in the hope that prison managers would produce and design their own statistical management reports. It was assumed that the analytical procedures were simple enough that prison managers and administrators could use these systems with minimal dependence on data processing specialists. This concept, however, was perhaps overly optimistic: middle managers in many correctional systems had difficulty using these systems. Factors included inadequate time, sophistication, and technical skills to achieve good or useful results. Typical complaints were that the software was difficult to use and that the canned reports were inadequate.

As a result of these failures, newer data management and analytical software called Executive Information Systems (EISs) emerged. These further simplified the computational and analytical procedures compared with the earlier DSS procedures. Again, a key assumption was that this approach would encourage correctional administrators to develop sufficient competence to analyze prison data to monitor, predict, forecast, and produce management reports. However, problems emerged because of the inadequate relevance or breadth of the available databases. Although the analytical software was becoming more useful, the databases often did not contain the full range of data needed for organizational processes and units. The data warehouse concept emerged as an attempt to improve the coverage of data elements compared with that offered by DSS technologies.

The following considerations are relevant to the content of a comprehensive database in the data warehouse concept:

- *Operational data versus policy-relevant data:* Current operational data, including classification data, are often inadequate for managerial and policy analysis purposes because the data cannot easily capture the major trends in a prison population or address certain kinds of managerial queries. To offset this inadequacy, many of the data elements entering the data warehouse are transformed and summarized so that complex queries can be handled more readily.

- *Time horizon of data:* In the traditional environment of a transactional processing system (TPS), many classification decisions are made online; therefore, data have to be accurate at the moment when a decision is being made. However, a data warehouse has a longer time horizon, typically 5–10 years. Operational TPS databases typically cover less time, and cases are often purged when a prisoner leaves the system. The longer time horizon of the data warehouse allows more insightful analysis of population changes, forecasts, and trends; statistical simulations of the impact of new classifications; and so on.

- *Nonvolatile data:* Typically, traditional TPS databases recurrently incur numerous data updates (e.g., of classification levels, legal status, disciplinary history). In contrast, data warehouse data are typically stable and often organized across time periods. The data warehouse allows for an aging process in which older data are aggregated into statistical breakdowns. Transformations are often imposed on current operational data to create summary classification statistics for specific time periods (e.g., weekly disciplinary averages, average daily populations over time). Summary statistics are often missing from TPS operational data.

- *Flow of data from operations to the data warehouse:* Typically, data flow from the operational prison MIS through a cleaning and validation process before they are entered in a data warehouse. Validation is critical because a major function of the data warehouse is to support policy decisionmaking and planning.

- *Costs of building a data warehouse:* Data warehouses are extremely expensive, often in the range of several million dollars. Their development may extend over several years, with a focus on the integration of criminal histories, jail data, court and prosecutor data, and so forth, and may involve both prison programming staff and outside consultants.

OLAP

The importance of OLAP for classification is that it allows many kinds of data analysis procedures to be used to monitor the process and quality of classification and its impacts without the risk of data overload. Overload is prevented by the statistical aggregation of data using cross-tabulations, trends, and graphical displays in numerous report formats.

At the time of this study, several states (e.g., Colorado, South Carolina) were introducing OLAP technology to upgrade the MIS analytical capacity of their current prison systems, typically in the context of data warehouses because the two generally go together. OLAP enables correctional managers to access overall institutional data using flexible, simplified, but powerful analysis and reporting techniques. For example, a prison manager may want to examine admission trends for the previous 36 months across several modes of inmate entry and compare these trends by offense category and external classification levels. The manager can drill down into each mode of inmate entry using a series of sequential cross-tabulations to examine the percentage breakdowns by custody classification, gang membership, and so on. Findings can be organized as time-series charts or monthly bar charts.

Data analytical tools should facilitate timely data-driven decisions regarding various policy and planning issues. The OLAP approach aims to provide easy-to-use yet powerful statistical, graphics, and report-generation software. Prison databases must often be analyzed in multiple dimensions or user-designated "slices" of time. Other breakdowns may include population analyses by custody classification, ethnic

group, prison module or building, or specific program. In almost all analytical exercises, raw data (usually on prisoners) are aggregated into selected categories that are then compared using statistical tests of significance or examined for trends across time.

OLAP tools generally are organized into separate modules for data exploration, calculated fields, forecasting, graphics, and reports. They may also include libraries of canned management reports that enable managers to rapidly review preselected reports and data fields. OLAP tools are designed to provide prison managers with a suite of statistical analyses and graphical reporting procedures and enable the design of new reports that may be added to a cumulative report library. As noted previously, some dependency on database administrators to simplify the user front-end software or to design particularly complex reports may always remain. A database professional may be needed to format the underlying database, create names for variables that are more intuitive and understandable to users, and provide the front-end user with a ready-to-use tool. Thus, database staff may remain indispensable.

Statistical analysis is facilitated by selecting a preestablished analytical model (e.g., cross-tabulations or forecasting) and then dragging and dropping the desired variables into icons that represent the dependent and independent variables. For example, gender, age, and custody classification may be dragged and dropped into the rows and columns of a cross-tabulation table or bar graph. Sequential drilling down, or "slicing and dicing" the population data using sequential cross-tabulation, is a similar process. OLAP technology increasingly provides various graphing formats (e.g., pie charts, bar charts, scatter plots, trend lines, multidimensional plots).

At the time of this study, few correctional agencies were using OLAP. There appears to be much variation in the degree to which more advanced analytical procedures have been implemented to support administrative and managerial functions.

Major Categories of OLAP Tools

At the high end of the OLAP spectrum are fully developed, multidimensional database servers with user-friendly front ends that are seamlessly integrated with powerful statistical packages, graphics procedures, and spreadsheet and report production software. These include tools for various analyses that may be required by prison administrators (e.g., means and percentages, cross-classifications, drill-down procedures for multiple cross-tabulations, trend graphs and forecasting techniques, and a full range of graphics procedures). Data processing staff may be required to design and program the database to provide the particular views of the data and management reports desired by the end user. These expensive systems are supported by several large commercial vendors (e.g., Oracle, Sybase, Informix) and are generally found only in the private sector.

A second category of OLAP tools is sometimes called Relational OLAP (or ROLAP). ROLAP stores institutional data in a conventional relational database. MIS staff create a metadata layer between the underlying database and a front-end

analytical tool to separate the end user from the full complexities of the underlying database. The front-end tool and the simplified metalayer enable prison managers to work more easily with the underlying database to conduct statistical queries, produce graphical reports, and so forth.

A third category of OLAP is the rapidly evolving PC-based desktop software with integrated data analysis and reporting functionalities that can work in parallel with query and management reporting tools. Commercial vendors offering this software include Business Objects, Cognos, and Powerplay. This appears to be the category of choice of the Colorado MIS staff, who were experimenting with Business Objects at the time of the site visit. This represents the ongoing and rapid evolution of query tools; software for data access, multidimensional analysis, statistical, and graphical procedures; and reporting capacities. This OLAP category avoids the need for a costly multidimensional server and special programming of a complex metadata layer yet still provides a user-friendly environment for complex analyses and reporting.

Effectiveness of OLAP and EIS Procedures

A critical question in all decision-support approaches is whether prison managers can make effective use of these systems. The complexity of data and analyses required by prison managers has increased greatly. The political, social, legal, and internal management environments of prison organizations have all expanded so that the databases that support them must provide a great variety of and complexity in data support.

Delays, weak implementation, and frequently the ambivalence of prison administrators suggest either a potential lack of enthusiasm or a lack of the basic skills needed to use these technologies. Most prisons have not fully installed OLAP procedures for decision support at either the administrative or the managerial levels. Furthermore, those who have started this process have had only limited success in diffusing the technology across middle-management levels. Yet, the potential payoffs are significant, and this approach may likely represent a long-term trend in the emerging uses of data in prisons.

Automated Error Analysis: Quality Control of Classification Decisions

Another technical development that could provide a considerable advantage to prison classification is the analysis of error patterns in classification and other prison data using state-of-the-art statistical error analysis procedures. These procedures, although technically available, were not being used in any of the prisons examined. Analysis of error patterns uses several coefficients to measure the accuracy of classification decisions and of the underlying risk and needs data that are used to reach these decisions. Systematic monitoring of errors could provide a powerful motivation for the further improvement of prison classification procedures and might help managers improve overall unit performance.

Discussions of recent advancements in error analysis and validation technology using SDT and ROC analysis have started appearing in the criminology literature (Brennan and Harvey, 2000; Mossman, 1994; Quinsey et al., 1998; Rice, 1997). This technology has been described as the best and most sophisticated approach to analyzing the validity and quality of human judgment for classification decisions (Hammond, 1996). SDT offers accurate and unambiguous information with which to monitor the performance and accuracy of classification operations and decisions. Most of the raw data needed to conduct SDT are already routinely contained in most prison MISs; adding other data elements to the organizational database is unnecessary.

Although widely used in other professions (e.g., medicine, meteorology), SDT is underutilized in criminal justice and only recently has started being incorporated into correctional classification (see Brennan and Harvey, 2000; Quinsey et al., 1998). SDT technology is used to meet classification and diagnostic challenges where high-quality decisions are required and errors are critical (e.g., detection of cancer, diagnostic classifications for AIDS, x-ray diagnoses, sonar detection, weather forecasting).

Measuring Error and Predictive Accuracy of Prison Classification Systems

A starting point for all quality control in classification, including SDT, is the measurement of error. Most prison risk classifications that have a predictive purpose routinely classify offenders into high- or low-risk categories. The proportion of prisoners placed into the high-risk category is often called the selection ratio. Typically, over a selected time interval, recording sufficient behavioral outcome data to determine whether the prediction was justified is possible.

In custody classification, the outcome is typically inmate adjustment or behavioral problems. In community placement, the outcome is typically behavioral performance in the community (e.g., rearrest, program performance). Most prisons collect various outcome data on offender behavioral infractions, program performance, and so on. These data are used as input in SDT methods. According to Hammond (1996), classification decision outcomes generally fall into one of four groups:

1. *Correct hits/true positives:* The violent or high-risk offender is correctly identified and subsequent behavior confirms the classification.

2. *Misses/false negatives:* The violent or high-risk offender is misclassified as low risk and is therefore missed. This error is dangerous to a prison and the inmates who are housed with the person who was misclassified as low risk.

3. *Correct low risks/true negatives:* The low-risk offender is correctly classified as low risk.

4. *False alarms/false positives:* The low-risk offender is falsely classified as high risk. This appears to be the most common kind of misclassification in correctional decisionmaking.

Accurate records of each inmate's behavior enable a prison MIS to compute the rate of these classificatory outcomes. SDT, however, can produce additional measures of quality that are extremely useful. A complete assessment of classification quality may require several indices of predictive accuracy and error. Some of the more traditional indices for assessing the quality of classification include the following:

1. *Sensitivity: Sensitivity,* a synonym for *hit rate,* indicates the percentage of high-risk offenders who are correctly identified. This index indicates the reliability of the classification procedures for identifying the high-risk offender.

2. *False alarm rate:* This is the proportion of low-risk offenders who are incorrectly classified as violent or high risk. The false alarm rate is a very important measure of the degree to which the classification is unfair or inaccurate or the degree to which a classification system is overrestrictive (and hence wasteful of prison resources).

3. *Specificity:* This index is defined as the false alarm rate subtracted from 1. Specificity may be intuitively understood as a measure of accuracy for identifying true low-risk offenders. For example, a classification system may be quite good at identifying the high-risk offender yet very poor at correctly identifying the low-risk offender. Thus, *both* sensitivity and specificity are typically required to have a good understanding of the true performance of a classification system.

4. *Positive predictive value:* This is the probability that an offender classified as high risk is truly high risk. In essence, positive predictive value is a measure of the "believability" of a classification procedure, or the degree to which it can be trusted when it classifies an offender as high risk.

Many other numerical indices are available to assess various aspects of the quality and validity of a classification system (Caulkins et al., 1996). However, all of these measures are to some degree dependent on, or influenced by, the base rate of the behavior being predicted and the selection ratio of the instrument. The value of SDT is that in addition to producing the above coefficients, it can also assess the accuracy of a classification system without relying on the base rates and selection ratios. Its major coefficient, AUC, varies between 0.0 and 1.0, with 0.50 indicating random accuracy and 1.0 indicating perfect accuracy. The best accuracies being achieved in the correctional field are about 0.80 (Quinsey et al., 1998).

Using SDT To Establish Classification Decision Thresholds

Aside from providing improved measures of classification quality and accuracy, another key contribution of SDT is that it can be used to set decision thresholds for predictive classification instruments. Prison administrators and planners can thereby set accuracy levels for specific kinds of classification goals (e.g., a specific "believability," accuracy level, probability of detecting high risks to public safety, or false-positive error rate). SDT can assist administrators in discerning the tradeoffs among different kinds of errors.

This use of SDT has not yet been implemented in criminal justice agencies. However, this technology has much to offer the criminal justice policymaker, and it may be just a matter of time before these practices are implemented (see Brennan and Harvey 2000; Harvey et al., 1992).

Data Mining and Advanced Technologies

In the past decade, the field of data mining has grown enormously in the private sector. This technique offers many advanced exploratory statistical classification techniques that can aid the prison administrator or planner. Data-mining procedures can be incorporated into prison classification procedures because many of them are focused explicitly on classification and prediction. This section reviews some specific data-mining techniques that are highly relevant to classification.

The increased use of data-mining techniques emerged in parallel with that of the data warehouse. The motivation was clearly that these large multidimensional databases required more powerful exploratory statistical techniques to realize fully the value of the warehouse.

Beyond Averages

Population averages, means, and percentages are traditionally provided as the first step in and the basis for producing most statistical management reports. However, most managers need to dig deeper than these averages and discover more important predictive relationships and patterns that are often hidden behind averages. For example, the most violent or disruptive inmates are far different from the "average" offender and do not exhibit "average" behaviors.

Data-mining and artificial intelligence (AI) procedures are of great importance in the search for nonaverage patterns, relationships, and important offender subgroups. Many pattern-seeking exploratory and predictive models have been incorporated into data-mining software, which is appearing as front-end packages attached to data warehouses. Many of these techniques are highly effective for developing advanced multidimensional classifications and may augur significant advances in prison classification.

Automated Querying Using Data-Mining Techniques

In conventional statistical and management analysis, the analyst can create queries by which to discover information contained in the database. The prison manager may personally direct the search for new patterns. In contrast, data mining and AI offer *smart programs* that automatically search the database to find patterns that can be used in building classifications or predictions. The formulation of queries can be difficult when using a large multidimensional database. Each offender is described by a bewildering array of criminal history, demographic, social history, personality, and risk/needs variables. In a conventional OLAP, the prison manager must create queries to explore these complex data. In contrast, the data-mining approach

includes sophisticated techniques that explore data independently to discover patterns linked to a general query (e.g., Why has contraband increased in this prison during the past 6 months? or What kinds of prisoners are most and least disruptive?).

Flanagan (1983) used a data-mining technique (predictive attribute analysis) to examine the kinds of prisoners who exhibit high or low rates of disciplinary problems. He produced a predictive tree that illustrated this exploratory process in which several subclasses of prisoners were associated with very high or very low rates of disciplinary infractions. For example, his predictive classification found that the most disruptive class of inmates had a pattern of being under age 25, being charged with nonhomicide offenses, and having a history of drug problems. In contrast, the best-behaved inmates were older than 25, had no drug problems, and had been charged with a homicide. Conventional cross-classifications would have required innumerable search and query procedures to identify these patterns.

Predictive attribute analysis was a very early tree analysis procedure. The rate of development of data-mining procedures is so fast that this procedure is now obsolete and has been replaced by more powerful decision-tree procedures. Monahan et al. (2001) offer a useful recent review of more contemporary methods for statistical trees.

Knowledge Discovery: Hidden Subcategories and Patterns in the Data Warehouse

The data warehouse stores vast amounts of information and thus may hide important offender profiles that may be relevant to offender classification. Data-mining and analytical procedures allow underlying patterns to be identified, extricated, and examined for their classification implications. Once these patterns are discerned and clarified, the manager's goal is to transform them into reliable and productive business or policy rules. The search for underlying data structures is sometimes called knowledge discovery.

A basic assumption of the data-mining movement is that much information is hidden in the vast data warehouses and that this information can contribute to the understanding of complex relationships between offenders, their characteristics, institutional processing, treatments, and outcomes. The huge relational databases in most prisons are therefore seen as ripe targets for exploratory data analytical tools and data-mining procedures. The analyst searches for "nuggets" of critical relationships and patterns that remain hidden in the "rows" and "columns" of these databases. Flanagan's (1983) study of patterns linked to prison disciplinary problems is a good example of this search. These patterns consist of complex multivariate interactions, underlying trends, and hidden types of offenders on which predictions, classifications, and policy decisions can be based.

Major Data-Mining-Analysis Goals

This section examines several basic data-mining purposes that may help in classification development.

Discovery procedures—generating underlying or hidden classifications. Discovery techniques can be applied to a prison database to find underlying offender classes or target groups that may be relevant to special treatment or processing. The user does not necessarily start with a predetermined hypothesis regarding specific patterns or classification structures that may emerge. An example of this approach used in a prison was offered by Quinsey et al. (1998) in using clustering techniques to discover eight types of prisoner need profiles in a large sample of prisoners. For example, their fourth pattern, which accounted for 11 percent of the prison population, had high scores for violence recidivism, aggression, and institutional management problems. The analysis yielded a recommendation for maximum perimeter arrangements and high internal security for this type. The researchers concluded that the great heterogeneity of their prison population could be clarified by clustering techniques.

Predictive modeling for predictive purposes. Other new data-mining techniques can be used for predictive classifications of offenders. In these techniques, prior patterns are identified and then used to estimate the risk of some future behavior (e.g., recidivism, parole failure). This introduces the distinction between independent variables (predictors) and dependent variables (outcomes) and also requires techniques such as signal detection to evaluate predictive accuracy. A vast number of innovative techniques are available in contemporary data-mining and statistical packages; describing them is beyond the scope of this report. However, illustrative uses of neural networks, logistic regressions, predictive decision trees, survival analysis, clustering, and so on, can be found in numerous publications (see Brennan and Oliver, 2000; Caulkins et al., 1996; Clear, 1988; Jones, 1995; Quinsey et al., 1998; Rice, 1997).

Discovery of unusual, exceptional, or anomalous cases. An interesting use of pattern analytic methods is to discover subclasses of offenders that do not fit into any general pattern. These are the rare, unusual, or anomalous offenders who may require special attention. Brennan and Oliver (2000), illustrating this analysis, discovered that a small set of anomalous cases in a population of New York probationers was characterized by high levels of lying. This hidden class was discovered independently by both K-means pattern recognition and by the lie test (i.e., these offenders had high scores on the lie test of the COMPAS system).

Automated pattern matching to classify offenders. Automated assignment techniques for matching new offenders to an existing classification system are a class of numerical techniques with great importance for classification. Megargee and Bohn (1979) illustrated the need for these computational systems. Computers can retain in memory the basic features of any multidimensional classification of offenders. When an offender must be classified, these procedures automatically compare the prisoner with preexisting classes and assign (or match) the offender to the closest class. The "nearest neighbor" method has often been used for this task, although greater accuracy is achieved by the K-nearest neighbor, which simply matches the new case to a larger number of current, typical members of each of the preexisting classes (Brennan and Camilli, 1982).

Knowledge-Discovery and Data-Mining Tools

Many knowledge-discovery and data-mining tools have emerged in the last decade. These include conventional multivariate procedures such as factor and principal components analysis and multiple and stepwise regression methods. In addition to these traditional procedures, many AI and data-mining procedures have become available. These include expert systems, pattern recognition, several families of clustering techniques, inductive decision trees, and neural networks.

Data-mining tools are offered by most of the major database vendors. For example, Oracle has acquired Thinking Machines, which is one of the more advanced data-mining software companies. Oracle intends to use these procedures to extend its data warehouse platforms to improve the ad hoc query process using advanced data-mining software within a common Internet platform. Thinking Machines' data-mining procedure, called Darwin, combines neural networks, predictive decision trees, and case-based reasoning and is optimized for analysis of massive volumes of individual transaction and demographic data that typically occur in a large prison context.

Software Selection Challenge

In the future, prison MIS/IT managers will have the task of choosing among the many vendors and specific technologies for data-mining and AI software products. Because these procedures are much more complex than simple query and cross-tabulation, this can be a difficult decision. Yet, only a few fundamental data exploration and verification procedures form the basis of these software packages. This section reviews some major classes and uses of these methods pertaining to classification.

Neural networks for prediction and classification. Neural networks can be used for prediction, for building classification systems, and for identifying and classifying new inmates. Across several disciplines, these procedures have demonstrated powerful predictive classification abilities, such as predicting bankruptcy, detecting insurance fraud, diagnosing medical conditions, and predicting bond ratings. Neural networks often outperform conventional linear models.

Yet, neural networks have rarely been used for criminal justice classification purposes. Caulkins et al. (1996) reported an exception in the use of a neural network to predict criminal recidivism in a sample of released federal prisoners. However, a comparison of the neural network with standard linear models revealed no predictive advantage for the new procedure. Caulkins concluded that this failure was due to inadequate data and not to any intrinsic failure of the neural network. An important lesson from this result is that statistical methods by themselves cannot overcome the limitations of poor data and low validity.

Thus, a limit on predictive accuracy will always exist because of data limitations, irrespective of the statistical procedure. However, Brennan and Harvey (2000) used

signal-detection methods in a reanalysis of the Caulkins et al. (1996) data and confirmed that the neural network had a slight but consistent predictive advantage over linear additive models. The strength of neural network models is their ability to detect and incorporate complex relationships between predictor variables, including nonlinearities, interactions, and type effects. In essence, neural networks extract more information from the data than conventional linear additive techniques.

Clustering and pattern recognition as a basis for classification. Many clustering and pattern recognition methods are available and are included as standard approaches in most data-mining software (Brennan, 1993; Han and Kamber, 2001). Clustering and pattern recognition are used in creating classification systems. They are designed to identify patterns and regularities within a database and provide the foundation for empirical classifications. They are ideal for exploring large multidimensional databases in the search for type patterns.

Applications for prison use are rare, but several examples have entered into practice. Quinsey et al. (1998), for example, used a clustering procedure to develop a classification system for violent prisoners based on risk and needs patterns. Brennan and Oliver (2000) used both hierarchical clustering and K-means clustering to develop a behavioral classification of prisoners for the COMPAS system using criminal histories of a large sample of New York offenders. Megargee and Bohn's (1979) MMPI classification system was built using Ward's hierarchical clustering procedure and has been widely used as an internal classification system (see chapter 8).

Inductive decision trees. In criminal justice, there is a long history of using inductive or statistics-based decision trees for predictive classifications (Gottfredson and Gottfredson, 1980, 1985; Simon, 1972; Wilkins and MacNaughton-Smith, 1964). However, these existing applications mainly used early and relatively ineffective tree-building procedures (e.g., predictive attribute analysis, association analysis, and others). Consequently, they did not perform well, and the tree procedures have rarely been used as newer technologies have come into play. An exception is an interesting classification system developed by Monahan et al. (2001), which used a decision tree to predict violence.

A new generation of powerful inductive decision-tree procedures has emerged in the past decade, including CART (Salford Systems), CHAID (SPSS), and others. These are only beginning to be exploited in correctional classification systems. However, they have a high potential for developing predictive classifications and are widely used in the private sector for this purpose. The advantage of the more recent decision-tree procedures is that they can help identify the most important predictive risk factors among the hundreds of basically irrelevant variables that may exist in a data warehouse. In addition, this decision-tree approach can identify complex interactions among predictive variables.

Conclusion

Collectively, several innovations have the potential to improve the quality and performance of prison classification systems dramatically. These improvements are in several broad areas: data quality, statistical techniques for building classifications, quality control monitoring, and management reporting capabilities. Virtually all of these improvements are heavily dependent on large computer memories, fast computation, and more sophisticated software.

Larger, more comprehensive databases alone may ensure that more of the key data elements for valid classification are available in a verified, accurate, and timely manner. This improvement in comprehensive databases will interact with the second general trend, that is, the emergence of more powerful statistical, AI, and other numerical techniques for building classification systems. These classification methods can be linked to the specific purposes of prison managers (e.g., predicting recidivism and the risk of rule infractions). No consensus exists regarding which of the various exploratory data techniques (e.g., clustering, neural networks) will emerge as the most useful or how much of an improvement they are over standard linear techniques, given current data limitations. Apparently, all of these methods have the potential to help build more informative and valid offender classification systems.

Additionally, computerized techniques such as SDT that provide feedback on the quality of prison classification systems may alert prison managers and others in the criminal justice system to various ways to improve the quality of offender classifications.

All of these techniques, however, require training and competence building among prison managers and administrators. Many of these techniques, although highly mathematical, do not require that the prison manager or user be trained in statistical or mathematical procedures. Experience from the business community suggests that these methods can be understood intuitively and used effectively to solve real-world problems without a thorough understanding of the underlying mathematics. The correctional expertise of the prison manager thus will remain paramount and will drive queries and determine how these new techniques will be used to solve correctional problems. Implementation problems (competence, acceptance, training), not technical problems, may determine the ultimate contribution of these new analytical methods.

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CHAPTER

Implementing New Technology and Managing Change

Introduction

The prison administrators and managers encountered during interviews for this study were profoundly aware that IT had become fundamental to success in today's correctional environment. Prison databases and IT software were clearly seen as crucial resources for case-specific decisionmaking as well as for institutionwide planning, policy analysis, and results measurement. Managers in each prison visited for the study were concerned with upgrading procedures to collect, organize, retrieve, and exploit their growing databases. They were also highly aware of the need for selective access to and communication of this information across the institution. Interviews revealed professional motivation to introduce changes to apply this knowledge base efficiently, cost effectively, and skillfully at all organizational levels.

This chapter examines lessons learned regarding the procedures, politics, and planning of change in MIS and classification procedures. As noted elsewhere, MIS and classification evolve in parallel. More powerful MIS and computational capacities facilitate more advanced classification, and advances in classification methods and theory impose new demands on the MIS. Advances in one area prompt changes and advances in the other.

Widespread Innovation: Transitioning to the New World

The findings of this study support those of the NIC (1999) survey that most state DOCs are deeply engaged in a broad range of technical improvements. This section enumerates the main changes that were observed being implemented in the linked domains of MISs and classification.

New World of Data Architecture

At the time of this study, the South Carolina prison system best exemplified many of the changes occurring among prison MISs. However, some broad aspects of the shift from Old to New World data architectures were evident in many of the systems studied:

- *Introduction of the data warehouse concept:* Several prisons were engaged in the development of comprehensive, integrated databases, often involving the data warehouse concept (e.g., in Washington, South Carolina, and Colorado).

- *Use of OLAP software in conjunction with a data warehouse:* Some prison systems were upgrading their analytical and reporting capacity with commercial analysis and report-generation software packages (e.g., Colorado's had selected Business Objects as an OLAP vehicle to improve data analytical capacities and produce statistical reports).

- *Use of expert systems and AI for classification:* Few of the prison systems examined had actually introduced AI procedures for data analysis and classification support at the time of the study (e.g., South Carolina's use of an expert system shell in the context of an OLAP development).

- *Application of next-generation statistical analysis applications:* Various powerful analytical techniques have become available in the last few years for forecasting, data mining, simulating, and other activities that are highly relevant to prison management, classification, and policy analyses. These techniques can build new classifications and help to evaluate and monitor quality and error levels.

Specific Agendas for Change

In addition to the broad directions described above, the following specific goals and agendas were noted among state DOC MISs. These techniques were being used to upgrade the effectiveness and efficiency of classification procedures.

- *New classification systems for community reentry:* New classification and risk assessment techniques were being explored in several prisons (e.g., in Colorado, Washington, New Jersey). The transition of prisoners to community settings, early release, and work release are high-stakes classification decisions with serious implications for public safety, surveillance, case management, and treatment planning. Reentry decisions rely on far more comprehensive information than that offered by most external or internal classification systems. The available classification instruments that focus on these more comprehensive approaches include LSI and COMPAS (Brennan and Oliver, 2000).

- *Classifications for women inmates:* Because of concerns about the validity of current risk classifications for female offenders, some prison systems (e.g., in Colorado) were exploring separate classification systems for women. This involves several legal, criminological, psychological, and treatment issues that have not yet been resolved and represent difficult implementation challenges (Brennan, 2000; Brennan and Austin, 1997; Zaplin, 1998).

- *New and automated internal classifications:* Internal classifications are still not widely implemented in state prisons; however, many prison systems are interested in developing classification methods for internal decisions. Several of the

prisons in this study had already designed, tested, and implemented new internal classification systems (NIC, 2001). Some prison systems (e.g., in Colorado, Oregon) were automating more aspects of their external and internal classification processes to improve the efficiency of inmate tracking, data entry and retrieval, needs prioritization, inmate program and work activities monitoring, and housing and case plan integration tracking. The goal is to automate matching each inmate to the most appropriate housing, work, and program assignments. Another goal of automation is to integrate external and internal classification into a single system.

- *Comprehensive coverage of key classification variables:* Many states are planning to add variables to their MIS databases (see chapter 8). This was illustrated by South Carolina's new risk/needs assessment, Colorado's introduction of the Millon inventory, and the use of AIMS for internal classification in several prisons.

- *Improved performance-based measures:* Objective measures of results are needed to monitor progress toward prisons' policy goals. Because classification directly supports many correctional goals, valid and reliable performance indicators are needed to evaluate and monitor classification performance. This implementation challenge was evident in several prisons that were developing measures of the impact of new internal classification systems.

- *Broadened range of management and statistical reports:* Prisons are focusing on designing a broader range of management and statistical reports to increase the information flow to middle managers. Success in this area may have profound implications for accountability and resource allocation, particularly as better results and workload measures are developed for the MIS. OLAP procedures should allow prisons to experiment with and ultimately broaden the range of management reports customized to their particular needs.

- *Introduction of enhancements in screen design, interface, and navigation:* An almost constant flurry of small design changes was a common theme among all the prison systems examined. These small fixes typically responded to suggestions from classification staff regarding ineffective or inefficient screen design or keystrokes required for navigation. Typically, such small changes were channeled to data processing committees for rating according to the amount of work involved, benefit-cost considerations, and so on.

- *Development of integrated statewide criminal justice databases:* Many state DOCs were involved in intense efforts to integrate data from law enforcement, courts, probation, and other sources. Driving these changes was the need for timely, high-quality data and improved analytical capacities to support decisionmaking at line and management levels.

Such widespread innovation and change underlines the need for implementation skills among prison management. OLAP and other procedures reflect a profound

shift from static to dynamic database technologies and require nearly instantaneous access, storage, analysis, and communication. All of these technical features were under development in the prison systems examined. Electronic databases, new analytical procedures, and telecommunications appear to be converging rapidly. Data can now be extracted dynamically from the MIS and analyzed rapidly, and the results can be communicated in real time to correctional officers at many locations in a facility.

Organizational Change Capacity: Key to Success in Managing Change

Every enterprise possesses a certain capacity for change. Each correctional facility has an organizational context with a given level of support for change in IT and classification procedures. Although some agencies have a highly positive organizational culture that facilitates change, others are characterized by inertia, rigidity, and resistance to change (Brennan, 1999; Ellickson and Petersilia, 1983; Harris and Smith, 1993). Implementing technical innovations may be possible in one prison but very difficult in another. Prison managers who are interested in innovation and change must be highly aware of their organization's adaptive capacity. The discussion below identifies some factors that characterize the more innovative organizations.

Managers skilled in coalition building who also possess technical skills and a motivation to change can make a critical difference. Skills in planning and in conceptualizing the benefits and roles of classification and the advantages of IT innovation can strengthen organizational capacity for innovation.

Management Skills: Planning, Vision, and Technical Skills

Successful implementation of new technologies appears to be based in part on the presence of technically competent and sophisticated staff, particularly at the management and data processing levels. These staff can assess more accurately the potential of new technology and its alignment with their institution's goals and seem to possess the management skills to plan effective implementations.

Political Skills of Senior Managers and IT Staff

Changing classification or the MIS often requires interdepartmental agreements, interorganization referral adjustments, and careful policy coordination between departments. This occurs because changes to classification and MIS technologies are system transforming (Bushe and Shani, 1991); that is, they can ramify throughout the organization. These changes often cannot be achieved by top-down, chain-of-command orders and may require well-developed social and political skills. Coalition building, collective planning, and the ability to maintain momentum for the duration of the project are critical.

Culture of Openness to Innovation

Some prisons are elementally resistant to change. In these prisons, the burden of proof always falls on those proposing a change; anything new is viewed as an attack on the current administrative hierarchy. The combination of powerful but conservative leaders, rigid hierarchical bureaucracy, and routine procedures clearly makes

any innovation more challenging (Morgan, 1986). Many studies have shown that hierarchical, chain-of-command organizations are often resistant to change (Morgan, 1986). Other research has established that a barrier to change in some organizations is a culture that creates and rationalizes rigidity, resistance, and apathy toward innovation (Harris and Smith, 1993). When confronted with pressure to change, strong resistance and counterpressures protect the political legitimacy of the status quo. Such organizations can be so inflexible that they do not allow innovation without tremendous upheavals.

Entrenched resistance is often exemplified in attempts to change the data content of a prison MIS. Even simple changes in coding data elements or the exclusion of a data element can be met with incredible resistance. Classification forms and data entry procedures reflect current reality or business as usual, and attempts to redesign them seem to trigger power struggles and resistance. Change, in some prisons, is simply not possible in the face of such inertia.

In contrast, several of the prison systems examined in this study displayed a strong interest and openness to innovative approaches in both classification and MIS technologies and a strong interest in excellence. For example, virtually all were among the early adopters of internal classification methods (NIC, 2001) and participated in the transition to New World data architectures described by the South Carolina staff. Apparently, implementation in these prison systems also was effective because of the presence of change agents in leadership positions who appeared to have a good understanding of the organizational context (resistance, skills requirements, etc.) in which implementation must be orchestrated.

Role of Leadership in Achieving Consensus

Another characteristic of exemplary systems is leadership, political skills, and technical skills (and resources) strong enough to achieve consensus. Some prison systems are so politicized that it is difficult to achieve consensus on virtually any change. Pettigrew, Ferlie, and McKee (1992) reported that public-sector agencies are, if anything, more politicized than private corporations.

When consensus is impossible, capacity for change is diminished. Effective change requires the commitment of many stakeholders and the political will to assign resources to a new project. An inability to obtain consensus among critical stakeholders may cripple the implementation if some well-placed administrators or managers decide to sabotage the innovation or minimize the resources allocated to it. Managers must assess the degree of politicization in the organization and attempt to build productive coalitions.

Resources for Change

The successful introduction of innovations in classification or IT requires the assignment of appropriate and adequate resources (e.g., local leadership, technical staff, consultants, computer hardware and software) to the project. The concept of organizational readiness includes the ability to marshal appropriate resources.

Key Strategies for Implementation and Change Management

Johnson and Fredian (1986) noted that managing complex organizational change is one of the most difficult and frustrating tasks for managers in any organization. In the prisons examined in this study, administrators and managers often faced daunting challenges in implementing new software and hardware and obtaining resources and training. In criminal justice, several factors (agency size, multiple facility sites, budget constraints, entrenched procedures, etc.) make the process of implementing organizational and procedural change very complex. Each prison system has a turnover rate in its procedures, particularly in IT, as a result of leapfrogging new technologies. The turnover rate is perhaps fed by the failure of older MISs to address many of today's problems, by staff dissatisfaction with the current MIS, and by the continual emergence of rapidly improving software and hardware.

This section offers a strategy for implementing new technology and managing change in a correctional setting. It includes four overlapping phases and subtasks to be accomplished in roughly sequential order. Note that this precise order is not always required and that some feedback loops and deviations are often necessary (Brennan, 1999; Walton, 1989). The strategies described below integrate Walton's (1989) process framework and three broad themes of the Pettigrew, Ferlie, and McKee (1992) model of strategic change.

Phase 1: Preimplementation

The major tasks of this phase include recognizing any classification deficiencies or MIS problems, building a supportive coalition of stakeholders, mobilizing resources, building a compelling vision to motivate and guide change, and strengthening the agency's capacity for change as described below.

1. *Recognizing the problem:* This involves justifying the existence of the problem and the need for change. Every successful innovation appears to be backed by powerful managers or "change agents" who advocate, explain, and justify the change.

   Examples of problem recognition in the prisons examined in this study include the absence of an internal classification system, the need to automate internal classification, classification of female prisoners at higher security levels than warranted, and the need for a broader coverage of criminal history variables. Key managers in particular must understand the rationale for the change and the costs or inefficiencies of the present approach and clearly articulate the reasons for the proposed change (including the benefits and the costs of doing nothing).

2. *Building a supportive coalition:* Successful change seldom occurs without a base of political support. In the prisons examined, there appeared to be careful groundwork for building appropriate agreements among and coalitions of concerned managers. New Jersey, for instance, paved the way for large-scale

change in classification by securing all critical agreements and coalitions early in the process. Similarly, Colorado's efforts to automate tracking procedures for the new internal classification were preceded by efforts to secure the participation and commitment of senior administrators in the central office who were seen as critical to the project. Leaders of Florida's project to design a new risk and needs assessment directly sought staff participation. Managers created a substantial opportunity for staff suggestions and input into the design and refinement of new procedures. This helped in designing the procedure and achieving buy-in from an important segment of the prison staff.

3. *Involving a broad base of stakeholders:* Classification procedures and MISs influence many departments, managers, and prison policies and thus have many stakeholders (e.g., security, classification, and MIS staff). These stakeholders must all be given a direct participatory role, which strengthens buy-in and commitment. People are more likely to resist if they feel excluded, and their participation usually improves the overall design of any new system. All of the exemplary prison systems appeared able to involve all main stakeholders and give them meaningful participatory roles.

4. *Specifying the deficiencies of current practices:* The change agents (i.e., all members of the project team) must fully appreciate the performance deficits of the current classification procedures. For example, the weaknesses of traditional subjective approaches to internal classification decisions were fully elaborated in the goal statements of several of the prisons examined.

5. *Developing a vision of desired goals/benefits:* Commitment among key managers is easier to obtain if a clear understanding of the desired goals and benefits exists. A written vision statement prepared by a high-level steering committee can provide direction and motivation. Resource acquisition is easier when all major stakeholders are aware of and agree on the intended goals of the changes proposed.

6. *Developing performance requirements for the new system:* The coalition of stakeholders should develop a wish list of key performance requirements for the new procedure or MIS modifications. Specific design criteria (e.g., predictive validity, consistency, reliability) for internal and external classification systems are promulgated in various NIC and American Correctional Association (ACA) publications and are discussed elsewhere in this report. That many prisons conducted pilot studies for new internal classification systems reflects the importance of the preliminary evaluation of performance criteria.

7. *Mobilizing new organizational teams or committees to manage change:* Normal staffing arrangements are seldom geared to the tasks of managing, designing, and implementing complex change. Thus, it is often necessary to set up new structures to enhance the adaptive capacity of the agency. When a prison contemplates introducing major innovations in either classification or the MIS, it can strengthen its adaptive capacity by forming special teams or committees of

Unified commitment among organizational leadership and major stakeholders is the ideal platform from which to launch major changes. Obtaining the support of key people who have influence and authority is a priority. Soliciting such support at the beginning of the process involves major stakeholders and early agenda-setting and design decisions.

change agents. All of the prisons in this study formed strong implementation and planning teams with effective leadership. Typical change structures include the following:

- A transition manager (change agent or leader).
- A steering committee (high-level administrators).
- An implementation team (key stakeholders, technical staff, etc.).
- A change monitor (to review the change process).
- Expert outside help (consultants, experienced peers, etc.).

Implementation teams generally are involved in the management of design, training, troubleshooting, coordinating, and maintaining the momentum of the process. The project manager provides leadership, continuity, and coordination with upper-level administrators. This person is critical to the whole effort and must often assume the role of change agent to consistently maintain the project's momentum. The project manager should be selected on the basis of respect from peers, management and political skills, and so on.

New Jersey's prison system exemplifies these tactics. Following the initial securing of commitments from senior leadership for its classification design project, the state formed a high-level task force to provide overall direction and resources. The state also formed a project team consisting of major stakeholders to coordinate the pilot test, revise the instrument, and formulate a strategic plan for the whole process. Similar committee structures were formed in most of the other successful prison systems.

External consultants can often strengthen the capacity for change by providing specialized expertise. The use of such consultants was a common feature of these exemplary systems. For example, a key ingredient in the success of the South Carolina DOC effort to design advanced applications was collaboration with university researchers who had high-level skills in new data architectures, expert systems, and advanced simulation methods. Similarly, the Florida DOC consulted with university researchers who had expertise in psychometric measurement for the design of its new risk and needs assessment.

8. *Evaluating preliminary design and alignment issues:* The design of new classification procedures or MIS data structures or capacities is principally based on performance requirements. Different classification procedures must be designed based on different priorities. The Washington DOC, for example, when considering any change to MIS or classification software, has an elaborate multilayered sequence of committee reviews of the purposes, feasibility, and other specifications for all software changes.

Clear performance specifications and goals are thus required to direct the design of any new classification or MIS change. This places substantial responsibility on prison managers to be clear about the goals and purposes of any change. Typically, the implementation team assumes primary responsibility for this task. *Alignment* refers to the degree to which an innovation (either to MIS software or classification methods) is a good fit with prison goals and policies, staff competence, and the overall organizational culture. A pilot test is critical in assessing the degree of fit and determining whether the innovation has any design flaws.

9. *Competence building and planning for training programs:* In each prison visited, there was a strong focus on building competence among staff. Major policy and procedural changes require new skills, perspectives, and understandings. When prison managers have a poor understanding of classification, they may be unaware of design flaws (e.g., invalid risk factors, inappropriate weighting of factors, erroneous cutting points) in the proposed system. The history of correctional classification is littered with failures resulting from design flaws in classification methods (see Brennan, 1987b; Megargee and Bohn, 1979; Palmer, 1992).

   Training plans are also required in any situation of rapid technological or procedural change that may render current organizational knowledge obsolete. With rapid change, the organization's inventory of skills and procedural knowledge enters a state of decay (Pettigrew, Ferlie, and McKee, 1992). Retrenchment skills and effective training programs cannot be ignored. A second implication of a high turnover rate is that many prisons must be willing to abandon or phase out their older systems while simultaneously introducing new systems.

10. *Developing (and continually refining) a project plan:* The NIC (2001) study of new internal classifications emphasized the importance of constant planning, realistic goals, measurable objectives, and continual updating. The implementation team must develop and maintain a tentative implementation plan, preferably in writing. Specific and realistic tasks, milestones, and responsibilities must be identified. Without a written plan, confusion, chaos, and stagnation may exist. The plan should be brief and clear and should designate specific responsibilities. It should outline the main changes, why they are important, who will make them, how long each will take, and the sequence in which they will be completed.

    An interesting feature of MIS planning in prisons, as noted by Fowler (1999), is the role of long-term plans in guarding against the distractions of today's IT innovations. She argued that prisons must develop a long-term IT plan that, although innovative and open to change, avoids the *continual* acquisition of the most recent technology. She saw this style of continual upgrading as a recipe for wasteful accumulation of underutilized hardware and software. This practice may result in data processing and programming staff's being constantly

engaged in learning new IT procedures and unable to service current requirements.

In the prisons observed in this study, achieving this balance between old and new IT was an ongoing challenge. Most of the prisons appeared to have reached a comfort level with sufficient continuity of their IT procedures while steadily introducing changes. Fowler (1999) suggested that existing systems should not be discarded too quickly in favor of new technological "chic."

Phase 2: Finalizing Design, Conducting a Rigorous Pilot Test, and Identifying Design Flaws

The design of new classification or MIS software governs the success or failure of its implementation. Undetected design flaws can ruin the effectiveness of any innovation. For example, the NIC 2001 study reported that some prison systems had stalled in using AIMS because of a specific weakness in interrater reliability. Clearly, before a new system enters routine practice, it must be thoroughly pilot tested to ascertain whether it has any design flaws and can, in fact, achieve the desired goals. The identification and correction of design flaws is the essential task of this phase. This phase may involve the following subtasks:

1. *Finalizing performance requirements:* This builds on the preliminary work of the stakeholders and implementation team in the preimplementation phase. Full specification of performance requirements is critical because these will be tested empirically in the pilot study.

2. *Finalizing the design or adopting a design from another jurisdiction:* In the case of classification, some prisons may select several candidate methods and evaluate and compare them in a pilot study. For example, AIMS, LSI, COMPAS, and other classification approaches have been evaluated in pilot testing by prison systems. No single classification model is universally accepted (NIC, 2001). Each of the prisons examined in this study appeared to desire a unique or customized approach to classification.

3. *Training staff in new prototype (provisional) procedures:* Before the pilot test, staff must be trained in the new procedures. The training curriculum must explain the role of classification or the new MIS capabilities, new technical procedures, strengths and weaknesses of new classifications, legal requirements, and professional standards (e.g., ACA principles, NIC principles, or Megargee standards).

4. *Designing and conducting a pilot test:* The pilot test assesses whether all performance requirements of the new classification or MIS are met. In the case of classification procedures, the pilot test must assess the statistical validity and reliability of the new system on real data collected in the prison. This test of new classification methods may vary in level of completeness and sophistication (Alexander and Austin, 1992; Brennan, 1993).

5. *Assessing alignment:* The overall fit, or alignment, of the new procedures must be examined (Walton, 1989). This assessment uses both the pilot test and a process analysis of how the staff use and respond to the new procedures in real-life conditions. Alignment is a broad concept in that it assesses whether a new procedure is well coordinated with staff skills, agency mission, personnel policies, and so on. For example, one prison preferred PMC over AIMS because staff felt that the AIMS requirements for separating violent from nonviolent offenders were too rigid. Such preferences go beyond the pilot test by reflecting the multiple factors involved in the consideration of alignment (Brennan, 1999).

   Alignment in prison classification is often difficult to achieve, given that a classification must meet multiple policy goals simultaneously. There may be no easy way to meet all policy priorities with a single classification. A new classification system may be misaligned if it is too restrictive or too liberal, if it takes too long to complete, if the skill requirements go beyond the level of the staff who will use it (e.g., if it requires complex psychological assessment), or if it has unclear implications for prisoner management. Thus, achieving alignment involves difficult technical decisions.

6. *Introducing refinements:* A need for refinements often emerges from the pilot test and the analysis of alignment. Refinements should be introduced until the new procedure has the best possible fit. For example, Scottish prisons made various modifications to AIMS to improve its fit with their specific concerns.

Phase 3: Implementation

Implementation means introducing the innovation into routine use. This initiates a new phase in which the emphasis shifts from design to detailed project management. In the prison systems examined in this study, many changes were introduced: new internal classifications, modified external classifications, automation of classification, and new risk and needs assessments. The following are the lessons learned in this "go live" phase of implementation:

1. *Maintain a continuous implementation plan:* The implementation plan continues to specify all details of who does what at each phase as new procedures are introduced into routine operations. It should provide flexibility to meet unexpected difficulties. For example, specific changes in staff job designs may be expected and should be discussed with relevant staff. Longer interviews may be required for internal classification, and staff must adjust to such changes and view additional tasks as legitimate components of their jobs. Implementation of virtually any change to routine operations must be continually responsive to the emerging dynamic situation. Problems should be identified and resolved earlier rather than later.

2. *Develop mechanisms to monitor progress:* This may include Gantt charts for monitoring progress and procedures to maintain good communication patterns and identify and resolve conflicts. All parties, especially top administrators,

must be routinely apprised of progress, successes and failures, and problem resolution. Virtually all of the prisons involved in this study were extremely careful in this area of implementation.

3. *Engage in problem identification and adaptive problem solving:* The participation of line users and other stakeholders must be encouraged, and management should maintain a stance that is receptive to their suggestions. Rigid top-down planning or design cannot predict all problems that may emerge when new classification or IT procedures are being introduced. The initial design of most new correctional procedures (e.g., an objective classification) is seldom flawless. Senior managers and external consultants are not omniscient in predicting all problems or glitches. Problems and possible solutions often are recognized only when line staff start using the new procedures in daily operations.

Conversion strategies must allow for uninterrupted workflow during the transition from old to new systems to minimize the impact on the consistency and validity of classification decisions.

4. *Implement strategies for conversion from old to new systems:* The current classification procedures are often continued while the new system is phased in; occasionally, the two will operate simultaneously during a period of transition. With new classification and MIS methods, it may be prudent to maintain a backup until the new system is thoroughly mastered. Fowler (1999) commented that it is imperative to maintain the quality of current, routine operations while important upgrades are being introduced. Extreme care should thus be focused on maintaining the consistency and validity of classification decisions. Planning should aim for minimal disruption of normal facility activities during the changeover. Careful supervision is needed as classification staffs develop confidence and skills in the new procedures.

5. *Provide communication, participation, and support:* Maintaining the support and commitment of all stakeholders is imperative during this phase because of the potential for high stress. Procedures for communication, reports, participation, and input must be maintained, with occasional reminders by the implementation team leader of the benefits and goals of the changes being introduced.

6. *Build competence through training:* Successful implementation of new and complex classifications or MIS procedures always requires new skills (e.g., navigating new screens, using new analytical procedures) that must be imparted to staff in this early phase. New skills in supervision procedures also may be required as the new (especially classification) methods are introduced. The implementation team must therefore attend to continuous training and supervision of management and line staff during this phase to promote learning of, competence in, and comfort with the new procedures. Note that the IT skills required of line and management staff may differ. Management in particular may require new skills in designing and interpreting statistical reports.

7. *Implement organizational adjustments to the new procedures:* An often unrecognized point is that when new IT processes are introduced, some mutual adaptation may occur between the new procedure and current organizational structures (Pettigrew, Ferlie, and Mckee 1992; Walton, 1989). New IT

procedures may have unexpected consequences that change the way that the prison works or that individual prison staff or managers perform their work. Faster decisionmaking and revised classification procedures may introduce profound changes to offender referral patterns and staff workloads, introduce power shifts between staff, or have other unexpected side effects. The precise effects cannot always be predicted. Thus, when a prison upgrades its classification or MIS procedures, it must be alert to the emergence of such problems and able to resolve unexpected organizational challenges.

Phase 4: Postimplementation

When new procedures have been implemented for a reasonable period of time, a postimplementation phase of consolidation, monitoring, and evaluation of the new classification procedures begins. In this phase, the main tasks involve recognizing problems, monitoring results, and ensuring that the new procedure is implemented correctly and being used with integrity. The last of these often involves formal process evaluation studies or may simply require careful supervision by a manager who understands the procedure's design and intent. This scrutiny will indicate whether the new procedures have been fully implemented. If not, it is best to complete the implementation process before conducting a formal impact study.

Evaluating and monitoring tasks are often ignored when managers erroneously assume that the goals of a new classification will be reached and that procedures will be used as designed. However, many implementation studies have indicated that this is rarely the case (Brennan, 1999; Harris and Smith, 1993; Johnson and Fredian, 1986). Managers must recognize that once implementation has occurred, the integrity with which the new procedure is used must be monitored.

Each of the prison systems in this study devoted special efforts to assessing the impact of and various followup tasks for each new procedure following implementation. Critical questions are, Does it work? and Are we achieving the desired benefits? In some instances, formal impact evaluation studies may be needed to assess whether the innovation is achieving the desired goals over the longer term.

Major postimplementation tasks include the following:

1. *Outcomes assessment:* This process examines whether the new classification system reaches its goals and considers the results of the transition to the new system. The MIS database must contain the measures of relevant outcomes and goals of the new procedure. Performance reports and time-based charts should be constructed to assess whether goals are being achieved over time and to determine which goals are not being attained and why. Routine monitoring reports should be distributed to all key stakeholders. In most criminal justice agencies, the quantitative data elements necessary to assess outcome measures are often missing, incomplete, or inadequate. All of the prison systems examined in this study had the challenge of progressively upgrading their results measurements. Over the longer term, it is prudent to maintain constant vigilance regarding the integrity of implementing new procedures.

2. *Process evaluation:* This procedure assesses the integrity with which a new procedure, program, or software package is used and examines resistance, noncompliance, user-friendliness, goal sabotage, goal substitution, and so on. Brennan and Austin (1989) provided a review of these procedures for jail classification systems. Process evaluation essentially overlaps with effective supervision. Supervising managers must be vigilant regarding staff integrity in correctly using the new procedures. Harris and Smith (1993) commented that attempts by staff to subvert, replace, or undermine the goals of the innovation must be identified and quickly resolved by leadership.

3. *Problem identification and process revision:* On the basis of longer term evaluation and monitoring, managers or staff may identify weaknesses of the new classification or MIS procedures that require modification. This was standard practice in all of the prison systems examined in this study. Most had formal procedures by which staff could forward suggestions to a supervisor or to a quality control committee for consideration so that continuous improvement could be effected.

4. *Organizational learning capacity enhancement; process debriefing:* A useful way to learn from experience and promote organizational capacity for change is to provide feedback in debriefing sessions with the implementation team and other stakeholders. These debriefing sessions should assess questions such as, What worked well? Where were the main difficulties? What did we learn about implementing change? and What are we learning from ongoing monitoring of results? Another strategy for bolstering organizational learning is to maintain continuous written documentation of the total implementation process. Implementation teams interviewed for this study were clearly aware of these strategies and were concerned about achieving positive growth in change management.

5. *Skills and competence maintenance:* Skills maintenance must not be ignored in postimplementation efforts. Staff turnover creates a continuing need for skills maintenance. Supervisors may discern skill deficiencies among the staff. Key questions for supervisors include, Has mastery been achieved in all the ways that the new procedure can be used? and What additional competency needs are present? Often managers themselves do not have all of the necessary skills for using the MIS. Continuing assessment of training needs should be conducted throughout postimplementation.

6. *Design of feedback systems and reports to key stakeholders:* Because external vendors seldom have a deep understanding of correctional facilities, the insights of prison managers are required to design effective management reports tailored to the prison's needs. Classification assessments produce a rapidly expanding database relevant to many prison stakeholders. Carefully designed reports should be developed for routine distribution. The prisons in the present study had mixed success in this area. Most were able to produce numerous reports, but often there was dissatisfaction and a need for more customized or specific

reports to meet the exact needs of managers. The limitations of the analytical capacity of the current MIS were often a roadblock to generating more useful or customized reports.

Conclusion

Managing organizational change regarding new or upgraded prison classification systems is both difficult and multiphased and has several hazards that can derail or undermine the whole effort. First, implementing any new classification system and its supporting MIS involves making technical changes that affect the prison systemically and therefore require well-designed implementation strategies backed up by effective leadership. Second, strong political leadership is required at virtually every implementation phase (as reviewed in this chapter). Thus, technical competence in the design and testing of new technologies must be paralleled by administrative leadership, a strong vision of the required benefits, and the determination to obtain the appropriate resources as well as the competence to successfully introduce the new technologies.

Notes

1. Recent trends suggest a renewed interest in more comprehensive classifications. See NIC (2001) and Brennan and Oliver (2000).

2. These have not been implemented in all prisons, although their popularity is rising.

3. Some existing state MISs project as many as 3 business days.

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Appendix A: Washington Department of Corrections Summary

Washington Department of Corrections
Chief of Classification and Treatment
P.O. Box 41128
Olympia, WA 98504–1128
360–753–1598

General System Overview

On September 30, 2000, the Washington Department of Corrections (WDOC) had 14,883 inmates, 566 of whom were in work release. The population has increased by one-fourth in 5 years and is projected to continue increasing. Exhibit A–1 shows the distribution of sentence length and commitment crime types for the population.

WDOC has 13 facilities, 2 prerelease facilities, and 16 work-release facilities. There are two reception centers, one for men and another for women, at separate locations. Each prison has a classification unit that is responsible for reclassification and internal classification.

WDOC exemplifies the two trends discussed in chapter 3: the shift to multipurpose classification and more complex classification. In addition to the traditional purposes of classification, WDOC seeks to identify the level of risk to the community after inmates are released, determine the needs that create that risk, and prioritize the allocation of program resources to the needs of inmates in a way that will most lower the risk to the community. The department also intends to create reports that will monitor performance.

Exhibit A–1. WDOC Population, by Commitment Crime and Sentence Length: September 30, 2000

Commitment Crime and Sentence Length	Inmates	
	n	*%*
Commitment crime		
Violent	9,304	62.5
Property	2,158	14.5
Drug	3,203	21.5
Other	218	1.5
Total	14,883	100.0
Sentence (years)		
Less than 2	2,540	17.1
2–5	3,738	25.1
5–10	3,991	26.8
More than 10	4,201	28.2
Life without release	413	2.8
Total	14,883	100.0

WDOC = Washington Department of Corrections
Source: WDOC.

The current automated inmate information system, Offender Based Transaction System (OBTS), was borrowed from Florida. It was implemented in 1984. OBTS was designed to track individual offenders. It has limited flexibility, is not user-friendly, and uses a nonrelational database. Movement from one screen to another is always achieved by entering a transaction ID in the upper left corner of a screen.

WDOC is midway through the design of a new information system that is object based for greater flexibility and uses a graphical user interface for greater user-friendliness. It includes a data warehouse, which will provide greater reporting capacity. Fixed-function terminals are being replaced by personal computers.

Process

Intake

This appendix briefly describes general inmate processing that is found in many other DOCs. WDOC is required to receive inmates when counties are ready to transfer them. WDOC picks up county inmates on regularly scheduled trip routes. The counties usually, but not always, give 1-day advance notice of an inmate's transfer. The law requires only that a warrant, judgment, and sentence accompany the inmate. The judgment and sentence provide a complete record of prior Washington convictions.

The inmate often arrives without a presentence report, medical information, or information about jail adjustment. The ID officer fingerprints the inmate. The fingerprints are sent to the Washington State Patrol, which returns identification in about 2 months. The inmate is screened for protective custody and mental and medical health issues. Personal characteristics, such as weight and height, are entered by the officer on a form and then entered into the computer by a clerk. If the inmate has served a prior term, his or her identification screen will be prefilled and the officer need only update the data.

Time Computation

On the 2nd or 3rd working day, records office staff enter sentence data. Crime codes are entered, which can then be processed automatically in different routines, such as time computations and custody classification. The records office staff enter commitment offense(s) and prior convictions from the judgment and sentence. Then, dates of legal significance (e.g., projected release dates, dates for parole hearings, good-time dates) are computed automatically.

Records office staff also enter warrants and detainers on a special screen (exhibit A–2). This screen is structured so that the type of detainer, authority, and charge are coded and therefore can be automatically transferred to other screens, such as the custody review screen.

Exhibit A–2. OBTS Detainer/Warrant History Screen (Washington DOC)

Initial Classification

External Classification

The reception center produces, at a minimum, the following documents:

1. Classification Referral, a narrative summary of the classification recommendations.

2. Criminal History Summary (if the offender has a scheduled release date within 2 years or an override is requested on custody).

3. Initial Custody Designation (ICD).*

4. Risk Management Inventory (RMI).*

5. Tests: Revised Beta-II Exam, 2d ed.;* Academic Achievement Test; Buss-Durkee Hostility Inventory;* Monroe Dyscontrol Scale;* Suicide Risk Scale;* Vocational Questionnaire (self-report); Substance Abuse Subtle Screening Inventory-3 (SASSI–3).

*Entered into the automated information system.

The reception center does not produce all documents on all inmates. For instance, RMI is administered only to inmates within 9 months of their earliest release

date (ERD). For inmates with more time to ERD, RMI is completed at general confinement.

Security Classification

There are three scored custody levels: close, medium, and minimum. ICD consists of five objective items that are automatically scored. The classification counselor also assigns ICD manually and checks the automated ICD. The counselor enters any necessary changes to incorporate relevant information that is not automated (such as out-of-state convictions and open charges). ICD, like other components of OBTS, contains numerous edits. Some edits flash warnings, and others prevent certain actions. For instance, an inmate whose sentence has an enhancement for "Hard Time for Armed Crime" must serve a specific percentage of his or her sentence before entering work release. The computer will prevent a work-release classification for an inmate who has not served the required time.

For minimum custody, there must also be a psychological assessment of the inmate's risk that is less than 2 years old. The psychological test is the Millon Clinical Multiaxial Inventory. The scores are interpreted in a computer-generated report.

Program Classification

The Offender Accountability Act of 1999 is being implemented in stages, having begun in July 2000. The act requires that WDOC classify inmates according to their risk to the community and identify the factors that can reduce the risk. WDOC is responsible for providing services that will reduce that risk, and the inmate is responsible for taking advantage of those services. Therefore, classification must classify the inmate, place him or her where appropriate services are available, and track his or her participation. Priority for treatment services must be given to the highest risk inmates.

There are four levels of risk, which are determined by a number of criteria identified by RMI. One criterion is the inmate's score on the Level of Supervision Inventory, Revised. The corrections counselor administers the instrument at reception to inmates with 9 months or less to ERD; otherwise, it is administered at the inmate's first general confinement prison. The final score is entered in OBTS.

There are nine need areas, each with levels of need, which the counselor enters in OBTS.

Medical and Mental Health Classification

Medical and mental health staff enter the inmate's PULHESDT scores.

Transfer Assignment

A central office corrections program manager (CPM) is responsible for the transfer of inmates through the classification process. Automated screens identify every bed in the system, locate every inmate in a bed, and track his or her intrafacility and

interfacility moves. These screens identify inmates who are present at each facility and inmates who are under the jurisdiction of each facility but currently out (e.g., in court or in an outside hospital). Every admission, release, transfer, and in-transit move is associated with reason codes that must be entered.

The CPM receives a daily printout of a report that projects vacancies in each prison 1 week ahead. Bus routes are fixed, and a report that projects seat vacancies can be printed. Finally, a list of inmates who are classified and ready to leave can be printed. The CPM can look up each inmate on a screen that specifies inmate characteristics that can be matched to characteristics of facilities (exhibit A–3).

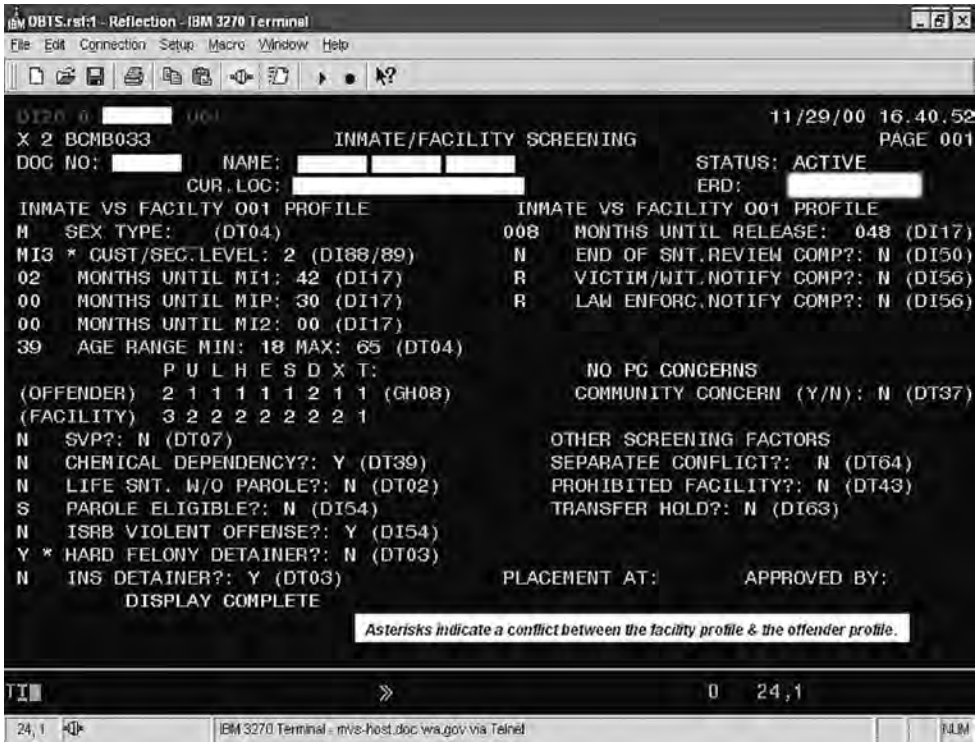
Staff can also enter holds so that inmates will not be considered for transfer until a specified time. Finally, the CPM assigns an inmate to a facility, specifying the route, layovers, and dispatchers. Edits will flash a warning if inmate and facility characteristics are inconsistent. The trip manifest is then made available to the sending and receiving facilities.

Internal Classification

Housing

Internal housing assignments (i.e., assigning an offender to a specific housing unit, cell, and bed) are made by the local facility. Before unit or housing assignment, separate screens are reviewed. Efforts are made to ensure a racial and ethnic balance in

Exhibit A–3. OBTS Inmate/Facility Screening Screen



housing units. Unit staff work with facility records staff to determine the most appropriate assignment, given the beds that are available.

Programs

The counselor identifies the inmate's program needs in OBTS and in the inmate's file. A screen shows the vacancies in each program, and another screen shows a program profile, including the program start dates and schedule. The counselor submits an automated program referral based on the inmate's program needs and the available programs. The inmate's attendance and performance are entered in OBTS, where they can be tracked. The inmate's legal dates are automatically adjusted, and program participation is entered.

Reclassification

Security reclassification occurs as needed and at least annually or semiannually, depending on an inmate's time to ERD. The counselor initiates an automated classification referral, which is approved by the unit team (consisting of counseling and custody staff), then approved by a review committee and forwarded to the superintendent for final decision, unless the referral/reclassification is for community release or maximum security or an override is involved. Minimum placement in work release is voluntary. There is a custody review that has six items. Scoring is automated, with the exception of points earned through program participation; this item must be scored manually by the counselor. Two items are based on ICD. One item is based on disciplinary behavior. For each infraction, the automated disciplinary system includes the date committed, the infraction, and the disposition. One item is based on program participation, which is in OBTS. One item is based on active detainers and warrants, which are also in OBTS.

Community Release

In this report, "community release" refers to a program that places an inmate in the community during the period of incarceration, in contrast to a program that places an inmate in the community after the period of incarceration (often, but not always, referred to as "parole"). If an inmate meets the custody criteria and timeframe for work release, a community release plan packet is sent to the work-release center near the inmate's proposed residence. The packet contains a minimum of 11 documents that either must be filled out by a counselor or must be copied. The center sends the packet back to the inmate's facility, where the decision is entered in OBTS.

Movement into work release is managed by the CPM.

Reports

Case-processing reports. The following are examples of case-processing reports:

- *Upcoming releases:* The records office can print a list of releases for any time period. The list indicates any special action that will need to be taken, such as victim/witness notification.

- *Final manifest (arrivals and departures):* As CPMs issue transfer orders to specific facilities on specific days, the manifests for each trip can be printed automatically. For each trip, the manifest shows the inmate's name, identification number, destination, and coded reasons for any special transportation concern.

Operations control reports. Exhibit A–4 is an example of an operations report that helps a supervisor keep track of overrides. Overrides are a critical issue for maintaining the reliability and validity of classification. The supervisor can compare the overrides and the override reasons for each staff member.

Management control reports. The following descriptions exemplify the subject matter of management control reports:

- Based on classification data, the planning and research section produces a quarterly report that analyzes custody classification, including the relationship between inmate custody classification and placement.

- In 1998, WDOC analyzed ICD to determine the relative contributions of each factor in the instrument (exhibit A–5).

  Exhibit A–5 provides information that managers can use to investigate whether resources are used as efficiently as possible. Managers may want to consider scoring seriousness alone in certain cases, given the costs of collecting and analyzing data used to score each item in ICD and the great weight given to the seriousness of the crime compared with other factors.

- In 1998, WDOC also briefly analyzed the validity of ICD. Exhibit A–6 shows that the higher the initial custody classification, the higher the percentage of inmates with more than two infractions.

Exhibit A–4. Minimum Custody Placement Overrides

10/01/00
Time 01:30

DOC	Name	Release Date	Days Remaining	Current Classification	Approp Class	Override Reason	Date Assigned	Next Review Date
				For Last Name, First Name				
705XXX	XXX, XXX	00/00/00	XXXXX	MIP	MI1	Medical	5/16/00	11/09/00
				For Last Name, First Name				
808XXX	XXX, XXX	00/00/00	XXXXX	MI2	MIP	Policy	5/2/00	9/23/00
797XXX	XXX, XXX	00/00/00	XXXXX	MI2	MI1	Medical	9/22/00	12/15/00
716XXX	XXX, XXX	00/00/00	XXXXX	MI2	MI1	Pre/WR	7/5/00	12/08/00

Exhibit A–5. Contribution to Initial Custody Classification, by Factor: January 1, 1997, Through June 30, 1997

Contributing Factor	Contribution (%)
Seriousness of crime	64
Seriousness of crime and age	73
Seriousness of crime, age, and detainers	82

Note: Factors shown are those making the greatest contributions to initial custody classification.
Source: Washington Department of Corrections.

Strategic planning reports. Annually, the state projects the total WDOC population for the next 10 years. Based on these totals and current classification practices and data, WDOC projects the demand for the number of beds for the following classifications: maximum security, close security, medium security, minimum security, prerelease, and work release.

Exhibit A–6. WDOC Population, by Initial Custody Classification, Subsequent Infractions, and Time to Second Infraction: 1996

Initial Classification	All Offenders	Offenders With Two Infractions		Days to Second Infraction* (*n*)			
		n	%	0–90	91–180	181–270	271–365
Close	700	75	11	23	23	19	10
Medium	1,099	45	4	27	11	5	2
Minimum	1,218	30	2	18	11	1	0

WDOC = Washington Department of Corrections
*Number of days between initial classification and second infraction.
Source: WDOC.

Appendix B: Florida Department of Corrections Summary

Florida Department of Corrections
Bureau Chief for Classification and Central Records
Correctional Program Administrator (Administrator for Institutional Classification Automation)
2601 Blair Stone Road
Tallahassee, FL 32399
850–410–4365

General System Overview

The Florida prison system comprises 57 institutions, work/forestry camps, and road prisons housing 71,253 inmates. Florida's inmate management information system, which incorporates classification, began to take shape in 1982. That early classification procedure was replaced in 1992 with a validated system. The state replaced that system with its new Risk and Needs System in 1999 and its Custody Assessment and Reclassification System (CARS) in 2000.

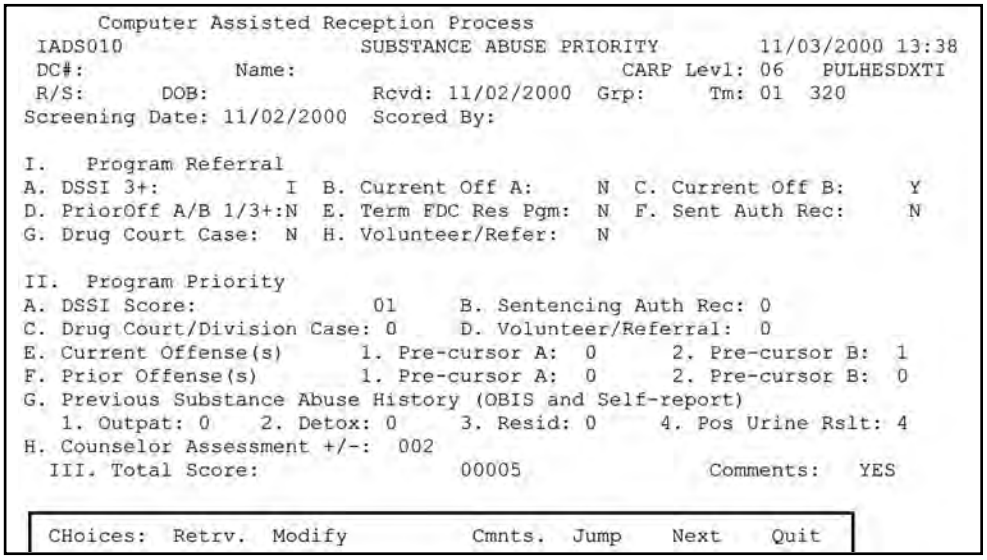
Florida's classification and related inmate management applications are principally based on its mainframe-driven Offender-Based Information System (OBIS), which is accessible by each facility. The two classification applications running under OBIS are CARS and the Risk and Needs System. OBIS is supplemented by mini-mainframe systems in each of the five reception and intake centers. The principal application is the Computer-Assisted Reception Process (CARP). All three classification applications are integrated to facilitate data sharing and lookups and to minimize redundant data entry. Future plans call for additional local area network (LAN) and wide area network (WAN) personal computer (PC)-based applications such as drug testing, enhanced visitation tracking, implementing drug interdiction, and identifying gang activity to augment and integrate with the current systems. Plans also call for these PC-based applications to incorporate artificial intelligence engines to identify gang, drug, and contraband patterns throughout the entire prison system and overlay color-coded analysis on global positioning system (GPS) maps of the system.

System Highlights

CARP

Classification staff in each of the reception centers use CARP. It inventories, in part, information about commitment, demographics, and criminal background to aid the classification officer in the initial development of an inmate transition plan and to determine any critical case management factors (e.g., high-profile case, escape risk, detainers, high violence risk). A comprehensive inventory of prior arrests and convictions is entered for each new inmate, including offense date, agency, offense, and disposition. Subsequent admissions of the same offender require a complete review and update of the previously entered criminal history. Data are passed between CARP and OBIS in both real time and batch form. CARP inventories various assessed needs, including a substance abuse priority determination that prioritizes referral to available treatment programs (exhibit B–1). CARP's main menu components include inmate identification, assessment results (education, special education, substance abuse, vocational), criminal background, personal background, case and inmate management, and health services.

Exhibit B–1. Substance Abuse Priority Screen (Florida DOC)



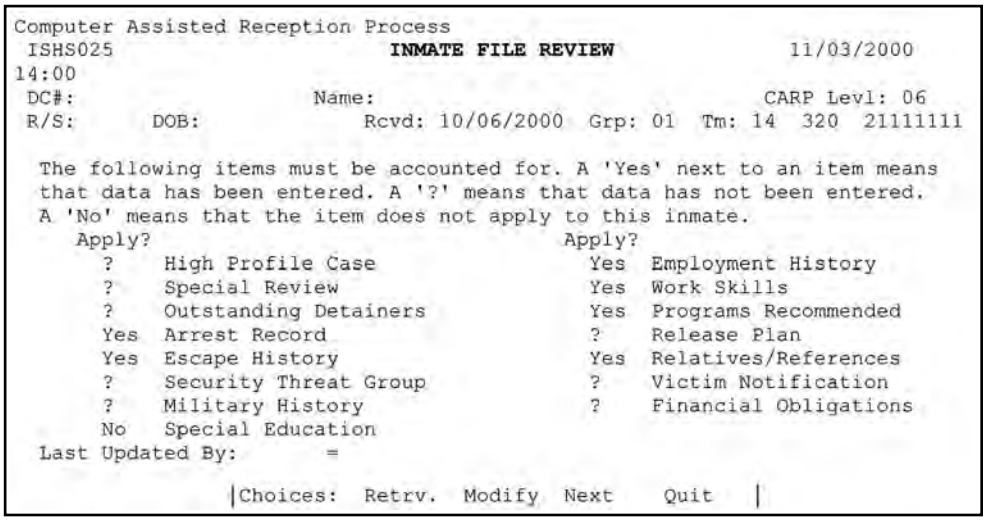
```
      Computer Assisted Reception Process
 IADS010                SUBSTANCE ABUSE PRIORITY        11/03/2000 13:38
 DC#:           Name:                              CARP Levl: 06   PULHESDXTI
 R/S:      DOB:             Rcvd: 11/02/2000  Grp:     Tm: 01  320
Screening Date: 11/02/2000  Scored By:

I.   Program Referral
A. DSSI 3+:          I  B. Current Off A:     N  C. Current Off B:     Y
D. PriorOff A/B 1/3+:N  E. Term FDC Res Pgm:  N  F. Sent Auth Rec:     N
G. Drug Court Case:  N  H. Volunteer/Refer:   N

II.  Program Priority
A. DSSI Score:              01     B. Sentencing Auth Rec: 0
C. Drug Court/Division Case: 0     D. Volunteer/Referral:  0
E. Current Offense(s)      1. Pre-cursor A:  0      2. Pre-cursor B:  1
F. Prior Offense(s)        1. Pre-cursor A:  0      2. Pre-cursor B:  0
G. Previous Substance Abuse History (OBIS and Self-report)
   1. Outpat: 0    2. Detox: 0     3. Resid: 0     4. Pos Urine Rslt: 4
H. Counselor Assessment +/-:  002
  III. Total Score:                00005              Comments:   YES

 CHoices:  Retrv.  Modify          Cmnts.  Jump    Next    Quit
```

The CARP "Inmate File Review" screen (exhibit B–2) is an example of an inventory checklist of information required before completing the CARP record.

CARS

The CARS classification module is custody driven. Its primary purpose is to facilitate and keep current the assignment of an inmate's external custody classification. Custody levels are maximum, close, medium, minimum, and community. CARS consists of a custody screen and an appointment screen as well as background functionality designed to alert staff when a new custody classification assessment is required.

Exhibit B–2. Inmate File Review Screen (Florida DOC)



```
Computer Assisted Reception Process
 ISHS025                    INMATE FILE REVIEW              11/03/2000
14:00
 DC#:                 Name:                                CARP Levl: 06
 R/S:      DOB:            Rcvd: 10/06/2000  Grp: 01  Tm: 14  320  21111111

 The following items must be accounted for. A 'Yes' next to an item means
 that data has been entered. A '?' means that data has not been entered.
 A 'No' means that the item does not apply to this inmate.
    Apply?                                Apply?
      ?    High Profile Case              Yes  Employment History
      ?    Special Review                 Yes  Work Skills
      ?    Outstanding Detainers          Yes  Programs Recommended
      Yes  Arrest Record                  ?    Release Plan
      Yes  Escape History                 Yes  Relatives/References
      ?    Security Threat Group          ?    Victim Notification
      ?    Military History               ?    Financial Obligations
      No   Special Education
 Last Updated By:       =

               |Choices:  Retrv.  Modify  Next    Quit   |
```

The classification officer completes the "Custody Classification" screen (exhibit B–3). Nine fields are completed by a classification officer, four fields are completed by a classification supervisor and institutional classification team (ICT), and numerous other fields are filled and scored automatically by the system. Based on new commitment information in conjunction with historical inmate data, the system automatically suggests a custody level. The classification officer, supervisor, or ICT can then accept or modify the suggested custody level based on aggravating or mitigating circumstances.

This screen is used repeatedly throughout the inmate's incarceration. The first classification type is "Initial." All subsequent custody decisions are then coded as "Reclass" (fifth line, "type" field). Each time this screen is used to change or review the inmate's custody, a log of the previous custody status is created, enabling staff to review the inmate's running custody classification history (exhibit B–4).

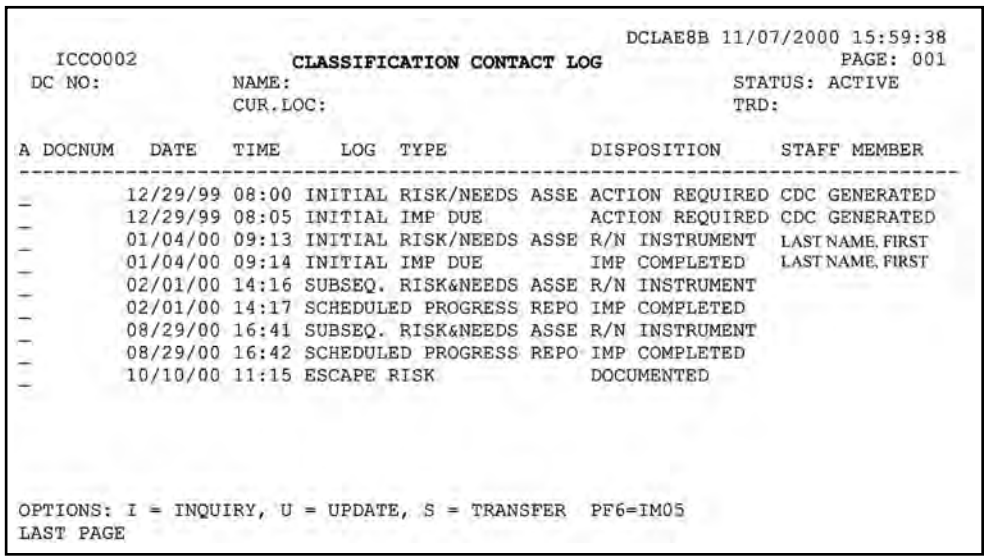
The fourth line in exhibit B–3 contains the "custody processing status" and "tentative release date" (TRD) fields. "Processing status" refers to a particular point in the custody assignment process from the beginning of an initial custody classification to final approval (e.g., initial classification, reclassification 90-day review, no modification of custody, high-risk modification, special medical needs modification). The system design also incorporates several automated decision rules in its functionality.

The next section of this screen (exhibit B–3), "Status Custody," automatically populates items 1, 2, and 3. These items identify an inmate as being placed at a particular custody or, because of an inmate's status, do not allow the inmate to fall below a particular custody regardless of any classification score. "High risk" refers to a designation of certain categories of inmates who will remain at no less than close custody. The system keeps track of numerous department policy decision rules and

Exhibit B–3. Custody Classification Screen (Florida DOC)

```
                                          DCLAE8B 11/06/2000 15:23:44
   ICCB013                CUSTODY CLASSIFICATION              PAGE: 001
DOC NO:          NAME:                                    STATUS: ACTIVE
PROCESSING STATUS: 67   CUR LOC:                          TRD:
CLASSIFICATION DATE:          TYPE: R = RECLASS   TEAM: 01  LOCATION:
SECTION I: STATUS CUSTODY
 1. MAXIMUM STATUS:  DEATH: N
 2. CLS STATUS: HR: N   SO A: N    VF DET: N P VF DET: N INS/MAR: N
              LEV 3,2 ESC.: N  ESC RISK: N IM4 OR 5: N
 3. MED STATUS:F DET: N P F DET: N L 1 ESC: N ESC A,B: N SO B: N TRD 10-15:N
SECTION II: CUSTODY SCORE
 4. SEVERITY OF OFFENSE LEVEL: CURRENT: 2  OTHER: 0                    010
 5. PFACT: D.     E.     F.     G.     H.     I.     J.     K.     L.   000
    INTERNAL MANAGEMENT LEVEL: 01 CRF ELIGIBLE: N          TOTAL SCORE:+010
    PRIOR CUSTODY: 4 = CLOSE      - 06/08/2000  SUGG. CUSTODY: 2 = MINIMUM
    TEAM EXCEPTIONS: 40  = CLOSE TO MIN.JU   RSN MIN CUSTODY 15 MTH NOADV RLD
    MODIFIED CUSTODY:  3 = MEDIUM            CONTINUE UNTIL DATE: 01/19/2001
    CLO:  XXX01 - LAST NAME, FIRST     10/17/2000          COM:   (PF4)
    SUPV. A/M  A 40  CLOSE TO MIN. ID:  XXXO1 - NAME           COM:   (PF5)
    ICT.  A/M  A 40  CLOSE TO MIN. ID:  XXX02 - NAME           COM:   (PF6)
    SCO.  A/M  A 40  CLOSE TO MIN. ID:  XXX03 - NAME           COM:   (PF7)

        DISPLAY COMPLETE
```

Exhibit B–4. Classification Contact Log Screen (Florida DOC)



```
                                                    DCLAE8B 11/07/2000 15:59:38
  ICCO002              CLASSIFICATION CONTACT LOG                    PAGE: 001
 DC NO:          NAME:                                  STATUS: ACTIVE
                 CUR.LOC:                               TRD:

A DOCNUM   DATE     TIME     LOG  TYPE            DISPOSITION      STAFF MEMBER
-------------------------------------------------------------------------------
_        12/29/99 08:00 INITIAL RISK/NEEDS ASSE ACTION REQUIRED CDC GENERATED
_        12/29/99 08:05 INITIAL IMP DUE         ACTION REQUIRED CDC GENERATED
_        01/04/00 09:13 INITIAL RISK/NEEDS ASSE R/N INSTRUMENT  LAST NAME, FIRST
_        01/04/00 09:14 INITIAL IMP DUE         IMP COMPLETED   LAST NAME, FIRST
_        02/01/00 14:16 SUBSEQ. RISK&NEEDS ASSE R/N INSTRUMENT
_        02/01/00 14:17 SCHEDULED PROGRESS REPO IMP COMPLETED
_        08/29/00 16:41 SUBSEQ. RISK&NEEDS ASSE R/N INSTRUMENT
_        08/29/00 16:42 SCHEDULED PROGRESS REPO IMP COMPLETED
_        10/10/00 11:15 ESCAPE RISK             DOCUMENTED



OPTIONS: I = INQUIRY, U = UPDATE, S = TRANSFER  PF6=IM05
LAST PAGE
```

automatically scores them if they apply to that inmate. Examples of policy decision rules include classifications of inmates currently under sentence of death, who will always be classified as maximum custody (maximum high risk). The classification "close status, high risk" includes inmates formerly under a death sentence, inmates serving a life sentence, inmates not within 15 years of release, some sex offenders, and violent offenders. "Medium status" refers to felons, inmates with lower level escape histories, lower level sex offenders, and inmates scheduled for release within 10–15 years.

Item 5 on the "Custody Classification" screen (exhibit B–3) refers to program factors. These items are designed to reward with negative points those inmates who meet certain stability factors and complete specified programs. Unsatisfactory behavior is sanctioned with positive points. The program automatically brings up the items and scores all but two automatically, using ongoing inmate information entered in the system over time. If the inmate does not have a computer-generated maximum or close status (computed policy decision rules), the program adds up the points and populates the "total score" field. If the inmate has a score of 10 or lower, the program automatically calculates whether the inmate is eligible for a community residential facility (CRF) (e.g., within so much time to release date, open detainers, disciplinary in last 90 days, inmate serving his fourth or higher commitment). If any items are computed as "yes," the program sets the "suggested custody" field to "Minimum" and the "CRF Eligible" flag to "no." If the suggested custody is minimum, the item(s) triggering CRF ineligibility are listed in the "RSN min custody" field. Suggested custody is the custody recommended by the program based on the status or numerical score of the inmate. The classification officer can then modify the automated suggested custody level, which is then reviewed by the classification supervisor, the ICT, and the state classification office (SCO). The classification officer can then modify the automated suggested custody level, which is then reviewed by the classification supervisor, ICT, and SCO.

The appointment log system in CARS is designed to keep track of an inmate during the custody process (initial and routine review custody classifications) as well as to alert classification officers of any change that would require a new custody review. The system automatically monitors any OBIS entries that could affect the custody of the inmate. If the entry could cause the inmate's custody to change, the system will create an appointment on the screen to indicate that a new custody review is required. If an OBIS entry occurs during processing that could change the inmate's final custody, the system will reset or send the process back to a classification officer's appointment log or halt the process completely, whichever is appropriate. The "Classification Appointment Log" screen is shown in exhibit B–5.

Exhibit B–5 shows a listing for each inmate in the designated facility who needs a custody review. Depending on the system query code entered by the user, a list of pending classification appointments will be generated for use by the classification officer, classification supervisor, ICT, or SCO. The reason for the appointment is coded in the "type" field (e.g., S0110 initial custody, S0113 90-day/6-month review, S0225 custody modified upward by classification officer, S0343 special medical need modification, S0349 modified custody approved by classification supervisor, S0450 approved community, minimum or modified custody by ICT). Once the appointment has been completed in CARS, it is dropped from the pending appointment list.

Risk and Needs System

With assistance from the Northeast Florida Center of Community Initiatives and the National Institute of Corrections, the Florida Department of Corrections Bureau of Inmate Classification and Central Records recently developed and implemented its new Risk and Needs System. This internal classification uses objective assessments (academic, vocational, and substance abuse, along with the inmate's risk factors) to determine internal placement decisions regarding housing, work assignments, and

Exhibit B–5. Classification Appointment Log Screen (Florida DOC)

```
IM05 0                          S01              DCLAE8B 11/06/2000 15:20:02
 IICB005                  CLASSIFICATION APPOINTMENT LOG

 LOC  :      NAME:


                                                    START  END
A   DC#     NAME                          DATE      TIME   TIME   TYPE    TEAM
_    XXXXX  XXXXX,XXXXX                01/19/2001  1536   1536   S0113   21101
_    XXXXX  XXXXX,XXXXX                01/19/2001  1545   1545   S0113   21101
_    XXXXX  XXXXX,XXXXX                01/19/2001  1537   1537   S0113   21101
_    XXXXX  XXXXX,XXXXX                01/19/2001  1554   1554   S0113   21101
_    XXXXX  XXXXX,XXXXX                04/19/2001  1527   1527   S0113   21101
_    XXXXX  XXXXX,XXXXX                01/19/2001  1555   1555   S0113   21101
_    XXXXX  XXXXX,XXXXX                01/19/2001  1553   1553   S0113   21101
_    XXXXX  XXXXX,XXXXX                01/19/2001  1541   1541   S0113   21101
_    XXXXX  XXXXX,XXXXX                04/19/2001  1544   1544   S0113   21101
_    XXXXX  XXXXX,XXXXX                05/01/2001  1055   1055   S0113   21102

 PF2=1ST PAGE    PF3=CLEAR DOC#/NAME   PF4=REPEAT 1ST LINE  PF5=USER ID
 PF7=PAGE BACK   PF8=PAGE FORWARD      ENTER=PROCESS  (S=LOG ENTRY / X=IM02)
```

programs. Completing the Risk and Needs System requires the collection of information through a face-to-face interview with the inmate and through official data previously entered in OBIS. The information compiled and scored in the Risk and Needs System serves as the basis for the Inmate Management Plan.

Data gathering and automation in the Risk and Needs System are broken down into five sections:

1. *Internal management:* Gang or hate group membership and determination of any knowledge of other inmates involved in gang or hate group activity.

2. *Outside influences:* Escape risk associated with personal/family crises and situational factors.

3. *Attitude and motivation:* General interest in and motivation to participate in treatment programs and work assignments in preparation of the Inmate Management Plan.

4. *Internal management/risk assessment:* Overall assessment of internal risk based on current violence and the inmate's responses to and demeanor regarding the previous three sections. The interviewer (classification officer) uses the Adult Internal Management System (AIMS) personality types criteria as a basis for scoring the inmate.

5. *Restructuring potential (RP):* Once data for the previous four sections have been entered, the program automatically scores the inmate's RP based on all pertinent data contained in OBIS. The RP score relies heavily on attitude, motivation, and factors suggested as potential indicators for prioritizing the inmate's program placement.

The following are screen shots of the Risk and Needs System. Gang data (exhibit B–6) inventories both initial and subsequent information about membership in a security threat group (STG). Data entry coding (A, B, C, etc.) categorizes the information (e.g., A = inmate indicated membership; B = inmate allies with a gang; C = enemies of inmate's gang).

Exhibit B–7 shows the "Offender Management Comments" screen pertaining to gang affiliation. This screen may be used to enter comments at various stages of inmate processing.

The following two data entry screens in the Risk and Needs System inventory and automatically score outside influences, attitude and motivation, internal management, and RP. In exhibit B–8, outside influences are entered using values A through C or D for each item. The corresponding point value (0, 1, 2, or 3) is then entered by the system. The program then automatically sums this section.

Section III of the "Inmate Risk and Needs Assessment" screen (part 2) (exhibit B–9) inventories the inmate's attitude toward working and participating in programs and

Exhibit B–6. Inmate Risk and Needs Gang Data Screen (Florida DOC)

```
IM41                                                DCLAE8B  11/06/2000
16:15:20
    IRNB002          INMATE RISK & NEEDS (GANG DATA)    PAGE   1

  DC#:        NAME:                                      EXT.STA: ACTIVE
  TRD:
       CUR.LOC:             TEAM: 03 CUSTODY: CLO  WK.ASG:     INT.STA:

 I. ASSESSMENT DATE: 04/29/1999     STAFF ID:  XXXXX - LAST NAME, FIRST
    A. INITIAL S.T.G. INFO: Y       B.  SUBSEQUENT S.T.G. INFO:

 ACTION SEQ  CATEGORY                          NAME OF GANG OR GROUP
        01   A INMATE INDICATED GANG MEM      FOLK NATION
                  PLACE OF AFFILIATION: STREET:
                  CITY: LAKELAND               STATE: FL = FLORIDA
                  PRISON:

                  PLACE OF AFFILIATION: STREET:
                  CITY:                        STATE:    =
                  PRISON:

                  PLACE OF AFFILIATION: STREET:
                  CITY:                        STATE:    =
                  PRISON:
 STAFF COMMENT(?): Y   (PF11)
```

his or her motivation to do so. Entries are coded A (interested in participating in all recommended programs) through D (not recommended to participate in any programs during incarceration). The inmate's first, second, and third choices for programs and work assignments (items 2 and 3 on the screen) are entered. The classification officer then rates the inmate's interest and motivation (item 4) based on the interview/assessment and interaction as good, fair, or poor. Section IV of this screen requires the classification officer to again verify (entering "yes" or "no") whether the inmate was convicted of a violent felony during the current incarceration. The officer then enters an overall subjective classification (CPO) assessment score of the inmate's internal management risk. The system then

Exhibit B–7. Offender Management Comments Screen (Florida DOC)

```
OT49 0                                          DCLAE8B   11/06/2000
16:19:05
    OTSB049          OFFENDER MANAGEMENT COMMENTS              PAGE 001

  DC NO:          NAME:                                   STATUS: ACTIVE
                  CUR.LOC:                                TRD:

 RECORD: 00000001                  LABEL:        40            IRY-11/0
 COMMENT TYPE: N04 = CPO REVIEW COMMENT (R&N)

 ACT LINE                          COMMENTS
 ------------------------------------------------------------------------
--
     01   INMATE HAS A FOLK NATION TATTOO ON HIS BACK.  INMATE STATED
     02   HE USED TO BE A MEMBER OF THE FOLK NATION.  AN "STG" FORM WAS
     03   COMPLETED AND DELIVERED TO THE INSTITUTION INSPECTOR FOR
     04   FURTHER ACTION/INVESTIGATION.
```

Exhibit B–8. Inmate Risk and Needs Assessment Screen (Part 1) (Florida DOC)

```
IM42                                              DCLAE8B  11/06/2000 16:20:12
   IRNB007                INMATE RISK & NEEDS (1/2)                    PAGE   1
 DC#:                NAME:                      EXT.STA: ACTIVE      TRD:
      CUR.LOC:                    TEAM: 03  CUSTODY: CLO  WK.ASG:      INT.STA:

   ASSESSMENT DATE: 04/29/1999   SCORED BY: XXXX-LAST NAME, FIRST NAME

I.B.1. FAMILY RELATIONSHIPS:    A = POSITIVE INFLU     3 POINTS
    2. CONCERN FOR CHILDREN:    B = N/A                2 POINTS
    3. INTIMATE RELATIONSHIPS: A = POSITIVE INFLU     3 POINTS
    4. ASSOCIATES/FRIENDS:      C = NEGATIVE INFLU     1 POINTS
    5. ENEMIES:                 B = IS NOT SURE        2 POINTS
    6. ATTORNEY/LEGAL REP:      C = NEGATIVE RELAT     1 POINTS
    7. OTHERS:                  C = NEGATIVE INFLU     1 POINTS

OI SCORE: 4  =  NEU. TO NEG. INFLU.           TOTAL  13 POINTS




                                                F1=IRN SCREENS,F2=IM41,F3=IM43
        DISPLAY COMPLETE
```

automatically determines the inmate's RP score based on information keyed in the "Inmate Risk and Needs Assessment" screens and the inmate's targeted outdate. The coded RP score, ranging from –2 to 5, includes programs recommended and high motivation, programs recommended but low motivation, and recommended for special education.

Inmate Management Plan

Based on risk and needs assessment, the Inmate Management Plan is developed. This plan is the means by which classification decisions are made and documented

Exhibit B–9. Inmate Risk and Needs Assessment Screen (Part 2) (Florida DOC)

```
IM43                                              DCLAE8B   11/07/2000 15:53:09
   IRNB003                INMATE RISK & NEEDS (2/2)                    PAGE   1
 DC#:        NAME:                            EXT.STA: ACTIVE      TRD:
     CUR.LOC:                    TEAM: 03  CUSTODY: CLO  WK.ASG:      INT.STA:
   ASSESSMENT DATE: 09/03/1999   REVIEWED BY: XXXX-LAST NAME, FIRST NAME
III. ATTITUDE AND MOTIVATION
     1. INTERESTED IN PARTICIPATING IN:  D = N/A,NO PROGRAM RECOMMENDATIONS
     2. PREFERRED PROGRAMS: 1ST:          =
                            2ND:          =
                            3RD:          =
     3. WORK ASSIGN OR PREFERENCE:  A     = YES,INMATE HAS WORK PREFERENCE
        PREFERRED WORK ASG: 1ST: M05      = CARPENTRY
                            2ND:          =
                            3RD:          =
     4. INTEREST AND MOTIVATION: B        = FAIR
                       AM SCORE: 1        = LOW MOTIVATN FOR PGM
 IV. INTERNAL MANAGEMENT
     1. VIOL. FEL CONV.(IN PRISON): N
     2. CPO ASSESSMENT SCORE: 1           = POTENTIAL VERY LOW R
  V. RESTRUCTURING POTENTIAL
                    RP SCORE: 2           = LOW-NEU PRIORITY FOR
                                              F1=IRN SCREENS,F2=IM42,F3=IM44
        DISPLAY COMPLETE                      F4=IM02  F6=IM05,
```

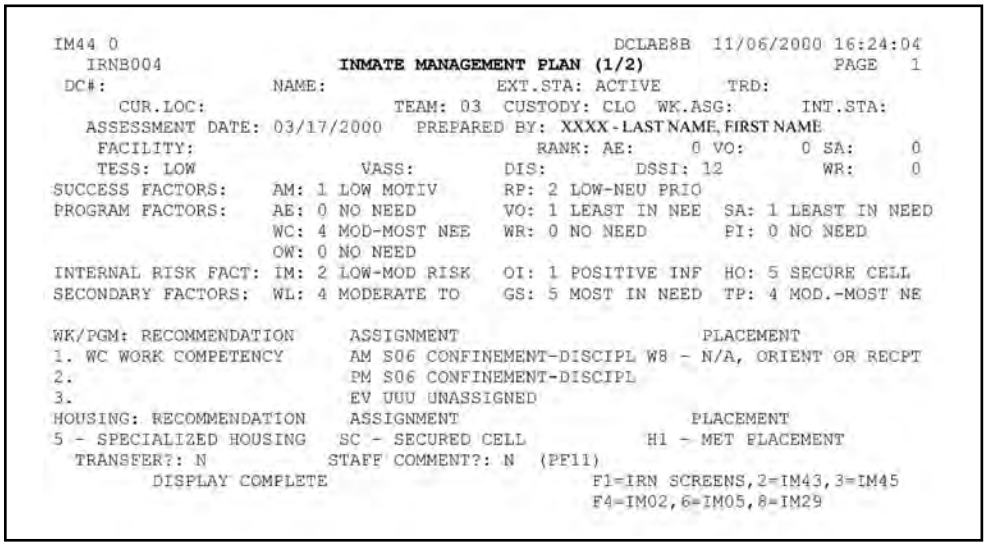
and by which progress is tracked throughout incarceration. Management plans are reviewed at least every 12 months. The plan comprises primary work or program recommendations, housing recommendations, and goals and objectives to be achieved during incarceration.

Exhibit B–10 shows part 1 of the "Inmate Management Plan" data screen.

Field descriptions are as follows:

- *TESS:* Targeted education services score.
- *VASS:* This is a future field that will display results of the vocational assessment instrument, which is in the process of implementation.
- *DIS:* Drug initial screening (the initial four-question screening) score.
- *DSSI:* Drug simple screening instrument (12 questions following a positive response to at least 1 of the 4 original questions asked during DIS) score. This score is not saved in the database for historical purposes but is saved for viewing during the assessment process.
- *Success factors:* Scores related to success factors designed to rate the inmate's relative likelihood of benefiting from program participation. These factors are attitude and motivation (AM) and RP.
- *Program factors:* Scores related to program factors designed to indicate the inmate's need for program participation. These factors are academic education (AE), vocational education (VO), and substance abuse treatment (SA).

Exhibit B–10. Inmate Management Plan Screen (Part 1) (Florida DOC)



```
IM44 0                                              DCLAE8B  11/06/2000 16:24:04
   IRNB004              INMATE MANAGEMENT PLAN (1/2)                    PAGE   1
 DC#:              NAME:                EXT.STA: ACTIVE      TRD:
      CUR.LOC:                TEAM: 03  CUSTODY: CLO  WK.ASG:      INT.STA:
   ASSESSMENT DATE: 03/17/2000   PREPARED BY: XXXX - LAST NAME, FIRST NAME
    FACILITY:                              RANK: AE:     0 VO:     0 SA:     0
    TESS: LOW              VASS:        DIS:        DSSI: 12         WR:     0
SUCCESS FACTORS:    AM: 1 LOW MOTIV      RP: 2 LOW-NEU PRIO
PROGRAM FACTORS:    AE: 0 NO NEED        VO: 1 LEAST IN NEE  SA: 1 LEAST IN NEED
                    WC: 4 MOD-MOST NEE   WR: 0 NO NEED       PI: 0 NO NEED
                    OW: 0 NO NEED
INTERNAL RISK FACT: IM: 2 LOW-MOD RISK   OI: 1 POSITIVE INF  HO: 5 SECURE CELL
SECONDARY FACTORS:  WL: 4 MODERATE TO    GS: 5 MOST IN NEED  TP: 4 MOD.-MOST NE

WK/PGM: RECOMMENDATION     ASSIGNMENT                    PLACEMENT
1. WC WORK COMPETENCY      AM S06 CONFINEMENT-DISCIPL W8 - N/A, ORIENT OR RECPT
2.                         PM S06 CONFINEMENT-DISCIPL
3.                         EV UUU UNASSIGNED
HOUSING: RECOMMENDATION    ASSIGNMENT                    PLACEMENT
5 - SPECIALIZED HOUSING    SC - SECURED CELL          H1 - MET PLACEMENT
  TRANSFER?: N           STAFF COMMENT?: N  (PF11)
        DISPLAY COMPLETE                        F1=IRN SCREENS,2=IM43,3=IM45
                                                F4=IM02,6=IM05,8=IM29
```

- *Internal risk factors:* Scores related to internal risk factors designed to rate the inmate's relative likelihood of presenting an internal management risk. These factors are internal management (IM), outside influences (OI), and housing (HO).

- *Secondary factors:* Scores related to secondary factors designed to rate the inmate's relative likelihood of benefiting from secondary program participation. These factors are wellness (WL), go-lab or life skills (GS), and transition programs (TP).

- *WK/PGM recognition:* Based on the results of the primary program assessments, the risk and needs instrument assessment, and the RP score, the system makes up to three work or program recommendations in priority order.

- *Work/program assignment:* The inmate's current work and/or program assignment(s).

- *Placement results:* Based on a comparison of the inmate's current work or program assignment with the primary work or program recommendations, the system will display the success at placing the inmate in one of the three primary work or program recommendations. If the inmate was not placed in one of the three primary work or program recommendations, the CPO selects and enters the reason for an alternative placement result (e.g., W1 = met first system-generated recommendation; W2 = met second system-generated recommendation; W7 = program not available at this facility).

- *Housing recommendation:* Based on the inmate's HO, the system displays one of the following objective housing-placement recommendations:

  - Secure cell or specialized: Placement required (HO=5).

  - Secure cell or room: Placement suggested (HO = 4).

  - Room or open bay: Room or open bay suggested (HO = 3).

  - Open bay: Open bay suggested (HO=1 or 2).

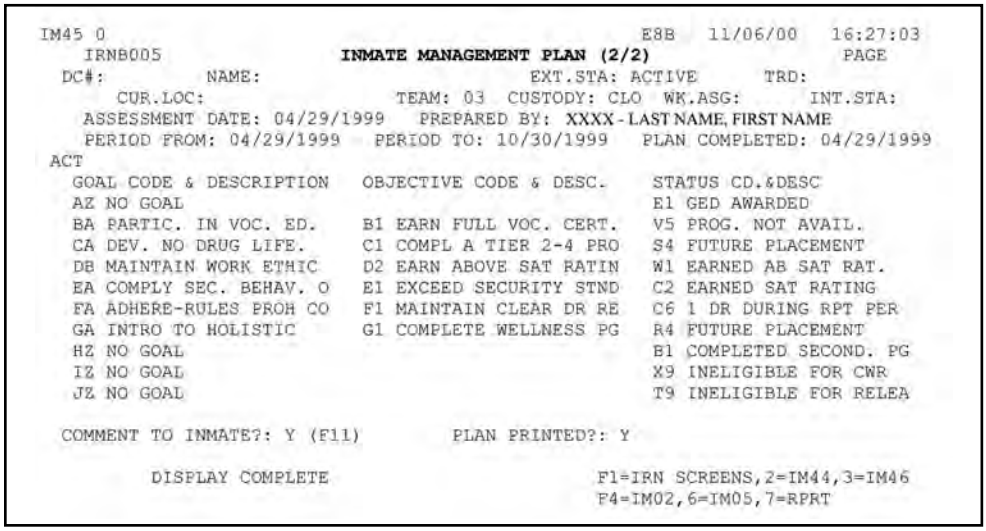
- *Housing assignment (bed type):* The inmate's current housing type.

Part 2 of the "Inmate Management Plan" screen (exhibit B–11) is used to document the objectives for the inmate's next reporting period, based on goals developed for the inmate and his or her current progress toward meeting each goal.

Field descriptions are as follows:

- *Goal code and description:* The code of the given goal followed by a description of the goal. The goal is developed by the system and cannot be modified by staff.

Exhibit B–11. Inmate Management Plan Screen (Part 2) (Florida DOC)



```
IM45 0                                              E8B   11/06/00   16:27:03
   IRNB005                INMATE MANAGEMENT PLAN (2/2)                  PAGE
 DC#:          NAME:                        EXT.STA: ACTIVE      TRD:
     CUR.LOC:                  TEAM: 03  CUSTODY: CLO  WK.ASG:      INT.STA:
   ASSESSMENT DATE: 04/29/1999   PREPARED BY: XXXX - LAST NAME, FIRST NAME
   PERIOD FROM: 04/29/1999   PERIOD TO: 10/30/1999   PLAN COMPLETED: 04/29/1999
ACT
  GOAL CODE & DESCRIPTION   OBJECTIVE CODE & DESC.    STATUS CD.&DESC
  AZ NO GOAL                                         E1 GED AWARDED
  BA PARTIC. IN VOC. ED.    B1 EARN FULL VOC. CERT.  V5 PROG. NOT AVAIL.
  CA DEV. NO DRUG LIFE.     C1 COMPL A TIER 2-4 PRO  S4 FUTURE PLACEMENT
  DB MAINTAIN WORK ETHIC    D2 EARN ABOVE SAT RATIN  W1 EARNED AB SAT RAT.
  EA COMPLY SEC. BEHAV. O   E1 EXCEED SECURITY STND  C2 EARNED SAT RATING
  FA ADHERE-RULES PROH CO   F1 MAINTAIN CLEAR DR RE  C6 1 DR DURING RPT PER
  GA INTRO TO HOLISTIC      G1 COMPLETE WELLNESS PG  R4 FUTURE PLACEMENT
  HZ NO GOAL                                         B1 COMPLETED SECOND. PG
  IZ NO GOAL                                         X9 INELIGIBLE FOR CWR
  JZ NO GOAL                                         T9 INELIGIBLE FOR RELEA

 COMMENT TO INMATE?: Y (F11)        PLAN PRINTED?: Y

        DISPLAY COMPLETE                      F1=IRN SCREENS,2=IM44,3=IM46
                                              F4=IM02,6=IM05,7=RPRT
```

- *Objective code and description:* The code of the given objective followed by a description of the objective. The system provides a default objective, and the CPO is responsible for accepting or modifying the objective. The objective constitutes the department's expectations for the inmate during the reporting period (see "Period From" and "Period To").

- *Status code and description:* The code of the given status followed by a description of the status. The system either identifies the status through OBIS criteria or requires CPO to select an appropriate status.

- *Comment to inmate?* Pressing the F11 key prompts the system to transfer to free-flow text comments (the same function as shown in exhibit B–7). These comments will display on the inmate notice. The CPO enters any noteworthy information pertaining to the inmate interview and Inmate Management Plan. See exhibit B–12.

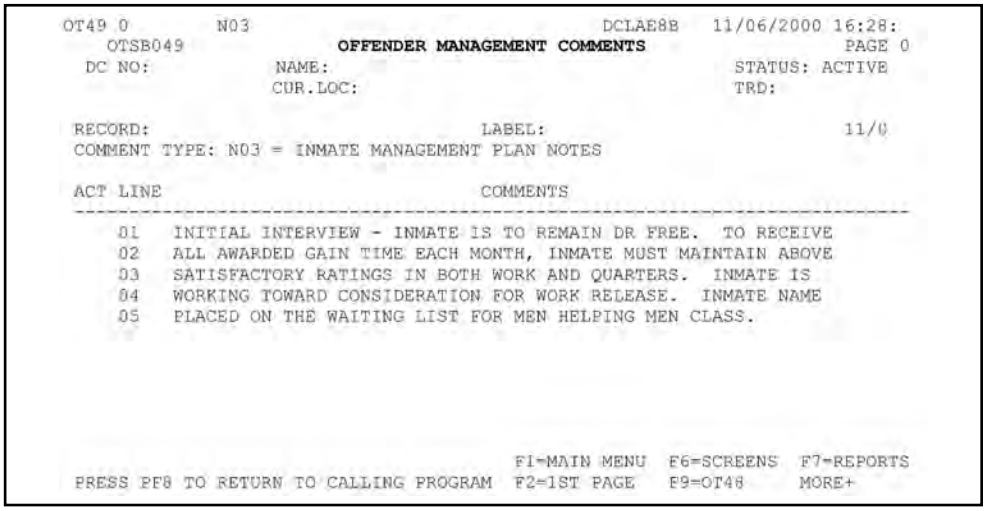
Program Tracking

The last selected highlight of the Florida system is its program-tracking feature. Inmates are enrolled in programs using the "Inmate Program Participation" screen (exhibit B–13). This screen also provides a running inventory of all program participation during the current incarceration.

A slightly more detailed "Substance Abuse Program Participation" data entry screen is used for alcohol and drug programs (exhibit B–14).

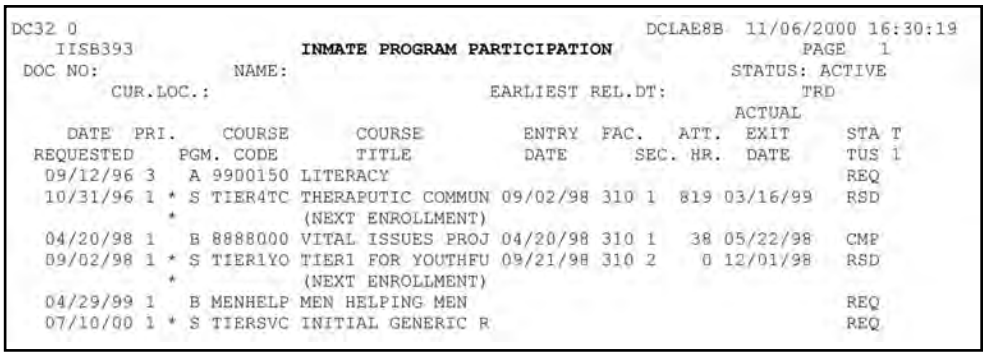
The system also enables staff to look up the history of the inmate's enrollment and participation in programs (exhibit B–15).

Exhibit B–12. Offender Management Comments Screen (Florida DOC)



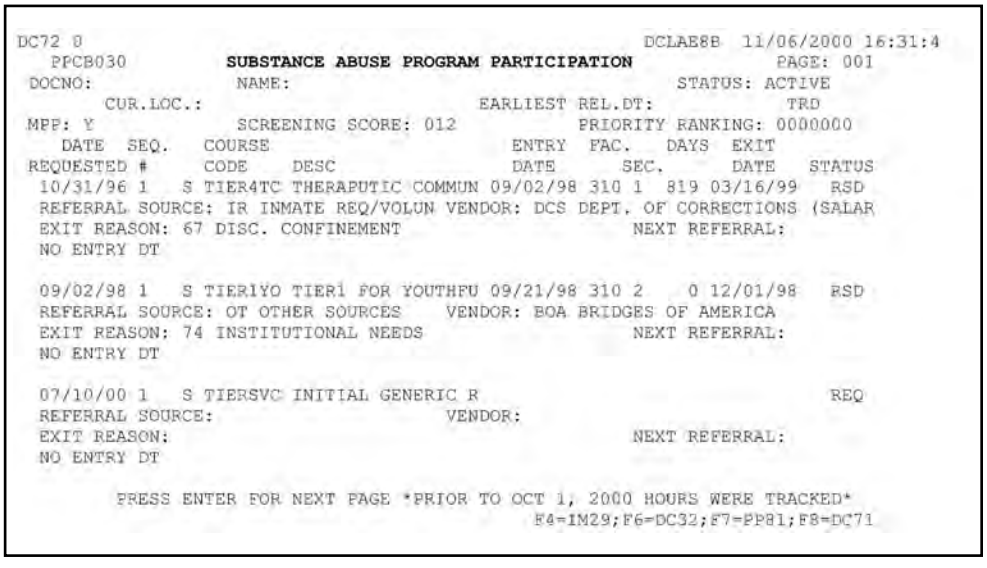
```
OT49 0        N03                                  DCLAE8B   11/06/2000 16:28:
   OTSB049              OFFENDER MANAGEMENT COMMENTS                  PAGE 0
  DC NO:          NAME:                                   STATUS: ACTIVE
                  CUR.LOC:                                TRD:

 RECORD:                                LABEL:                              11/0
 COMMENT TYPE: N03 = INMATE MANAGEMENT PLAN NOTES

 ACT LINE                               COMMENTS
 ------------------------------------------------------------------------------
     01   INITIAL INTERVIEW - INMATE IS TO REMAIN DR FREE.  TO RECEIVE
     02   ALL AWARDED GAIN TIME EACH MONTH, INMATE MUST MAINTAIN ABOVE
     03   SATISFACTORY RATINGS IN BOTH WORK AND QUARTERS.  INMATE IS
     04   WORKING TOWARD CONSIDERATION FOR WORK RELEASE.  INMATE NAME
     05   PLACED ON THE WAITING LIST FOR MEN HELPING MEN CLASS.




                                        F1=MAIN MENU  F6=SCREENS  F7=REPORTS
 PRESS PF8 TO RETURN TO CALLING PROGRAM  F2=1ST PAGE   F9=OT48     MORE+
```

Exhibit B–13. Inmate Program Description Screen (Florida DOC)



```
DC32 0                                                  DCLAE8B  11/06/2000 16:30:19
   IISB393              INMATE PROGRAM PARTICIPATION                  PAGE   1
 DOC NO:          NAME:                                        STATUS: ACTIVE
       CUR.LOC.:                          EARLIEST REL.DT:          TRD
                                                                   ACTUAL
    DATE  PRI.    COURSE      COURSE          ENTRY  FAC.   ATT.  EXIT      STA T
 REQUESTED    PGM. CODE       TITLE           DATE       SEC. HR.  DATE      TUS 1
  09/12/96 3   A 9900150 LITERACY                                             REQ
  10/31/96 1 * S TIER4TC THERAPUTIC COMMUN 09/02/98 310 1  819 03/16/99    RSD
           *             (NEXT ENROLLMENT)
  04/20/98 1   B 8888000 VITAL ISSUES PROJ 04/20/98 310 1   38 05/22/98    CMP
  09/02/98 1 * S TIER1YO TIER1 FOR YOUTHFU 09/21/98 310 2    0 12/01/98    RSD
           *             (NEXT ENROLLMENT)
  04/29/99 1   B MENHELP MEN HELPING MEN                                     REQ
  07/10/00 1 * S TIERSVC INITIAL GENERIC R                                   REQ
```

Exhibit B–14. Substance Abuse Program Participation Screen (Florida DOC)



```
DC72 0                                                  DCLAE8B  11/06/2000 16:31:4
   PPCB030          SUBSTANCE ABUSE PROGRAM PARTICIPATION            PAGE: 001
 DOCNO:             NAME:                                    STATUS: ACTIVE
       CUR.LOC.:                          EARLIEST REL.DT:          TRD
 MPP: Y          SCREENING SCORE: 012                PRIORITY RANKING: 0000000
    DATE  SEQ.   COURSE                    ENTRY  FAC.   DAYS  EXIT
 REQUESTED #     CODE    DESC              DATE       SEC.      DATE   STATUS
  10/31/96 1   S TIER4TC THERAPUTIC COMMUN 09/02/98 310 1  819 03/16/99   RSD
  REFERRAL SOURCE: IR INMATE REQ/VOLUN VENDOR: DCS DEPT. OF CORRECTIONS (SALAR
  EXIT REASON: 67 DISC. CONFINEMENT                  NEXT REFERRAL:
  NO ENTRY DT

  09/02/98 1   S TIER1YO TIER1 FOR YOUTHFU 09/21/98 310 2    0 12/01/98   RSD
  REFERRAL SOURCE: OT OTHER SOURCES    VENDOR: BOA BRIDGES OF AMERICA
  EXIT REASON: 74 INSTITUTIONAL NEEDS                NEXT REFERRAL:
  NO ENTRY DT

  07/10/00 1   S TIERSVC INITIAL GENERIC R                                   REQ
  REFERRAL SOURCE:                   VENDOR:
  EXIT REASON:                                       NEXT REFERRAL:
  NO ENTRY DT

        PRESS ENTER FOR NEXT PAGE *PRIOR TO OCT 1, 2000 HOURS WERE TRACKED*
                                        F4=IM29;F6=DC32;F7=PP81;F8=DC71
```

Exhibit B–15. Program Enrollment by Inmate Screen (Florida DOC)

```
DC31                                                        DCLAE8B 11/06/2000 16:34:26
   IISB394              PROGRAM ENROLLMENT BY INMATE                    PAGE   1
FACILITY NO:       NAME:
PROGRAM: A   COURSE: 9900004 ADULT BASIC ED.        SECTION:     MAX.# STU: 000
TIMEFRAME: AM HRS/DAY:  3  DAYS SCH:  5 / W  CRSE LGTH: 9999  STATUS: ACTIVE

    ENTRY                                  ATT.  PROJECTED  ATTENDANCE HRS MET
    DATE      DOC NO.  INMATE NAME         HRS.  EXIT DATE       MO
_ 09/27/2000  ZZZZZZ  XXXXXXX, XXXXXX       54  09/25/2002    ___
_ 06/14/2000  ZZZZZZ  XXXXXXX, XXXXXX      210  07/06/2001    ___
_ 09/27/2000  ZZZZZZ  XXXXXXX, XXXXXX        9  07/07/2001    ___
_ 10/05/2000  ZZZZZZ  XXXXXXX, XXXXXX      771  99/99/9999    ___
_ 09/27/2000  ZZZZZZ  XXXXXXX, XXXXXX      645  99/99/9999    ___
_ 10/05/2000  ZZZZZZ  XXXXXXX, XXXXXX        0  09/25/2018    ___
_ 09/06/2000  ZZZZZZ  XXXXXXX, XXXXXX      363  11/13/2001    ___
_ 10/16/2000  ZZZZZZ  XXXXXXX, XXXXXX      309  04/29/2004    ___
_ 10/27/2000  ZZZZZZ  XXXXXXX, XXXXXX      648  01/15/2007    ___
_ 09/27/2000  ZZZZZZ  XXXXXXX, XXXXXX      534  07/07/2002    ___
_ 09/06/2000  ZZZZZZ  XXXXXXX, XXXXXX      237  06/19/2012    ___
_ 09/27/2000  ZZZZZZ  XXXXXXX, XXXXXX       30  99/99/9999    ___
_ 09/06/2000  ZZZZZZ  XXXXXXX, XXXXXX      315  03/06/2019    ___
        PRESS ENTER FOR NEXT PAGE
```

Appendix C: New Jersey Department of Corrections Summary

New Jersey Department of Corrections
Director, Office of Policy and Planning
Assistant Chief, Bureau of Correctional Information and Classification Services
P.O. Box 863
Trenton, NJ 08625
609–984–4578

General System Overview

The New Jersey prison system comprises 14 main facilities and approximately 30,100 inmates. The New Jersey Department of Corrections (NJDOC) has recently been converting its inmate management system, with phase 1 of the project completed. The old system comprised two major systems: (1) Offender-Based Correctional Information System (OBCIS), which was a mainframe system that tracked offender identification, demographics, characteristics and offender data from intake to release from parole; and (2) a System 36 Correctional Management Information System (CMIS), which provided detailed incarceration information, including sentence tracking, disciplines, and time credits but was not Y2K compliant.

With the completion of phase 1 of the system upgrade, expedited by the need to solve the Y2K problem, the System 36 CMIS was replaced in November 1999 by the wide area network/local area network-based (WAN/LAN-based) iTAG system, a commercial inmate-management package created by Syscon Justice Systems. Phase 2 calls for the replacement of OBCIS in 3–5 years. The new iTAG inmate-processing functions include ID and security, classification, housing/movement, release, sentencing, and transportation.

In addition to the main inmate management system components, OBCIS and the iTAG system, New Jersey's system includes four commercial personal computer (PC)/LAN system modules: Health Services, provided by Medical Logic; Custody Officer Scheduling, provided by Interpro; and Oracle Human Resources and Training Administration and Document Imaging, provided by FileNet. These four inmate management system components, along with Inmate Financials, were linked together by Venture Technology, a systems integrator. These five systems constitute the overall DOC management information system (DOCMIS).

A unique inmate reception/processing feature in New Jersey is the interaction with the state's county jails. Identification teams go to the county jails on a weekly/biweekly basis. Before the inmate arrives at the Central Reception and Assignment Facility (CRAF), the identification officer visits the county jail to interview, photograph, and fingerprint the inmate. The identification officer interviews the inmate to acquire basic identifying information. The identification officer also receives all court documents. The paperwork is returned to CRAF the same day, and the data staff enter the information into the iTAG system. At this time, a booking number is also assigned. A classification file is created and kept in the county files until the inmate is either transferred to CRAF or released from the county jail.

System Highlights

A primary feature of the iTAG inmate management system design is the graphical user interface, PC-based system that operates in a Microsoft Windows environment and uses a single relational database. The system offers a good example of the newer, "friendlier" point-and-click interfaces mentioned previously in this manual.

Point-and-click, drop-down main menus and submenus are used throughout the software's navigation, as shown in exhibits C–1 and C–2. The user clicks on the main menu option "Institutions," then selects the desired menu task "Booking," which drills down to specific processing-function choices within that submenu.

Similarly, in exhibit C–2, the main menu option "Institutions" is selected, then the general "Classification" submenu is highlighted, which then lists the task options available.

Admissions data screens, utilized by CRAF staff, are similarly accessed by point-and-click menus and task submenus. The following screen shots, exhibits C–3 and C–4, are examples of this system's user-friendly, uncluttered look. Admissions data entry is broken down into several screens, all with the same navigation features. Note the drop-down windows tied to each coded field (identified by a down arrow [↓] or other icon [▦]).

Each coded field in the system is easily configurable and changeable by the system manager. This promotes greater flexibility in adding changes "on the fly" to the system as the need dictates. An example of this is shown in the configuration table for the field "race" (exhibit C–5).

Two other features of the system regarding inmate admissions and intake are the integrated inmate identification and initial medical/mental health screening. The iTAG system features a photo-imaging and physical-marks component that is

Exhibit C–1. Main Menu, Booking Submenu Screen (New Jersey DOC)

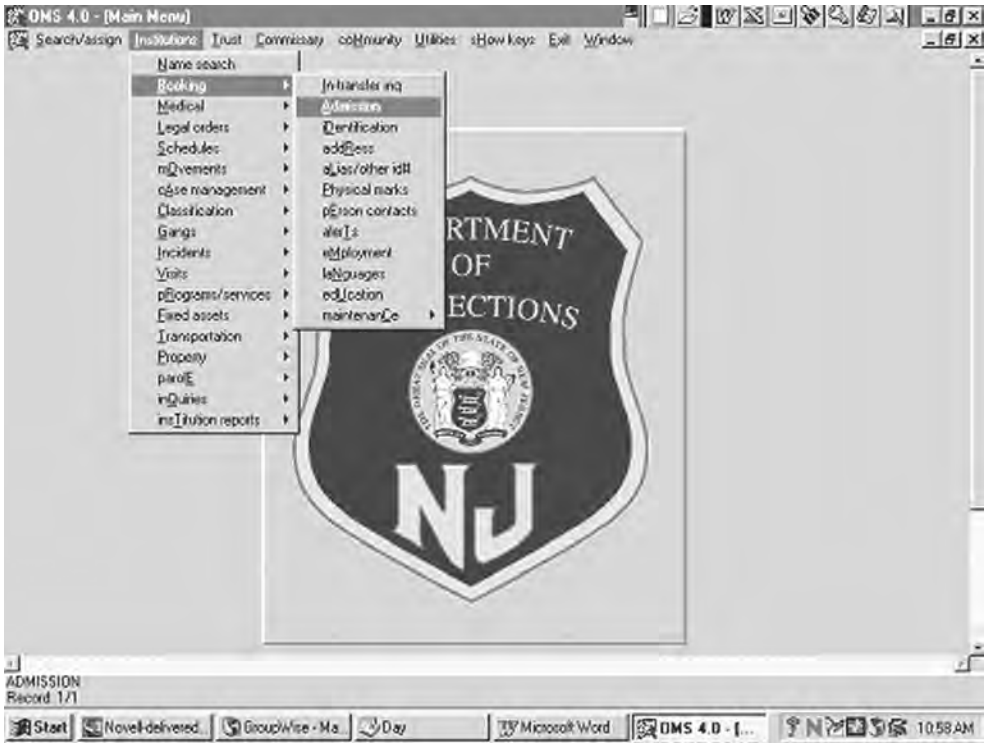


Exhibit C–2. Main Menu, Classification Submenu Screen (New Jersey DOC)

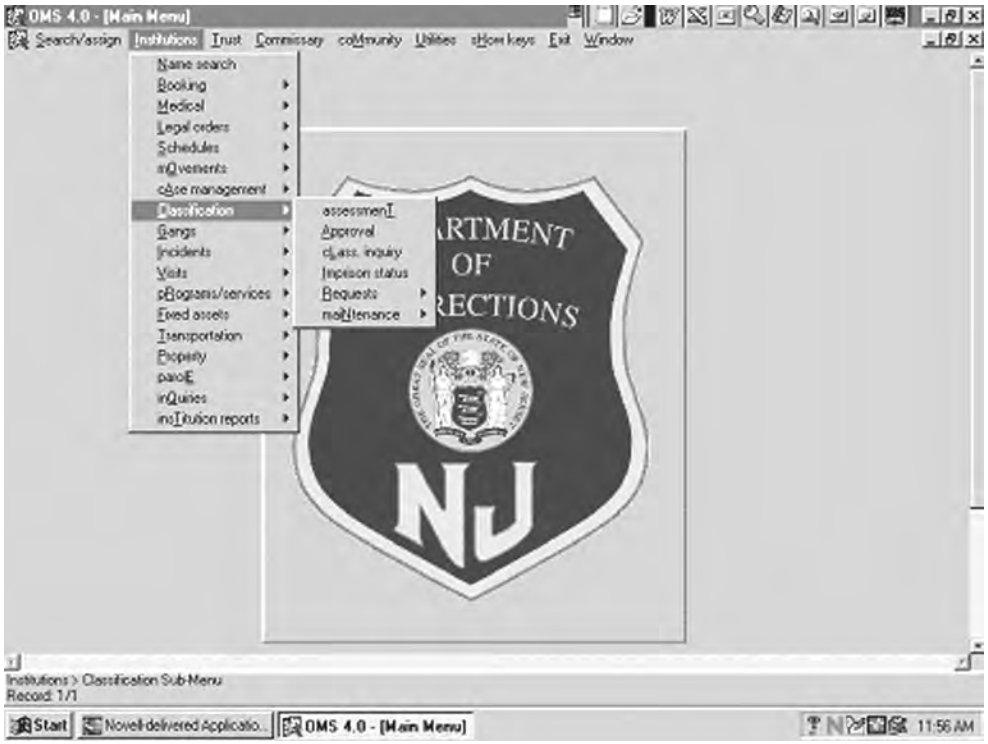


Exhibit C–3. Booking Assign Offender Demographics Screen (New Jersey DOC)

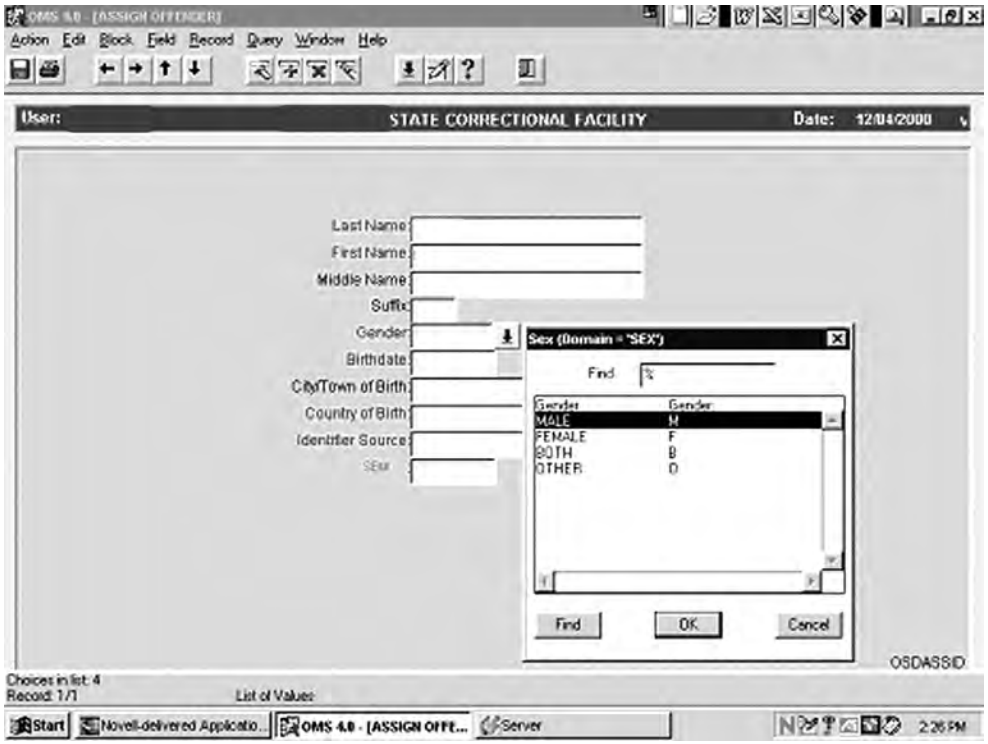


Exhibit C–4. Admission Details Screen (New Jersey DOC)

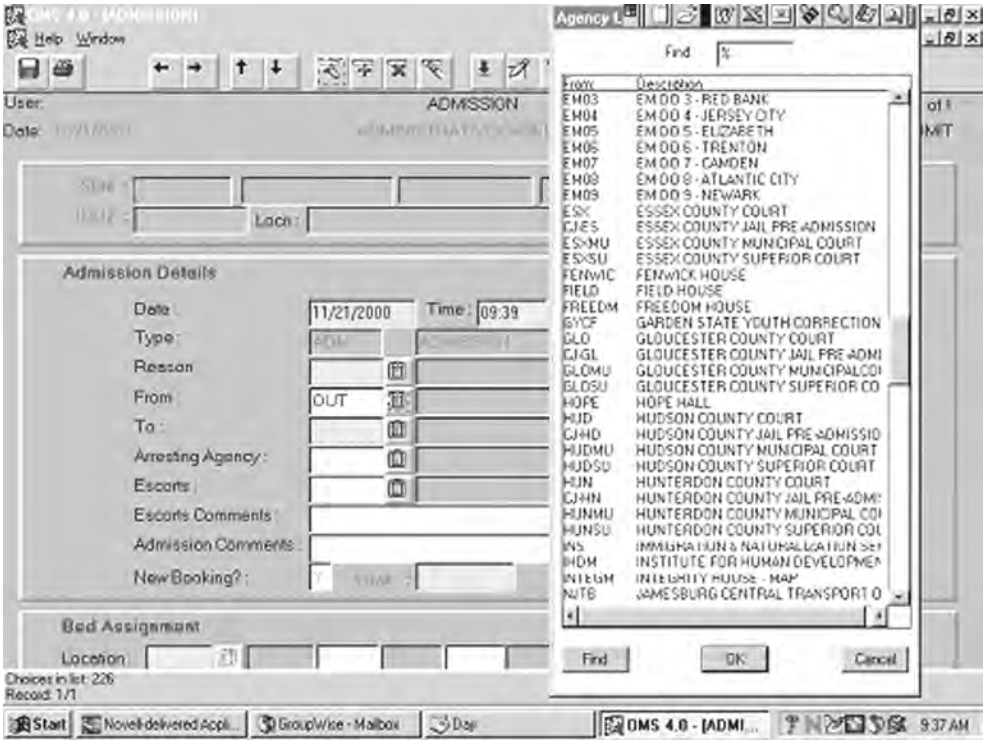
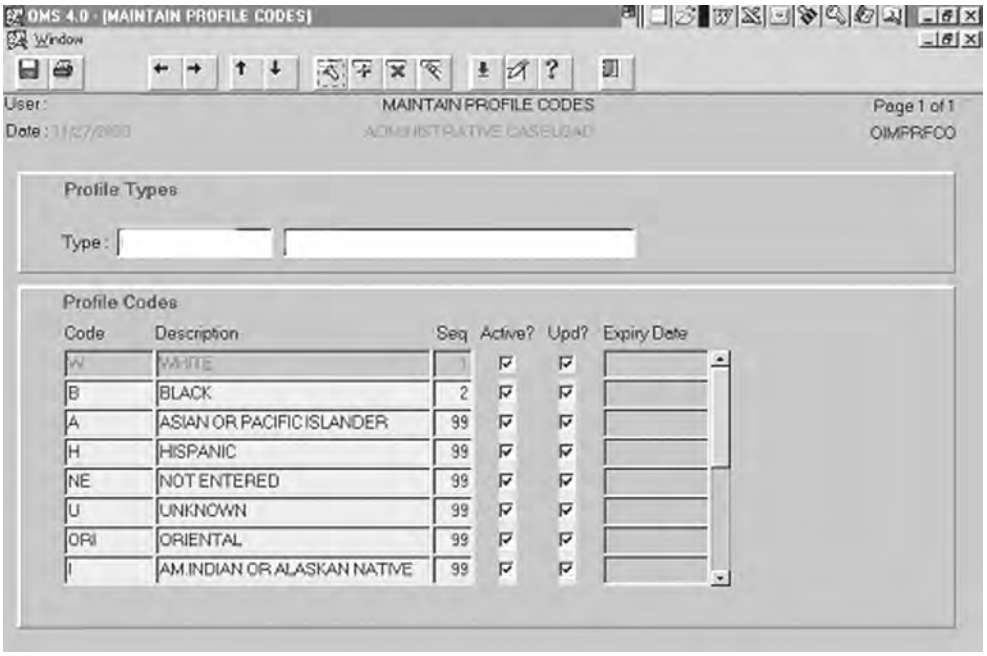


Exhibit C–5. Inmate Profile Codes Configuration Screen (New Jersey DOC)



relationally integrated with the inmate management database. Exhibit C–6 shows an example of one of the data entry screens for physical marks. Note again the use of a drop-down menu that shows field codes. Each notable physical mark on an inmate can be photo imaged as well for visual reference. The system allows database queries based on any physical-mark characteristic. This may be most germane to classification decision supports in referencing and monitoring gang and hate-group issues.

The intake medical/mental health screening is done on admission day. Its primary objective is to identify any medical or mental health needs that require immediate attention. A mental health intake form is printed that inventories all response items pertaining to suicide potential, mental status, and orientation level and computes a medical/mental health objective classification score and status recommendations. As previously mentioned, this module is provided by a different vendor but is integrated into the entire iTAG system and DOCMIS. Exhibit C–7 shows a screen of this medical intake module. Note the comment text boxes available for each question.

Other highlights of the New Jersey system are its "Commitment Order" and "Sentence Details" screens. The commitment order is entered in the screens shown in exhibits C–8 and C–9. The general court commitment information is keyed along with jail and other credit days. Specific offense information is keyed identifying

Exhibit C–6. Physical-Marks, Field Code Popup Screen (New Jersey DOC)

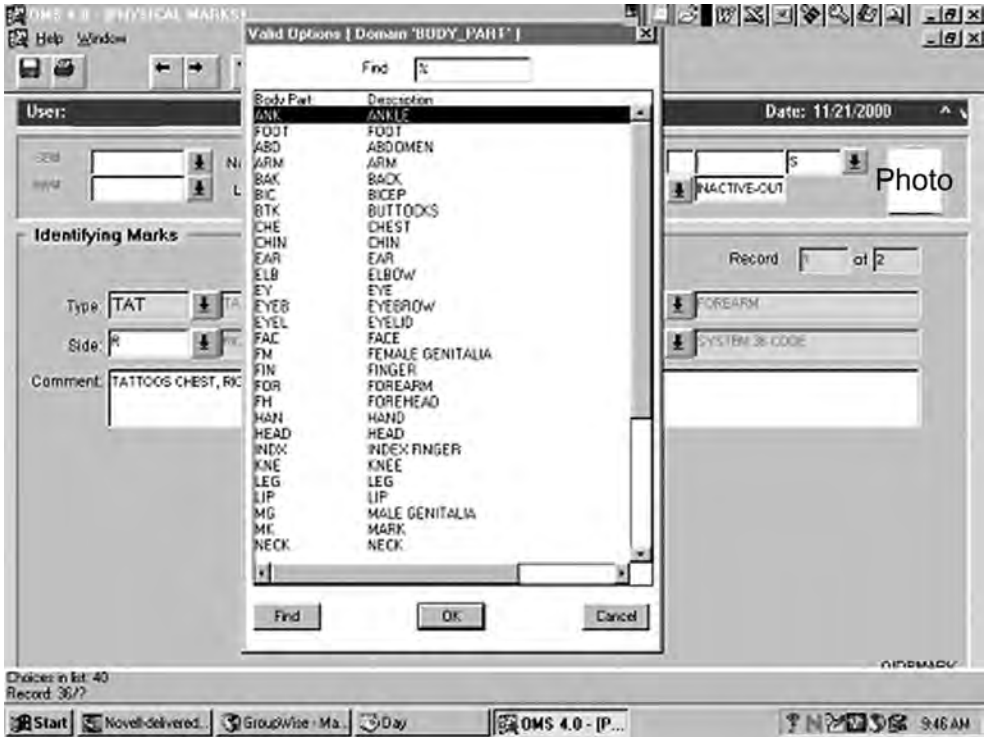


Exhibit C–7. Medical Intake Suicide Assessment Screen (New Jersey DOC)

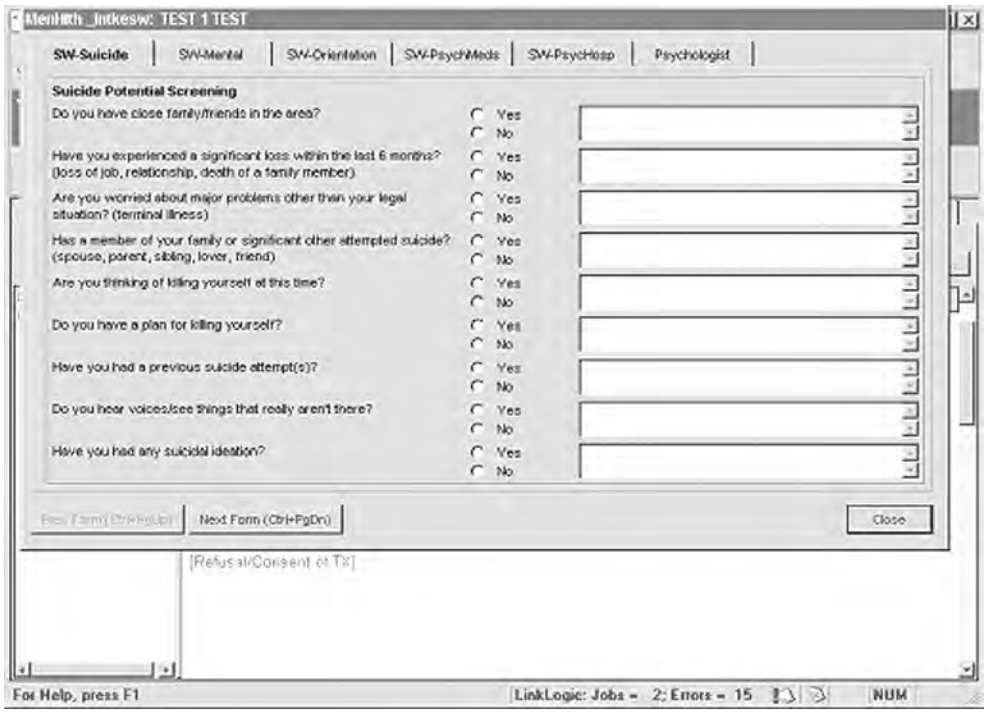


Exhibit C–8. Commitment Order Offenses, Offender Sentences Screen (New Jersey DOC)

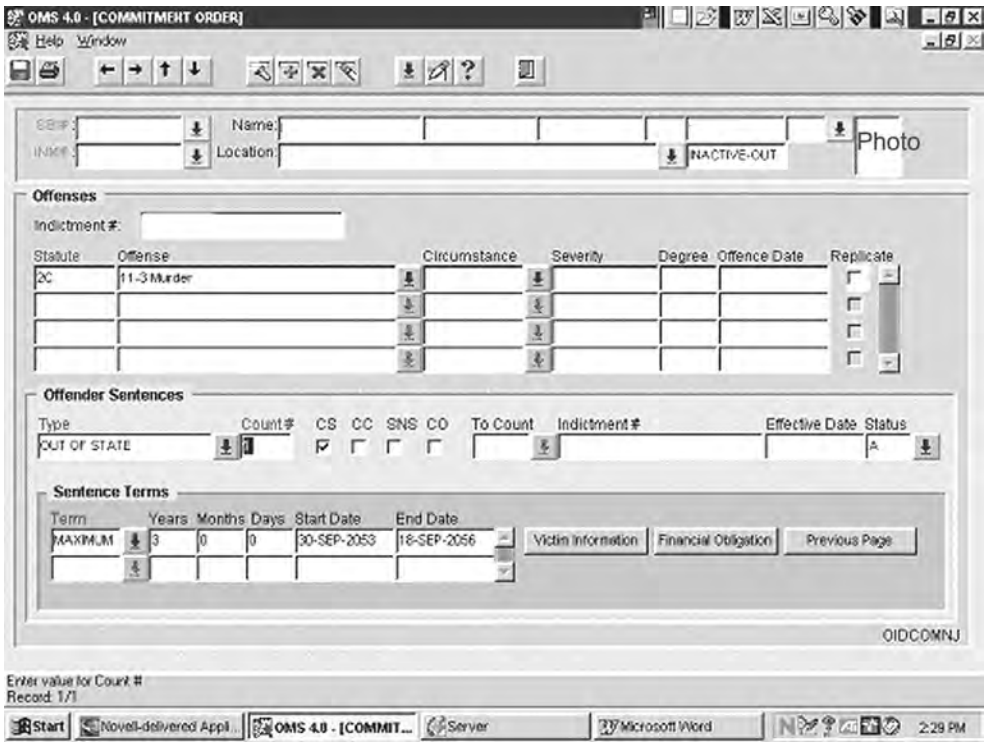
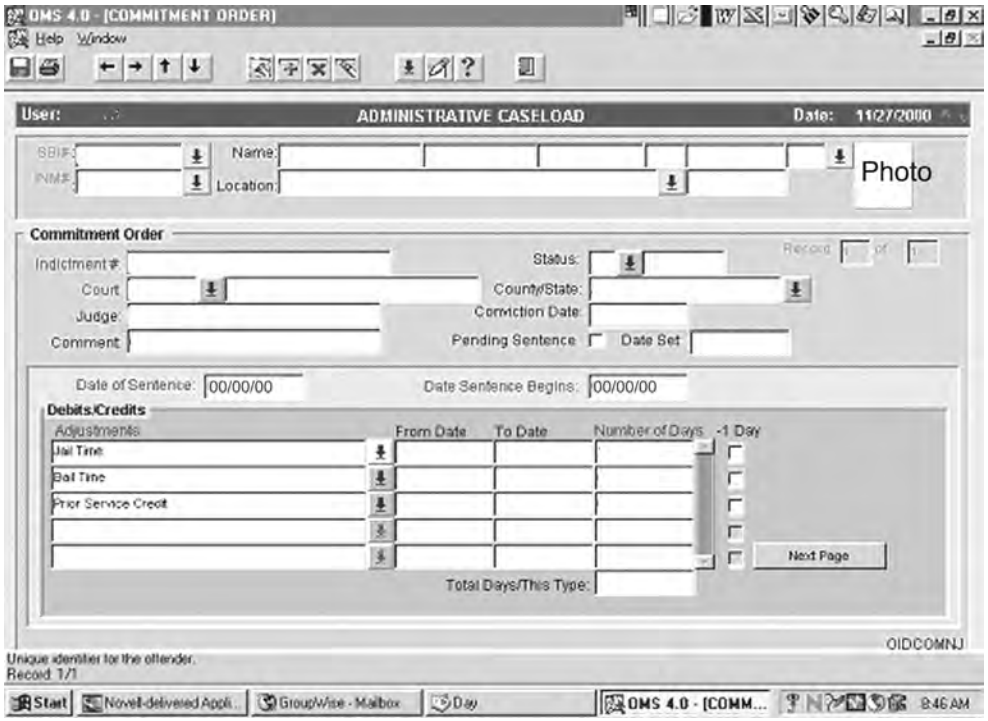


Exhibit C–9. Commitment Order Debits/Credits Screen (New Jersey DOC)



consecutive (CS), concurrent (CC), and sentence-now-serving (SNS) status. Note also the function buttons at the bottom of exhibit C–8 that pop up the "Victim Notification" and "Financial Obligation" data entry screens.

The "Sentence Details" screen shown in exhibit C–10 is a look-up screen for quick reference of the inmate's book maximum and actual maximum outdates. No data entry is performed on this screen. The book maximum is the original maximum expiration date for an inmate's sentence based on the total term. This information is entered into the iTAG system at the reception sites on inmate arrival. The actual maximum is a current snapshot of the inmate's maximum outdate. This date is calculated from the book maximum and includes debits and credits based on the inmate's work credits, minimum credits, and commutation time (exhibit C–11). This information is updated in the iTAG system by routine credit updates or through administratively approved sentence adjustments (e.g., loss of commutation credits).

Exhibit C–12 provides an example of the popup menu for sentence adjustment codes available to detail and facilitate this process. The New Jersey classification management information system includes an easy-to-use "Case Review" screen (exhibit C–13), which inventories the last review type, result, reason, date, and so on. Function buttons in the lower part of the screen allow the user to drill down quickly to specific current status information about the inmate.

Exhibit C–10. Sentence Details Screen (New Jersey DOC)

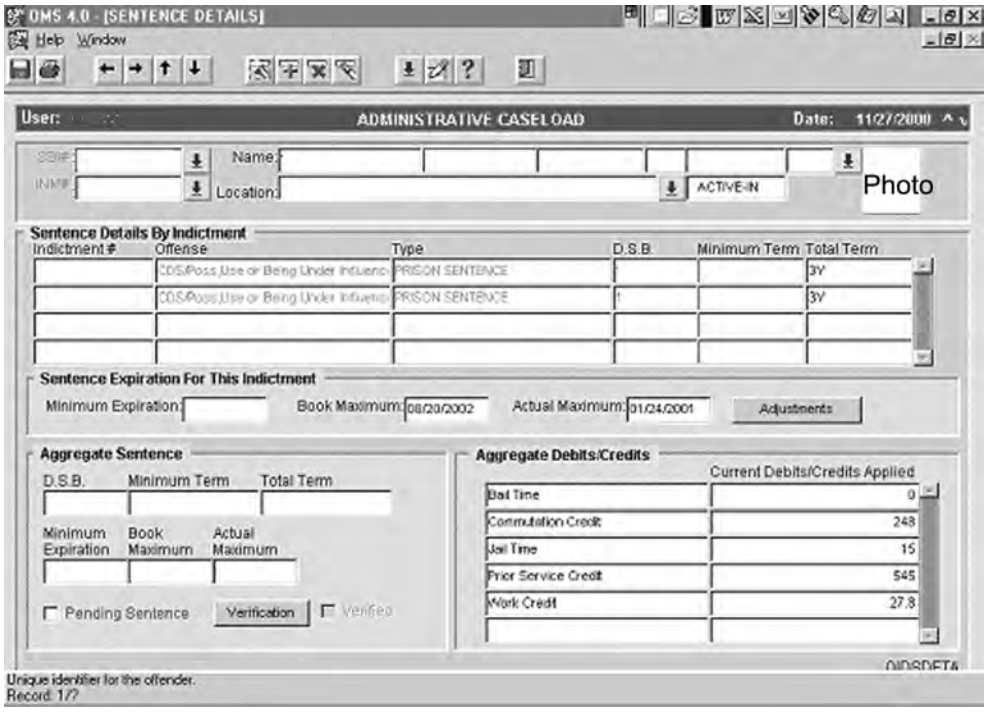


Exhibit C–11. Offender Sentence Adjustment Screen (New Jersey DOC)

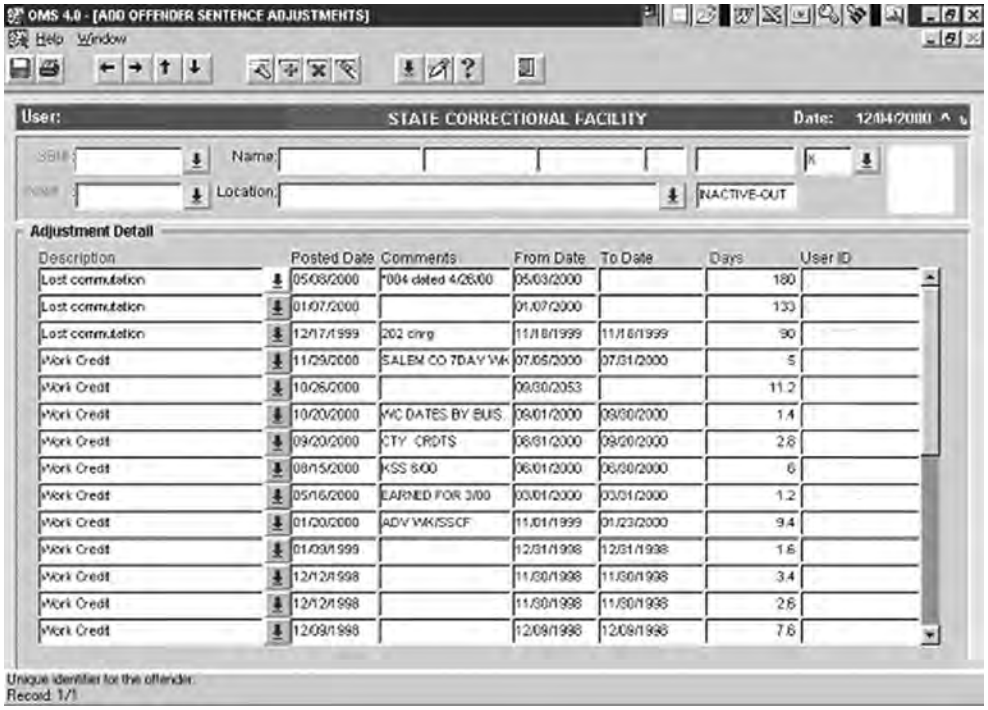


Exhibit C–12. Sentence Adjustment Field Code Popup Screen (New Jersey DOC)

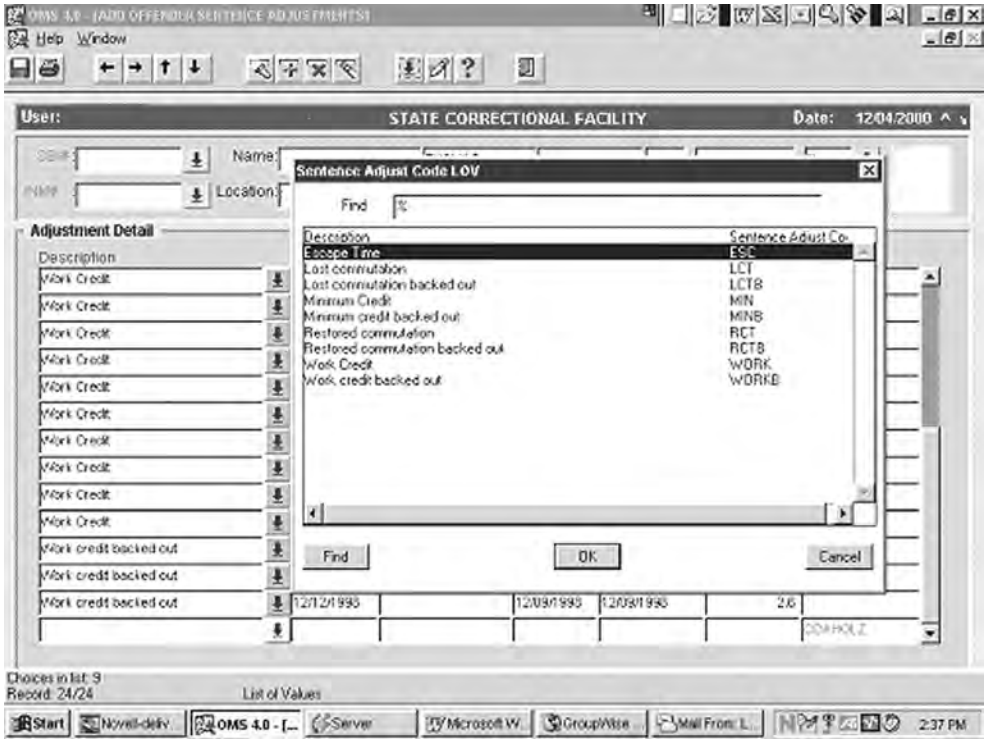


Exhibit C–13. Case Review Screen (New Jersey DOC)

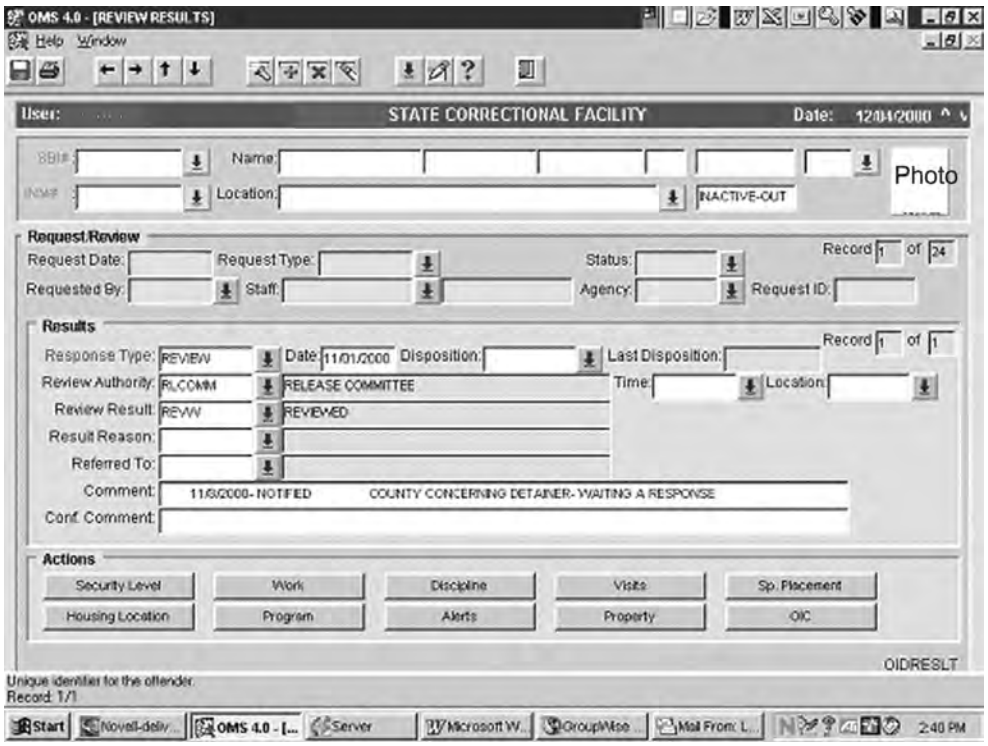
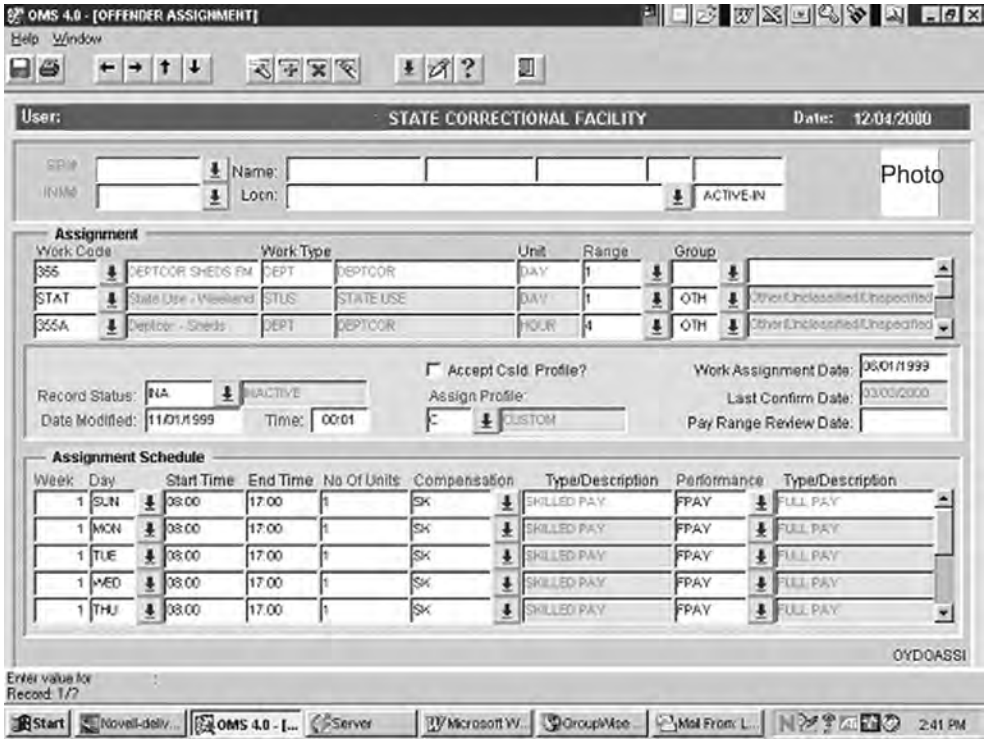


Exhibit C–14. Offender Work/Program Assignment Screen (New Jersey DOC)



Another highlight of this system is its program tracking. Note in exhibit C–14 how the New Jersey system efficiently tracks the inmate's work assignment history in the middle section of the screen and records the current assignments, work schedule, and compensation status information in the lower part of the screen. Work credits documented in this screen are automatically posted to the "Sentence Adjustment" screen (exhibit C–11).

As with many new Microsoft Windows-based systems, the New Jersey system includes integrated e-mail to enable staff to communicate easily with one another from anywhere in the iTAG system by simply selecting the e-mail icon. The incoming mail messages appear on the recipients' screens regardless of where they are currently working in the iTAG system (exhibit C–15).

A final feature of note is the single-entry transaction found in OBCIS. This feature allows for a single transaction keyed into OBCIS (exhibit C–16), which sends a criminal history/wants and warrants query to five criminal justice systems automatically. This single inquiry receives information from OBCIS, the New Jersey Computerized Criminal History Rap Sheet system, the National Crime Information Center/New Jersey Wanted Persons System, the Triple I systems, and the Prosecutors Management Information System (PROMIS)/Gavel County courts system. The query produces a report from each system at the printer. This feature is used for classification assignments, custody-level placement, prerelease reports, and Megan's Law reporting requirements.

Exhibit C–15. E-Mail Messaging Screen (New Jersey DOC)

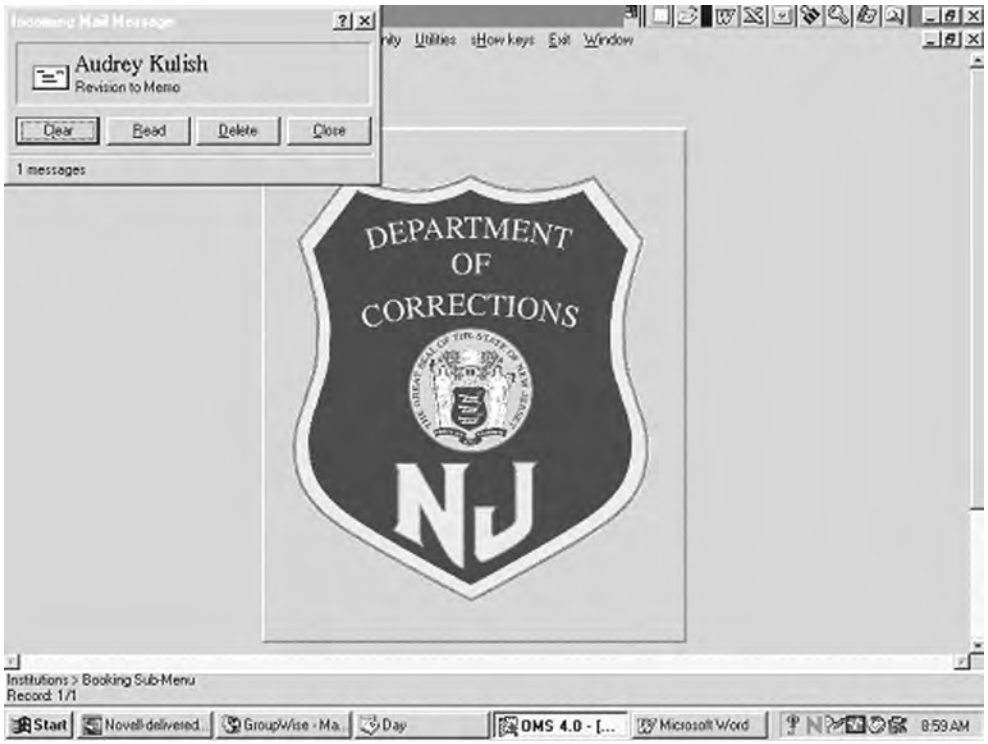


Exhibit C–16. Multitransaction Look-Up Screen (New Jersey DOC)

NJ Criminal Justice Information System
Multi-Transaction Lookup

Requesting Agency ORI: NJ######C Purpose Code: C Operator ID: __

Requesting Agent: Last: _____ First: _____

Comments: _____

_____

___ALL ___CCH ___III ___OBCIS ___NJWPS ___PROMIS

NAME: _____ INMATE NO: _____

SBI: _____ DOB: _____ FBI: _____ SSN: _____

PF Keys: PF1 Clear PF2 Next Clear End

Appendix D: North Carolina Department of Correction Summary

North Carolina Department of Correction
Chief Information Officer
2020 Yonkers Road
Raleigh, NC 27626
919–716–3501

General System Overview

The North Carolina prison system consists of approximately 77 facilities, including 9 reception/intake centers. The prison population, which consists of approximately 32,000 inmates and short-term misdemeanants, has a high turnover rate. In 1993, the North Carolina Department of Correction (NCDOC) was facing accumulating evidence that the Offender Records System, which was more than 20 years old, had exceeded its useful life. After careful consideration of the available options at the time, NCDOC chose to adopt and transfer the Offender-Based Information System in operation in Florida.

Renaming the system, the state installed the Offender Population Unified System (OPUS) and applied functional and technical database modifications to meet the requirements of NCDOC. The unmodified Florida system met approximately 70 percent of the functional requirements of NCDOC. The remaining 30 percent of the functionality was custom developed by the OPUS team. OPUS is a mainframe-based, COBOL, CICS, DB/2, character-based system, with the data residing in a single, comprehensive, relational database. The vast majority of data fields use coded values.

NCDOC, having conducted simulations on housing impacts, is changing to new classification instruments that will be integrated into OPUS. OPUS uses a master system record ID to track all NCDOC offenders/inmates, including prisoners, probationers, and parolees, who come through the system. Consequently, OPUS creates an offender history of every transaction an offender has had since his or her first contact with NCDOC.

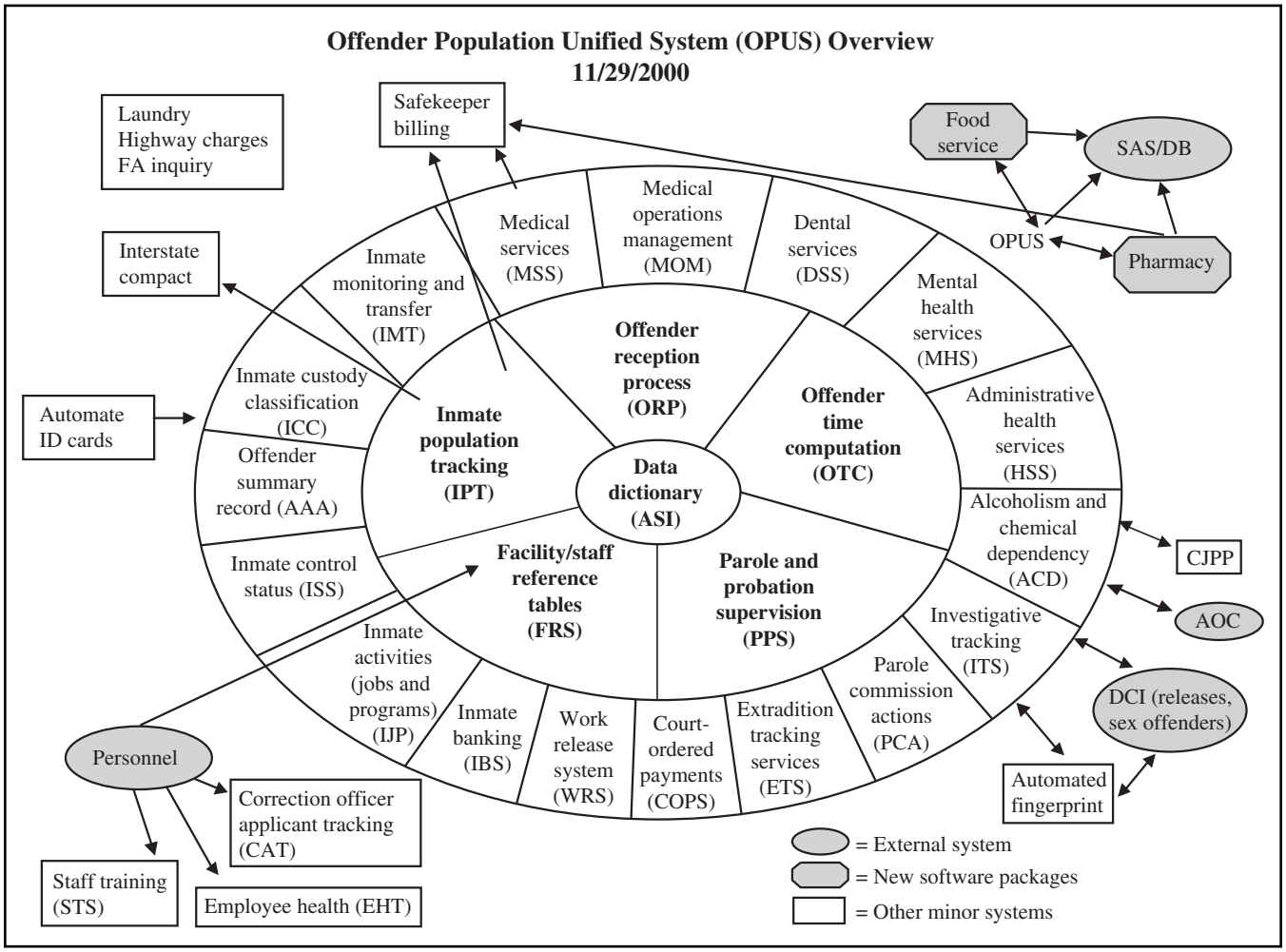
System Highlights

A highlight of this system is its extensive documentation. Exhibit D–1 shows OPUS and its subsystems. A separate detailed, descriptive, and technical document (available from NCDOC) is maintained for each subsystem. This documentation includes data flow diagrams, screens, reports, and data dictionaries of all code tables with their valid values and descriptions. The documentation also includes general design concepts that describe the uniform method used to design each of the subsystems.

Probationer data coming into the system use the following OPUS modules: parole and probation supervision, investigative tracking, offender time computation, court-ordered payments, and alcoholism and chemical dependency. Inmate data principally use the offender reception process, inmate population tracking, and inmate custody classification modules in conjunction with other support modules.

At intake, if the offender is known to the system, the offender's prior record appears and is updated with current information. Personal demographics, medical/dental data, offense data, criminal history, sentencing information, substance abuse, education, and program needs are assessed and entered. Like the Florida system, OPUS

Exhibit D–1. Offender Population Unified System (OPUS) Overview (North Carolina DOC)



AOC = Administrative Office of the Courts
ASI = Application System Inventory
CJPP = Criminal Justice Partnership Program
DCI = Division of Criminal Information
FA = Fixed Asset Inquiry
SAS/DB = SAS software/extract from database

automatically suggests a classification level based on programmed decision rules. The classification officer either accepts or overrides the recommendation. Processing takes place over several days, and the inmate may stay at an intake facility for several weeks until he or she transfers to another prison.

Next, the system sets the flag "Unaudited" in the "projected release date" field (exhibit D–2). A sentence auditor specialist at the central office reviews the paper judgment and commitment documents and ensures that the sentence is entered correctly. Once satisfied, the specialist removes the flag and the system automatically calculates a projected release date. The system then knows that the record has been audited.

Exhibit D–2. Inmate Sentence Structure, Unaudited Flag Screen (North Carolina DOC)

```
OT21 0          BA 001                                  TS73P10  12/06/00 10.56.17
      OTCS021            INMATE SENTENCE STRUCTURE                NC/DOC   PAGE 001
 DOC#:      NAME:                          CURLOC:        PROJ.REL:  UNAUDITED
 FELON          CASE MGR:                ACTIV: ASSIGN PENDG      BED:
 CUSTODY: MN3    CONTROL:        SP.CHAR: IMP   ACT.GRD: 1   NEXT REV:

 COMMIT:       NAME:
    ADMIT DATE:             OTHER STATE:     -                  FOS ID:
    COMMITMENT STATUS: 1  - ACTIVE          AS OF:              SEX PRED:
 SENTENCE: 001    COUNTY:                   DOCKET#:             PUNISHMENT: I
    COURT TYPE: S - SUPERIOR      JUDGE: XXXX - LAST NAME, FIRST NAME
    DISPOSITION: GP GP    COUNTS: 002 CC    CKD#:               CRIME VERSION?:
    PRIMARY OFFENSE: 1240 - BREAKING AND ENTERING (B &  QUALIFIER: 0 - PRINCIPAL
    OFFENSE DATE: FROM              TO:              G.S.NO:
    FEL/MISD: F    PENALTY CLASS: H     PRIOR RECORD POINTS/CONV:    0    LEVEL: 1
    MIN.TRM:  000 Y 006 M 000 D  MAX: 000 Y 008 M 000 D SSACT: 000 Y 004 M 000 D
    SUPV.TRM: 000 Y 60 M 00 D    G.S. MAX: 000 Y 00 M 00 D  (PRE-FAIR ONLY)
    SNT.TYPE: PN IM SS           COUNTY JAIL CR:    0 D    ICC JAIL CR:    0 D
    HOW SERVED: IN TO            SPECIAL COMPUTATION: 02 - FLAT TIME  NO CREDITS
    CONVICTION DATE:             BEGIN DATE:             AUDIT?: N    COMMENT?: N
    SENTENCE STATUS: 1  - ACTIVE      AS OF:             SERVICE STATUS: ???
                                                                    COMPUTE?:
                                     F1=MAIN MENU  F3=SCREENS   F4=REPORTS
```

OPUS has extensive edit checking (exhibit D–3), so user-induced errors are controlled and minimized. This is also facilitated by the use of a single master database, which eliminates record-matching errors between multiple databases that are used in some systems.

OPUS screen navigation (exhibit D–4) includes the following standard mainframe, character-based protocols, located at the bottom of the screen (not all "F" key options are available on every screen):

- F1 = Displays the OPUS main menu.
- F2 = Displays the "Help" screen for a data file.

Exhibit D–3. External Movements Screen (North Carolina DOC)

```
IP20 2                                                  TS73P10  12/06/00 13:52:53
     IPTS020                    EXTERNAL MOVEMENTS                NC/DOC   PAGE 001
 DOC#:          NAME:                          CURLOC:        PROJ.REL:
 FELON          CASE MGR:                     ACTIV:                BED:
 CUSTODY: CLS    CONTROL: RPOP   SP.CHAR: REG   ACT.GRD: 1   NEXT REV: 04/10/2001
                 MOVEMENT        MOVEMENT                DEST/
 ACT RPT.LOC.    DATE   TIME   CODE  DESCRIPTION       ORGIN  MOVEMENT REASON
 A             12/06/00 13:50  81                             01
               02/03/00 16:57  30 RECEIVED FROM              18 DUTY
               02/03/00 06:13  90 TRANSFERRED TO             18 DUTY
               03/12/99 09:45  30 RECEIVED FROM              12 DIR'S CLASS. COMM
               03/12/99 06:40  90 TRANSFERRED TO             12 DIR'S CLASS. COMM
               11/05/98 16:19  30 RECEIVED FROM              18 DUTY
               11/05/98 08:31  90 TRANSFERRED TO             18 DUTY
               12/23/97 16:42  30 RECEIVED FROM              20 SPECIAL PROGRAM
               12/23/97 05:20  90 TRANSFERRED TO             20 SPECIAL PROGRAM
               12/18/97 13:31  30 RECEIVED FROM              11 SEGREGATION
               12/18/97 11:10  90 TRANSFERRED TO             11 SEGREGATION
               09/15/97 17:58  30 RECEIVED FROM              18 DUTY
               09/15/97 08:03  90 TRANSFERRED TO             18 DUTY


 P20UE005 RPT. LOCATION IS INVALID        P20UE051 USE DEST. = 2005 FOR ESCAPE
 P20UE013 RSN CODE/MVE CODE INCOMPATIBLE  P20UE044 RPT LOC NOT = PRIOR RPT LOC
```

Exhibit D–4. Custody Reclassification Screen (North Carolina DOC)

```
IC03 0                                                TS73P10   12/06/00 11:32:38
      ICCS003              CUSTODY RECLASSIFICATION            NC/DOC   PAGE 001
 DOC#:          NAME:                          CURLOC:       PROJ.REL:
 FELON          CASE MGR:                    ACTIV:                BED:
 CUSTODY: CLS   CONTROL: RPOP   SP.CHAR: IWR   ACT.GRD: 3 REV: 03/10/01 *SEX OFF

 SUBMITTED DATE: 12/06/00  TYPE: R - RECLASS  FACL:       -  CENTRAL PRISON
  1. PRIMARY CONVICTION:     0330 - RAPE SECOND DEGREE                  2 02
  2. SECONDARY CONVICTION:   1210 - BURGLARY 1ST DEGREE                 2 00
  3. INSTITUTIONAL VIOLENCE: A03  - ASSAULT STAFF W/WEAP   02/18/97     1 07
                                                          BASIC SUB-TOTAL     18
  4. ESCAPE HISTORY: NON-VIO: 0 LT1Y; 0 GT1Y/IMP;  VIO: 0 LT1Y;  0 GT1Y   00
  5. RULE INFRACTIONS:       4    - NONE IN LAST 6 MOS.                   02
  6. INFRACTION SEVERITY:    3    - CLASS C                                0
  7. MOST SEVERE DETAINER:        -
  8. PRIOR FELONIES:         2    - 2 OR MORE PRIOR FEL.                  02
     CASE MANAGER:                                      COMBINED TOTAL      00

 SUGG. C/F CUSTODY: 2 - CLS   STD.RULE:   -
 NEW CUSTODY: 2 - CLS   RATIONALE:   -                        COMMENTS?: N
 FINAL ACTION: __/__/__   TYPE:              AUTHORITY LEVEL:

F1=MAIN MENU  F3=SCREENS  F4=REPORTS  F11=COMMENTS  F8=REVIEW   F15=MENU
```

- F3 = Displays the menu of screens for the subsystem.
- F4 = Displays the menu of reports for the subsystem.
- F5 = Displays staff identifier and date and time of last update.
- F6 = Returns to the first page of the data being displayed.
- F7 = Displays the previous page of data.
- F8 = Displays the next page of data.
- F11 = Displays related comments.
- F12 = Displays old NCDOC number.

As in many character-based systems, browse screens have an action column next to an activity or data input. The following action codes, listed at the bottom of the screen, are entered here (exhibit D–5):

- A = Add data on this line.
- C = Change data on this line.
- D = Delete data on this line.
- I = Transfer to the detailed inquiry screen for this line.
- U = Transfer to the detailed update screen for this line.

In the "Inmate Summary Record" screen (exhibit D–6), the user places an X on the line next to the items (A–V) he or she wants to view. The system then drills down to the screen showing the detail for that activity. Exhibit D–7 shows an example in which the user selected item D (Detainers), which produced the detailed "Detainers/Custody Actions" subscreen.

Exhibit D–5. Gain/Loss History Screen (North Carolina DOC)

```
IP01 0                                                    12/06/00 14:19:01
      IPTS001        INMATE SUMMARY RECORD AS OF 12/06/00     NC/DOC   PAGE 002
 DC#:          NAME:                                STATUS: ACTIVE
     TO VIEW MORE INFORMATION ABOUT THIS INMATE, ANSWER THE QUESTIONS BELOW.
     THEN PRESS THE "ENTER" KEY.
 1)  SELECT ONE OR MORE OF THE FOLLOWING USING THE LETTER "X".
      _  A. ALERTS                              _  B. PENDING REVIEWS
      _  C. SENTENCE STRUCTURE                  _  D. DETAINERS
      _  E. SENTENCE REDUCTION CREDITS*         _  F. PAROLE COMMISSION EVENTS
      _  G. EXTERNAL MVMTS* (TRNSF.ONLY?: _ )   _  H. ESCAPE HISTORY
      _  I. ACTIVITY ASSIGNMENTS*               _  J. DISCIPLINARY OFFENSES*
      _  K. CONTROL ACTIONS*                    x  L. CUSTODY ACTIONS*
      _  M. SIGNIFICANT ISSUE NOTES*            _  N. CASE MANAGEMENT NOTES*
      _  O. OFFENDER NAMES/ALIASES              _  P. OTHER IDENTIFIERS
      _  Q. OFFENDER DEMOGRAPHICS               _  R. SELECTED COMMENTS
      _  S. SCHEDULED APPOINTMENTS              _  T. PRIOR INCARCERATION SUMMARY
      _  U. ALL OF THE ABOVE (A THROUGH T)      _  V. CHRONOLOGICAL RECORD*
 2)  DATA FOR CURRENT INCARCERATION ONLY? Y   TYPE "N" FOR PRIOR RECORD
 3)  DISPLAY OR PRINT INMATE INFORMATION? D   TYPE "P" TO PRINT, PRT= HZAQH74D
     NOTE: WHEN DATA IS DISPLAYED, "P/N" GOES FORWARD, "P/P" GOES BACK, AND
     "P/L" DISPLAYS THIS MENU.  TYPE "P/1" OVER "IP01" TO GO BACK TO PAGE 1.
```

Exhibit D–6. Inmate Summary Record Screen (North Carolina DOC)

```
IP01 0                                                    12/06/00 14:19:01
      IPTS001        INMATE SUMMARY RECORD AS OF 12/06/00     NC/DOC   PAGE 002
 DC#:          NAME:                                STATUS: ACTIVE
     TO VIEW MORE INFORMATION ABOUT THIS INMATE, ANSWER THE QUESTIONS BELOW.
     THEN PRESS THE "ENTER" KEY.
 1)  SELECT ONE OR MORE OF THE FOLLOWING USING THE LETTER "X".
      _  A. ALERTS                              _  B. PENDING REVIEWS
      _  C. SENTENCE STRUCTURE                  _  D. DETAINERS
      _  E. SENTENCE REDUCTION CREDITS*         _  F. PAROLE COMMISSION EVENTS
      _  G. EXTERNAL MVMTS* (TRNSF.ONLY?: _ )   _  H. ESCAPE HISTORY
      _  I. ACTIVITY ASSIGNMENTS*               _  J. DISCIPLINARY OFFENSES*
      _  K. CONTROL ACTIONS*                    x  L. CUSTODY ACTIONS*
      _  M. SIGNIFICANT ISSUE NOTES*            _  N. CASE MANAGEMENT NOTES*
      _  O. OFFENDER NAMES/ALIASES              _  P. OTHER IDENTIFIERS
      _  Q. OFFENDER DEMOGRAPHICS               _  R. SELECTED COMMENTS
      _  S. SCHEDULED APPOINTMENTS              _  T. PRIOR INCARCERATION SUMMARY
      _  U. ALL OF THE ABOVE (A THROUGH T)      _  V. CHRONOLOGICAL RECORD*
 2)  DATA FOR CURRENT INCARCERATION ONLY? Y   TYPE "N" FOR PRIOR RECORD
 3)  DISPLAY OR PRINT INMATE INFORMATION? D   TYPE "P" TO PRINT, PRT= HZAQH74D
     NOTE: WHEN DATA IS DISPLAYED, "P/N" GOES FORWARD, "P/P" GOES BACK, AND
     "P/L" DISPLAYS THIS MENU.  TYPE "P/1" OVER "IP01" TO GO BACK TO PAGE 1.
```

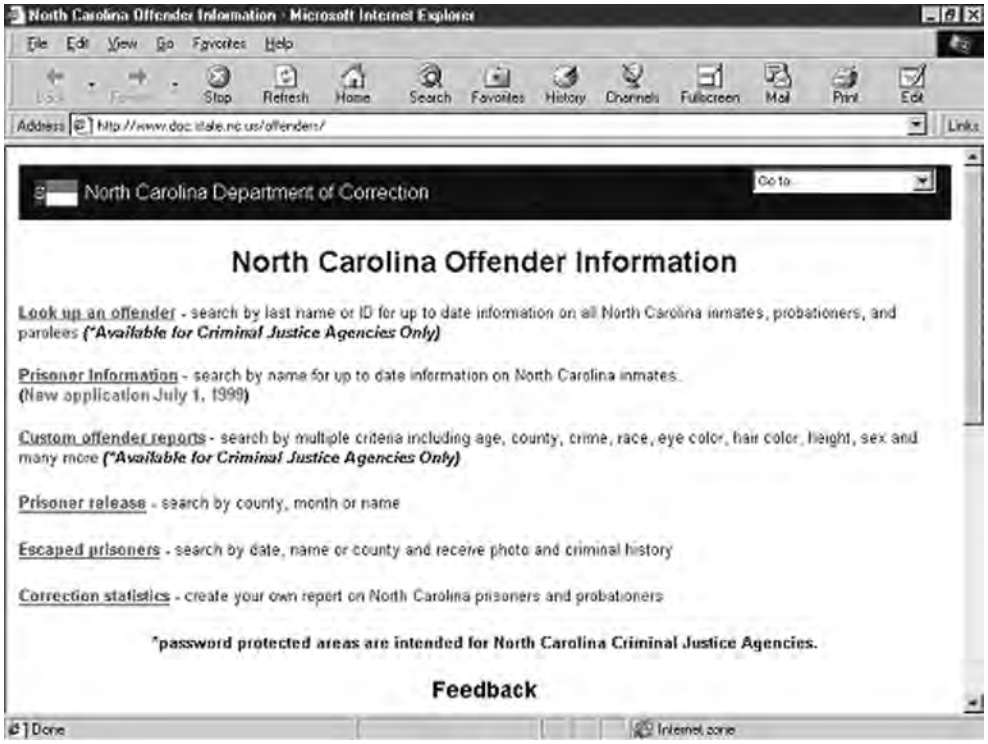
Exhibit D–7. Detainers/Custody Actions Screen (North Carolina DOC)

```
P/N  0                                                          12/06/00 15:27:52
     IPTS002        INMATE SUMMARY RECORD AS OF 12/06/00     NC/DOC   PAGE   1
 DOC#:          NAME:                          CURLOC:        PROJ.REL:
 FELON         CASE MGR:                    ACTIV: MED RDSQD #2     BED:
 CUSTODY: MED   CONTROL: RPOP   SP.CHAR: REG   ACT.GRD: 1   NEXT REV: 12/11/2000

 ********************************** DETAINERS **********************************
  PLACED     TYPE       AUTH.TYPE        AUTHORITY NAME      DOCU.   STATUS
 07/13/99  PEND CHR  IN-STATE                                NO     RESOLVED

 ******************************** CUSTODY ACTIONS ******************************
   DATE    FACILITY  TYPE     REVIEWED  CLS.ACTION      AUTH.LEVEL      FINAL
 11/29/00          RECLASS   11/30/00  MED TO MED A AREA/INSTIT      11/30/00
 10/04/00          RECLASS   10/05/00  MED TO MED A AREA/INSTIT      10/05/00
 07/03/00          RECLASS   07/07/00  MED TO MED A AREA/INSTIT      07/07/00
 01/11/00          RECLASS   01/14/00  MED TO MED A AREA/INSTIT      01/20/00
 07/14/99          INITIAL   07/14/99       TO MED A AREA/INSTIT     07/20/99
                        ----- PRIOR INCARCERATION -----
 01/13/97          INITIAL   01/15/97       TO MN3 A AREA/INSTIT     01/15/97
```

NCDOC Web Site

Like most state DOCs, NCDOC has a Web site. The NCDOC Office of Research and Planning, with the Office of Management Information Systems, has developed an example of what it calls the Automated System Query (ASQ). ASQ offers a powerful and flexible system that performs various queries about and produces ad hoc reports on individual offenders or populations from a monthly flat file extract of the OPUS database. From the Web site's main menu, shown in exhibit D–8, the user can select an ASQ option.

Exhibit D–8. NCDOC Web Site Offender Information Main Menu



The public, as well as DOC personnel, can access ASQ, although the public is prohibited from accessing some data. Selecting "Custom offender reports" produces the screen shown in exhibit D–9. A user-guide menu is provided to allow the user to view current information about the application, review DOC terminology and data definitions, look at an example of an ad hoc report, and create custom reports.

Selecting menu option 5, "Start Generating Reports," produces the following screen (exhibit D–10), which begins the user-friendly process of building a report. For any report, the fundamental steps include selecting the type of report (i.e., roster or statistic), selecting whom the report will focus on, selecting the content of the report, and selecting how the content of the report will be ordered.

Exhibit D–10 begins guiding the user through the query-building process. The first task in selecting whom the report will focus on is to select the time period of incarceration for the inmate population of interest. Then, from the template provided, the user selects the offender population desired in the report (i.e., prison, probation, or parole population, entries, or exits).

The user is then prompted to select from a list of available items/variables (content) desired for tabulation. Multiple variables may be selected and cross-tabulated. In exhibit D–11, a single variable, "Assigned Custody" (current classification assignment), has been added to the selected items list.

The next screen (exhibit D–12) gives the user the option to select any or all coded values associated with the variable(s) selected. After selecting from the options, the user clicks on the "View Report" button to generate the report shown in exhibit D–13.

Exhibit D–9. ASQ Main Menu (North Carolina DOC)

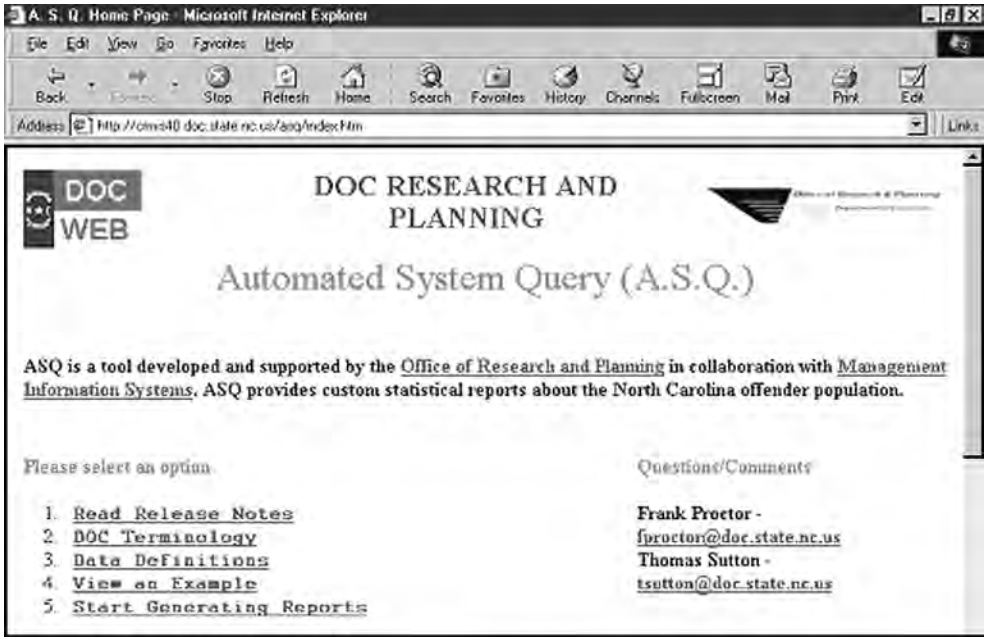


Exhibit D–10. ASQ Select Conditions Screen (North Carolina DOC)

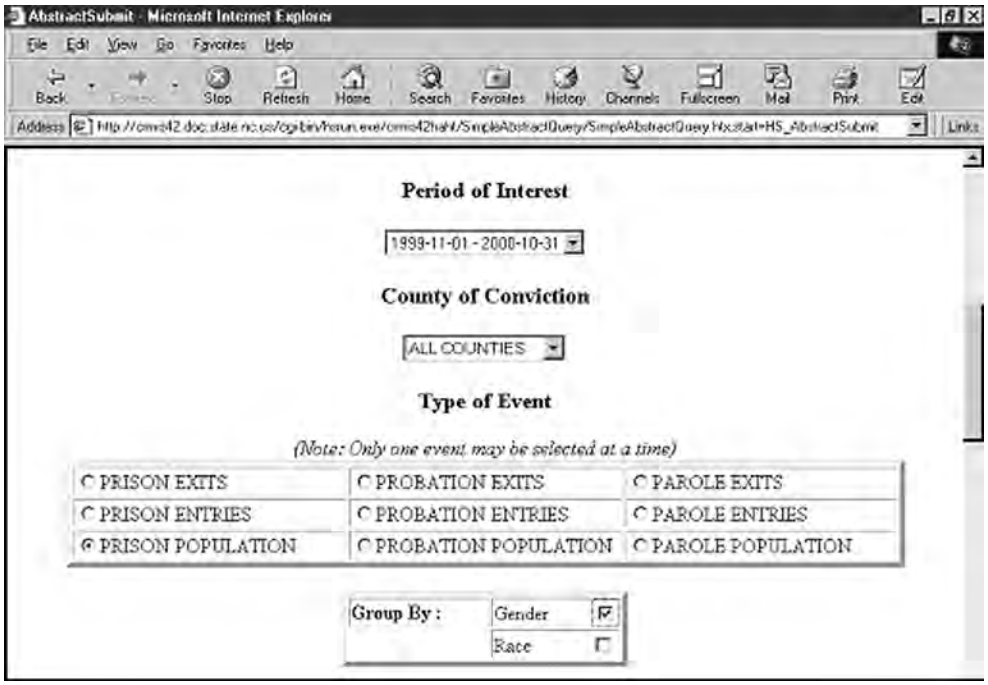


Exhibit D–11. Select Offender Variables Screen (North Carolina DOC)

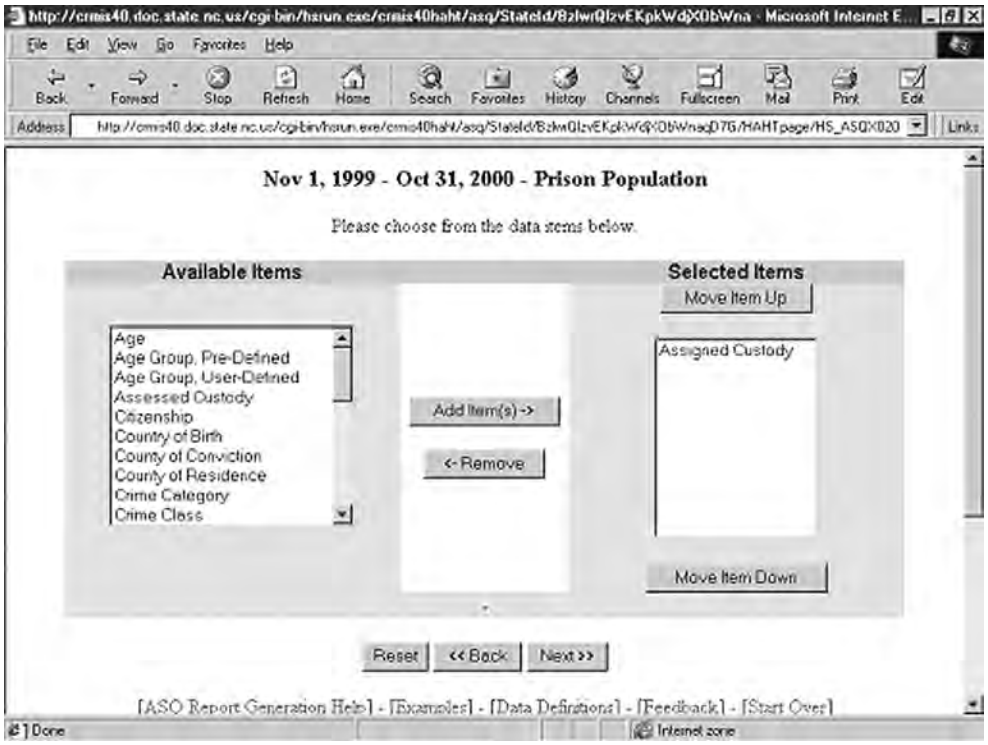


Exhibit D–12. Select Variable Values Screen (North Carolina DOC)

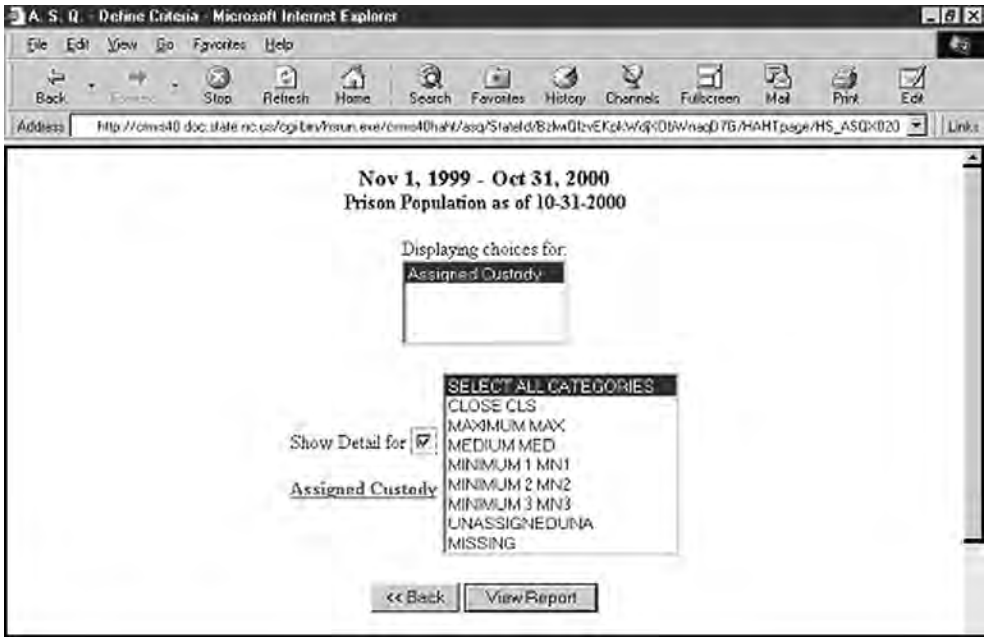


Exhibit D–13. Report Output Screen (North Carolina DOC)

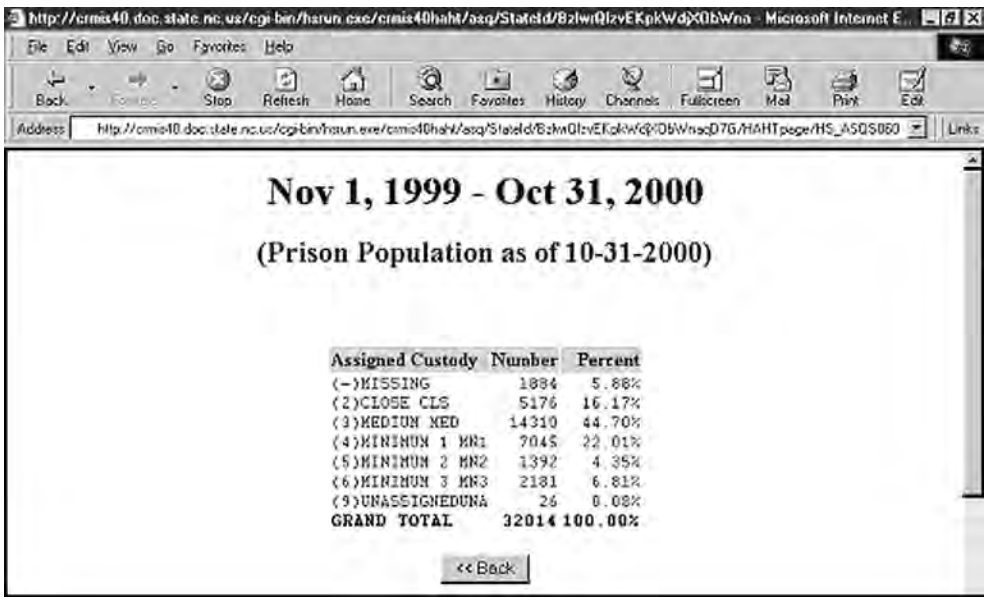
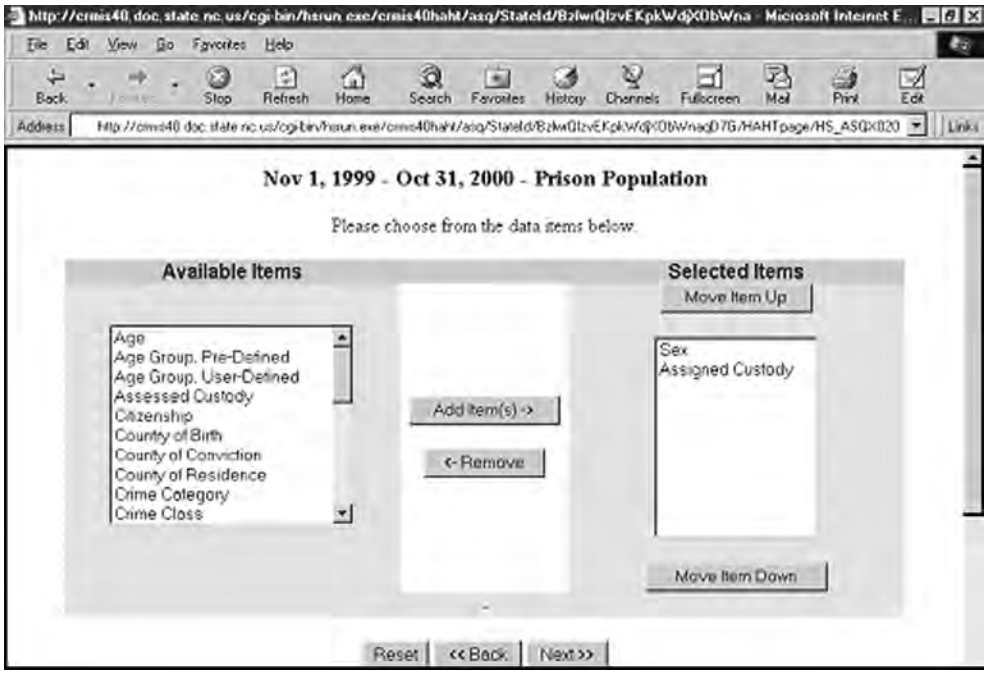
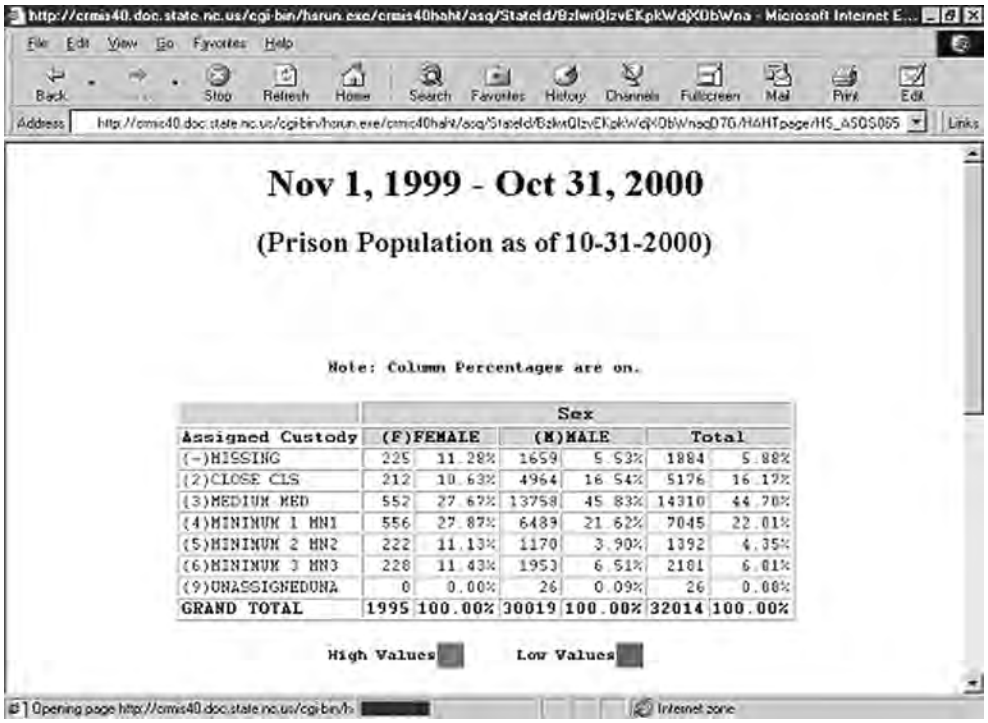


Exhibit D–14. Select Variables Screen (North Carolina DOC)



In another example (exhibit D–14), a second variable, "Sex," is added to "Assigned Custody" to generate a cross-tabulation report (exhibit D–15).

Exhibit D–15. Report Output Screen (North Carolina DOC)



Nov 1, 1999 - Oct 31, 2000

(Prison Population as of 10-31-2000)

Note: Column Percentages are on.

	Sex					
Assigned Custody	(F)FEMALE		(M)MALE		Total	
(-)MISSING	225	11.28%	1659	5.53%	1884	5.88%
(2)CLOSE CLS	212	10.63%	4964	16.54%	5176	16.19%
(3)MEDIUM MED	552	27.67%	13758	45.83%	14310	44.70%
(4)MININUM 1 MN1	556	27.87%	6489	21.62%	7045	22.01%
(5)MININUM 2 MN2	222	11.13%	1170	3.90%	1392	4.35%
(6)MININUM 3 MN3	228	11.43%	1953	6.51%	2181	6.81%
(9)UNASSIGNEDUNA	0	0.00%	26	0.09%	26	0.08%
GRAND TOTAL	1995	100.00%	30019	100.00%	32014	100.00%

High Values Low Values

Appendix E: South Carolina Department of Corrections Summary

South Carolina Department of Corrections
Division Director, Classification and Inmate Records
Chief, Offender Information Management
Central Office Annex
4542 Broad River Road
Columbia, SC
803–896–8551

General System Overview

The South Carolina prison system includes 31 facilities housing 20,800 inmates. The South Carolina Offender Management System is a character-based, mainframe system with a single master database architecture originally developed in 1976. It has since seen several conversions to use new technologies in online and batch processing, database management, and data transfers. Current upgrade efforts focus on integrating and developing management reports on the personal computer (PC)-based Microsoft Windows platform.

The classification component strengths include data comprehensiveness and a custom-developed, PC-based dynamic simulation modeling software package.

The security classification process combines automated processing and individual manual reviews to ensure data integrity. Inmates are reviewed for security assignments at reception and evaluation periodically at 6-month intervals and when aggravating or mitigating circumstances warrant an immediate review. These reviews trigger online processing to compare the inmate's current status with the nine security criteria considered in the assignment of a security level. This online processing, staggered over time, generates a recommended security level known as the recommended security score at review. The classification decisionmaker either agrees or disagrees with the automated recommendation, changing it if warranted. This is known as the approved/assigned security score at review. If a change from the recommended security level is made, an override flag is generated. The system also automatically triggers review lists for classification personnel based on the occurrences of inmate transactions pertaining to detainers, escapes, infractions, and balance of sentence thresholds.

System Highlights

Inmate Transportation System

The South Carolina Department of Corrections (SCDOC) Transportation System's objectives are to facilitate the efficient, secure transportation of inmates, support the classification system, and efficiently use the system's beds through central control and oversight. Developed in 1991, the automated system manages 22,000 inmates across 32 institutions averaging 3,800 institutional transfers each month. Thirty-five percent of transfers are for initial assignment, 27 percent are for medical purposes, 22 percent are reclassifications, and 16 percent are miscellaneous (for other purposes).

The automated transportation module interfaces with the inmate classification system module, community program screening module, medical appointment module, separation requirement system, bed management system, and transfer/count system. The functional components of the transportation system include the following:

- *Bed management:* Assigns bed type (e.g., dorm) and monitors bed status (i.e., vacant, encumbered, out of service).
- *Transfer request process:* Creates transfer requests to institutions with the reason, target date, and priority; automatically creates transfer requests triggered by scheduled medical appointments and community program placement orders.
- *Transfer approval process:* Automatically checks for bed and bus-seat availability, keep-separate requirements, and bus driver reports and produces a bag lunch preparation report.
- *Execution of inmate transfer:* Drops/adds an inmate to the facility count on delivery and assigns the inmate a specific bed/dorm in that facility.

The following screen shot, exhibit E–1, shows the transportation system's main menu that is used by the central office.

Exhibit E–2 shows the "Add a Transfer Request" screen, which is used to log a transfer request in the system's queue, including entry of the transfer type, destination, transfer priority, and targeted transfer date. Exhibit E–3 shows the "Add Transfer Request: Medical Appointment" screen.

The system easily generates a list of active transfer requests by facility (exhibit E–4). Once transfers are requested, the screen shown in exhibit E–5 allows the transfer officer to view the bed status of the target facility for availability.

After bed availability is confirmed, the approval of the transfer request and the setting of a transfer date are recorded, which creates a transfer order (exhibit E–6). The

Exhibit E–1. Transportation System Menu (South Carolina DOC)

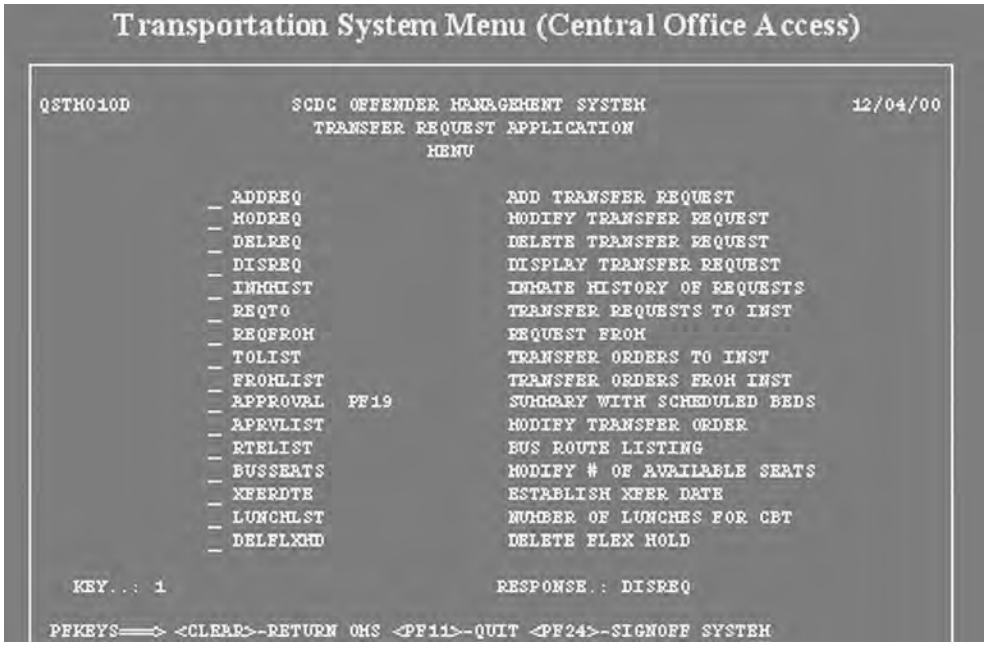
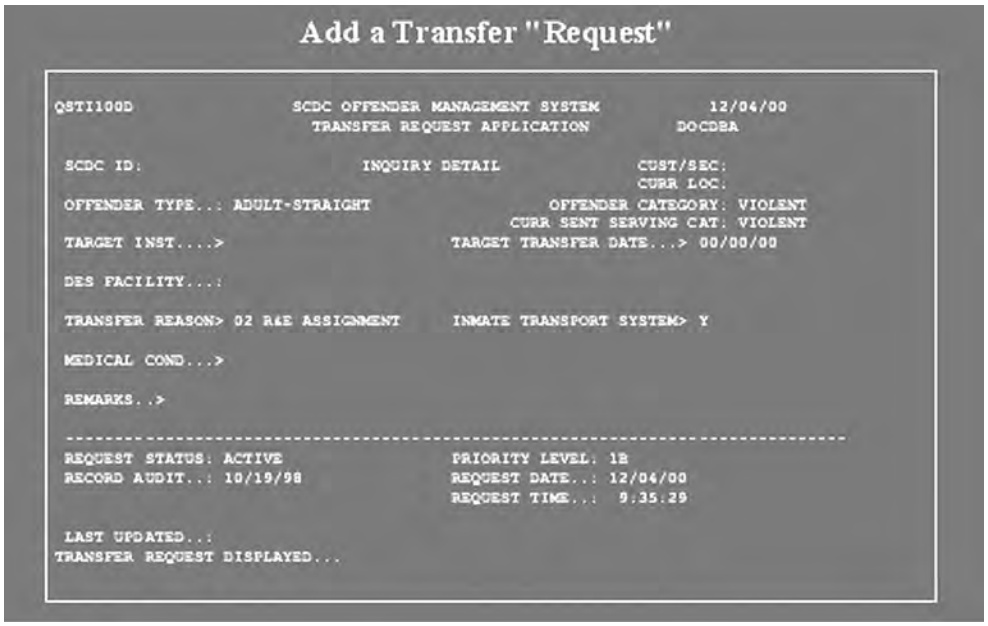


Exhibit E–2. Add a Transfer Request Screen (South Carolina DOC)



transportation system also generates a bus route summary (exhibit E–7), which lists the departure facility, destination, and number of inmates scheduled for that route.

Pickup and dropoff reports show all inmates scheduled for a specific facility and inmates' current location, name, and number (exhibit E–8). The system also

Exhibit E–3. Add Transfer Request: Medical Appointment Screen (South Carolina DOC)

Exhibit E–4. List of Inmates With Active Transfer Requests Screen (South Carolina DOC)

List of Inmates with "Active" Transfer Request to Kirkland

```
QSTI230D              SCDC OFFENDER MANAGEMENT SYSTEM          12/04/00
 OHREQSTR               TRANSFER REQUEST APPLICATION            DOCDBA

                      LIST OF INMATES AWAITING TRANSFER TO:


                                CURRENT     TARGET  PR   CHG          RECORD
SCDC#        NAME               LOCATION    DATE    CODE REASON  STAT  AUDIT
00:                                         12/07/00 1B MEDICAL   AC
00:                                         12/07/00 1B MEDICAL   AC  05/11/98
00:                                         12/07/00 1B MEDICAL   AC  03/30/98
00:                                         12/07/00 1B MEDICAL   AC  04/15/97
00:                                         12/07/00 1B MEDICAL   AC  07/24/96
00:                                         12/07/00 1B MEDICAL   AC  10/08/98
00:                                         12/07/00 1B MEDICAL   AC  02/24/00
00:                                         12/07/00 1B MEDICAL   AC  06/29/00


                                                                  PAGE: 0001
LIST OF TRANSFER REQUESTS DISPLAYED...

 PF7==> PAGE BACKWARD  PF8==> PAGE FORWARD
```

automatically generates a lunch preparation report to alert each facility of departure to the number of sack lunches that need to be prepared for each bus.

Exhibit E–5. Bed Summary Screen (South Carolina DOC)

Bed Summary Screen (Reviewed prior to Approving Requests to an Institution)

```
HOVI101D              SCDC OFFENDER MANAGEMENT SYSTEM              12/04/00
 HOVI101M                      INST BED DETAIL                     DOCDBA
 OHREQSTA

 LOCATION>                                                  DATE> 12/04/00
                          CURRENT TOTALS AS OF: 11:07
                        ------------------------------------
                        |                        OUT OF      |    NET    AVAIL
BED TYPE                OCC   AVAIL     RES      SERV   TOTAL    SCHED    SCHED
 MINIMUM                120       7       0         1     128        0        7
 PREHEARING DETENTION     5       2       0         1       8        0        2
 R&E                    545     395      14        28     982       30      365
 TRANSIENT               25      17       1         0      43      -14       26
 LOCATION TOTALS        695     421      15        30    1161       16      400

* TRANSPORTATION *
 GENERAL POPULATION                                                        3


BED SUMMARY DISPLAYED...
 PF1> HELP  PF4> NEXT INST  PF5> NO BED REPORT  PF19> PREV DATE   PF20>NEXT
```

Exhibit E–6. Approval of a Transfer Request Screen (South Carolina DOC)

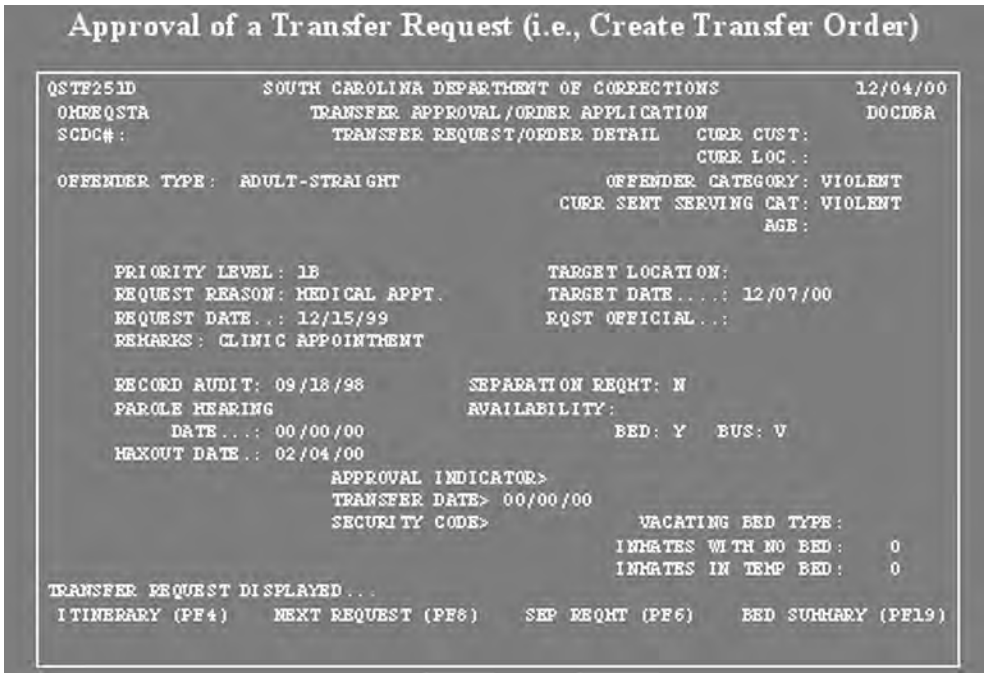


Exhibit E–7. Bus Route Summary Screen (South Carolina DOC)

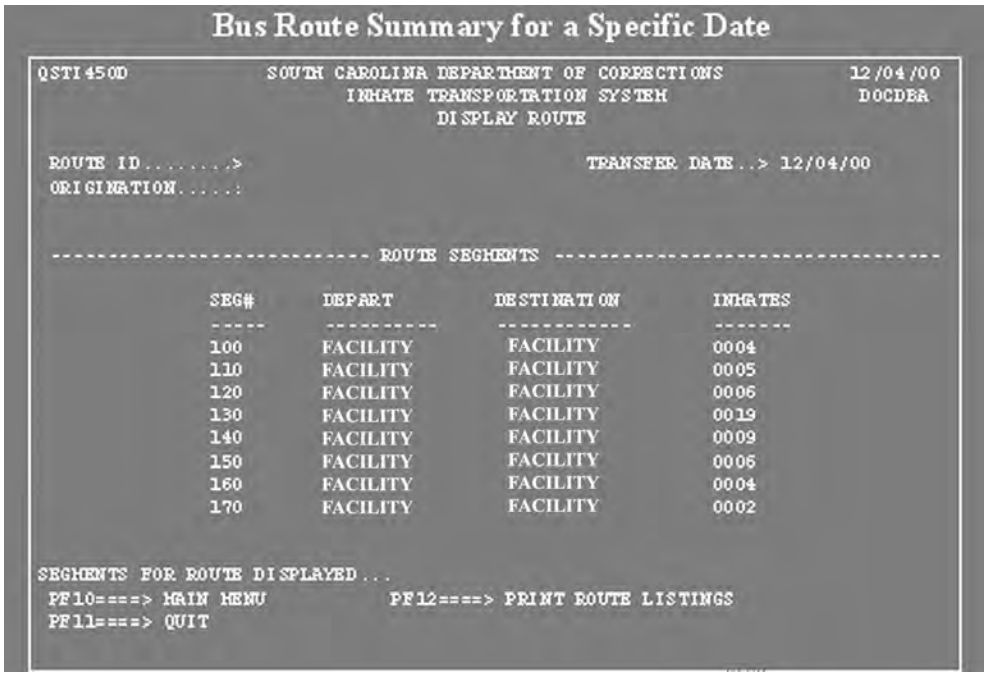
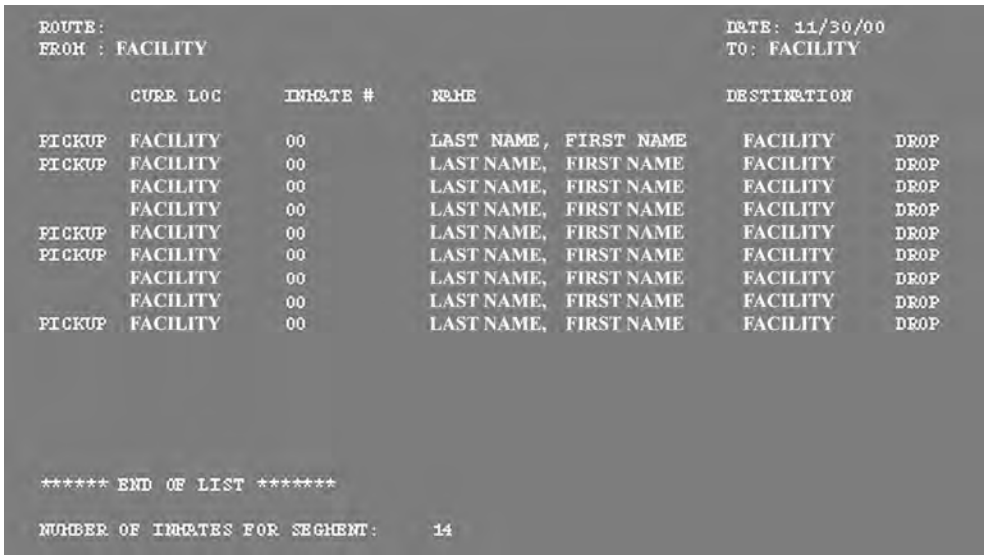


Exhibit E–8. Pickup/Dropoff Report Screen (South Carolina DOC)



ROUTE: DATE: 11/30/00
FROM : FACILITY TO: FACILITY

	CURR LOC	INMATE #	NAME	DESTINATION	
PICKUP	FACILITY	00	LAST NAME, FIRST NAME	FACILITY	DROP
PICKUP	FACILITY	00	LAST NAME, FIRST NAME	FACILITY	DROP
	FACILITY	00	LAST NAME, FIRST NAME	FACILITY	DROP
	FACILITY	00	LAST NAME, FIRST NAME	FACILITY	DROP
PICKUP	FACILITY	00	LAST NAME, FIRST NAME	FACILITY	DROP
PICKUP	FACILITY	00	LAST NAME, FIRST NAME	FACILITY	DROP
	FACILITY	00	LAST NAME, FIRST NAME	FACILITY	DROP
	FACILITY	00	LAST NAME, FIRST NAME	FACILITY	DROP
PICKUP	FACILITY	00	LAST NAME, FIRST NAME	FACILITY	DROP

****** END OF LIST *******

NUMBER OF INMATES FOR SEGMENT: 14

Dynamic Simulation Modeling

In October 1998, SCDOC obtained funding from the National Institute of Justice and formed a practitioner-researcher partnership with the College of William and Mary. This partnership developed a PC-based software package to simulate the interactive dynamics of prison classification policies, sentencing structure, and inmate behavior and the resulting impact on bed requirements. The modeling software is an example of combining new computer technologies with offender classification databases to produce dynamic prison classification policy simulations.

This modeling software provides a very flexible tool with which analysts can simulate the interactive dynamics of classification policies and bed demands with various "what if" scenarios (e.g., introducing changes in classification risk factors, introducing truth in sentencing, changing programming or minimum-security placement policies). Users of the simulation model software will primarily be evaluating the effects of varying classification policies under different assumptions or expectations about prison population flow and inmates' institutional behavior. The system can also project various future medical and mental health needs.

Selected screens from the SCDOC modeling software with text overlay, provided by the SCDOC Division of Research and Information, are shown below. The screens

illustrate some, but not all, of the basic steps in building a "what if" scenario model (exhibit E–9). The basic steps in developing modeling scenarios are as follows:

1. *Create a scenario:* What if the number of disciplinaries in a period were changed to qualify inmates for the work crew program?

2. *Assign variables relevant to the scenario:* Severity of current offense, number of disciplinary infractions, sentence time remaining.

3. *Establish decision rules:* Instructions relevant to processing variable values (e.g., no sex offenders, less than 3 years left to outdate) or building "AND/OR" statements (e.g., inmate must be female and have less than three disciplinaries in the past year).

4. *Establish choices:* Types of beds in the system; minimum, medium, maximum security; work program. These choices become the categories to which the scenario is projecting (number of inmates falling into each choice category in the simulation scenario output).

5. *Classify or run the scenario:* A classification scenario specifies the conditions that must be met before an inmate is placed in or considered for a particular type of facility or security level. Accordingly, creating a scenario calls for creating choices, rules, variables, and directives.

Exhibit E–9 illustrates the first step in the process.

Exhibit E–9. Create a Scenario Screen (South Carolina DOC)

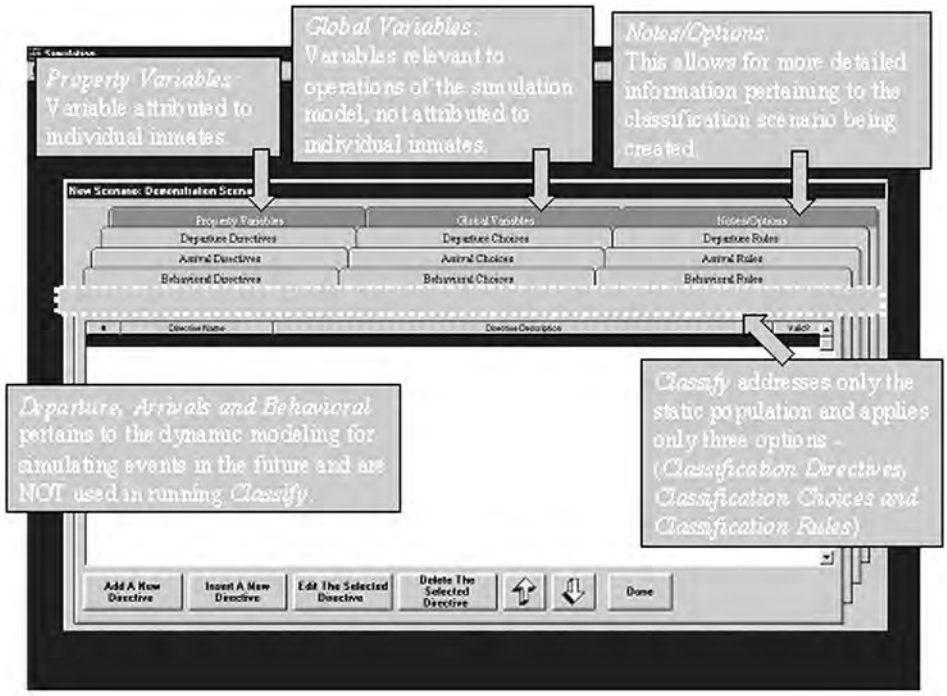


Exhibit E–10. Create a Choice Screen (South Carolina DOC)

In this example, four choices are created (exhibit E–10).

The following screen (exhibit E–11) illustrates the detailed data elements stored under the folder "Static Data." In this example, the user is selecting the inmate qualifier/static data element and associated code table for "Sex/Female."

Exhibit E–11. Create a Rule, Static Data Screen (South Carolina DOC)

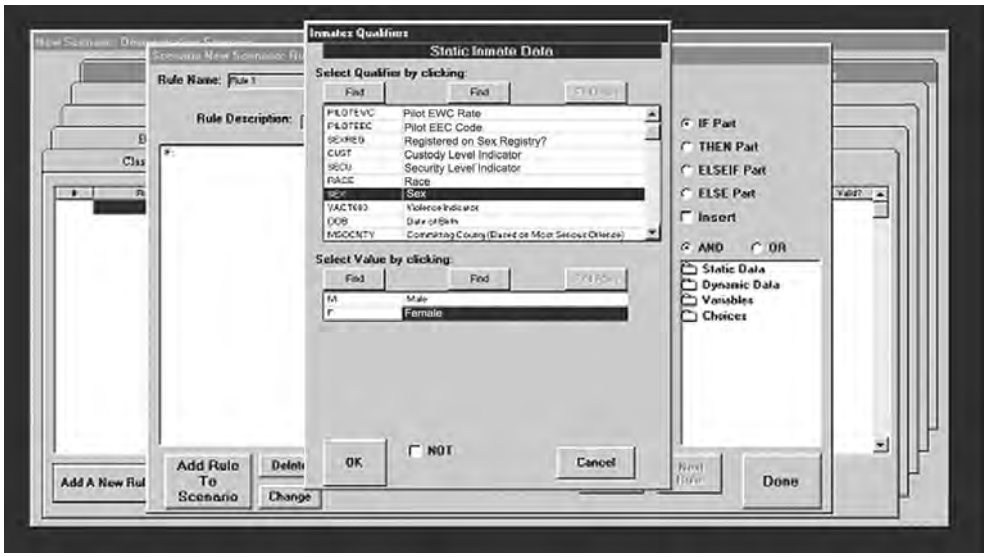


Exhibit E–12 illustrates the detailed elements stored under the folder "Dynamic Data." Using a series of and/or statements, the user builds rule qualifiers. In this example, the user is selecting the dynamic qualifiers/data elements and associated code table for "Disciplinaries."

Exhibit E–13 illustrates a complete rule using static and dynamic data qualifiers followed by a "then" statement or a choice.

Exhibit E–14 illustrates the report options under "Classify." The report options include numeric and graphical reports.

Exhibit E–15 illustrates the results of the report option "Grid showing one or more scenarios versus present." The scenarios used in this example include "New 1.1" (present classification policy with current inmate behavior patterns), "New 2.1" (more restrictive classification policy with current inmate behavior patterns), and "New 3.1" (less restrictive classification policy with current inmate behavior patterns).

Exhibit E–16 illustrates the availability of a drill-down details option for report results. In this example, the detail report shows the inmate's SCDOC number, race, date of birth, and projected maximum outdate. All stored static and dynamic data elements on individual inmates are accessible through this drill-down option.

Exhibit E–12. Create a Rule, Dynamic Data Screen (South Carolina DOC)

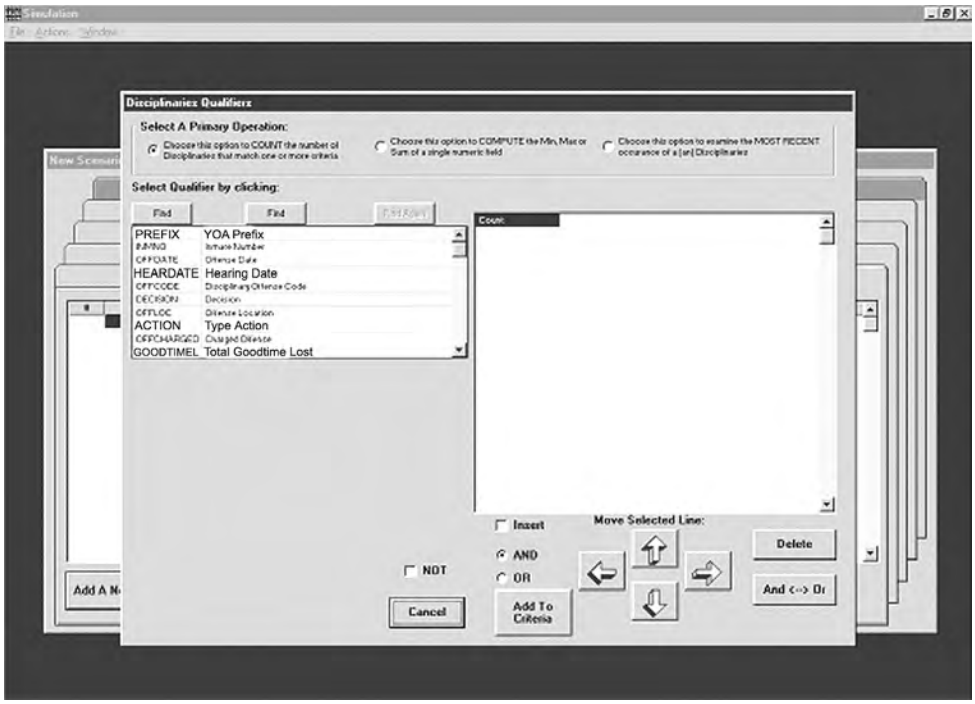


Exhibit E–13. Create a Rule, Static and Dynamic Qualifiers Screen (South Carolina DOC)

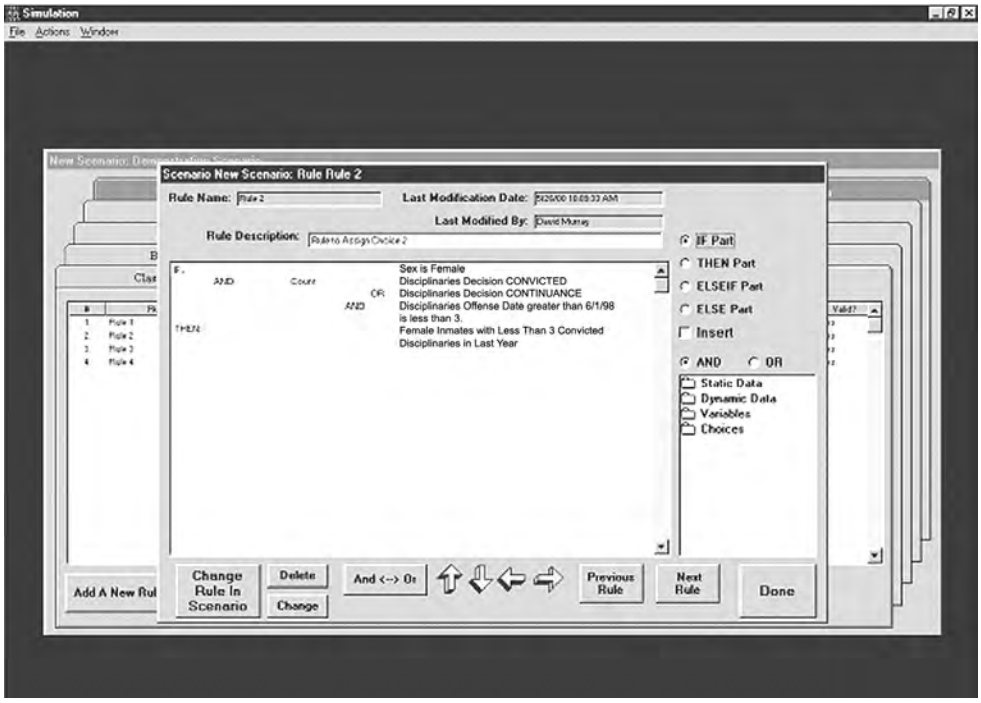


Exhibit E–14. Classify, Select Report Type Screen (South Carolina DOC)

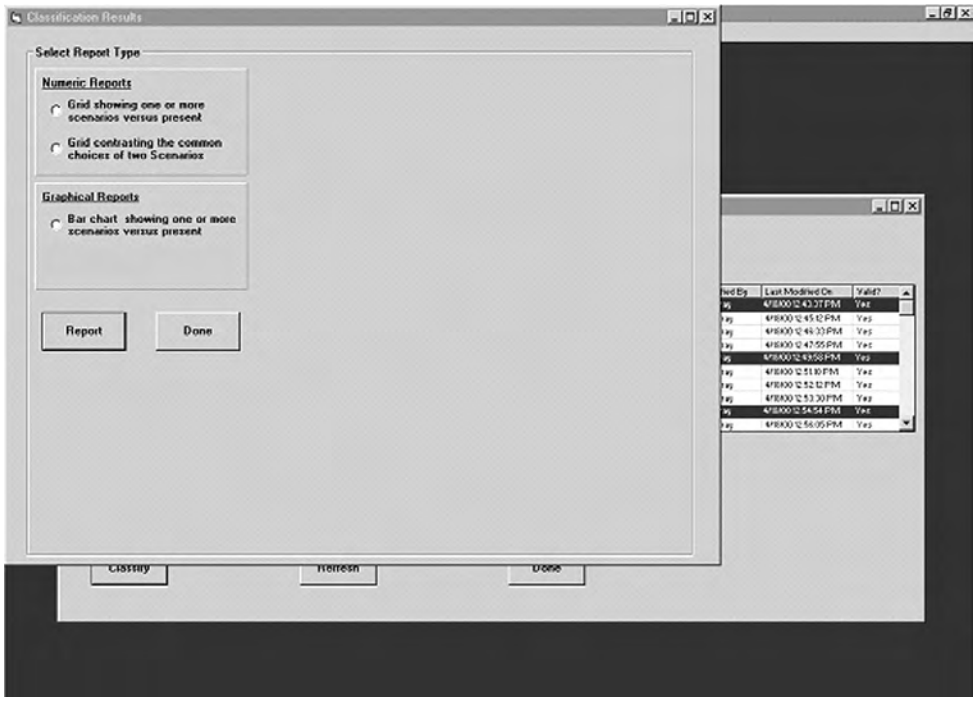


Exhibit E–15. Classify Report Output Screen (South Carolina DOC)

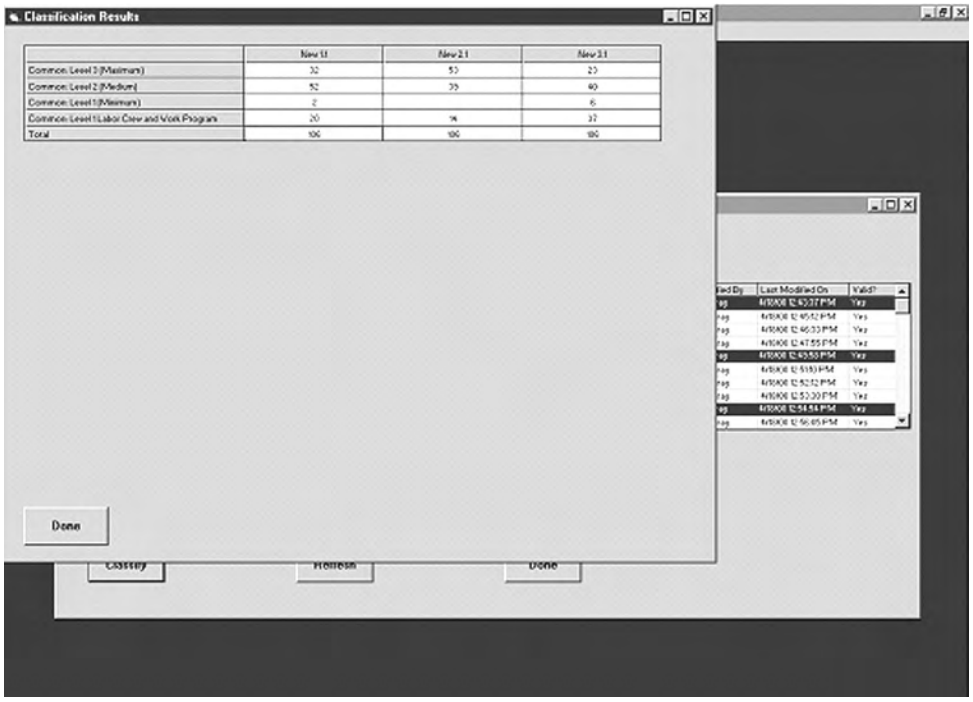


Exhibit E–16. Classify, Drill-Down Feature Screen (South Carolina DOC)

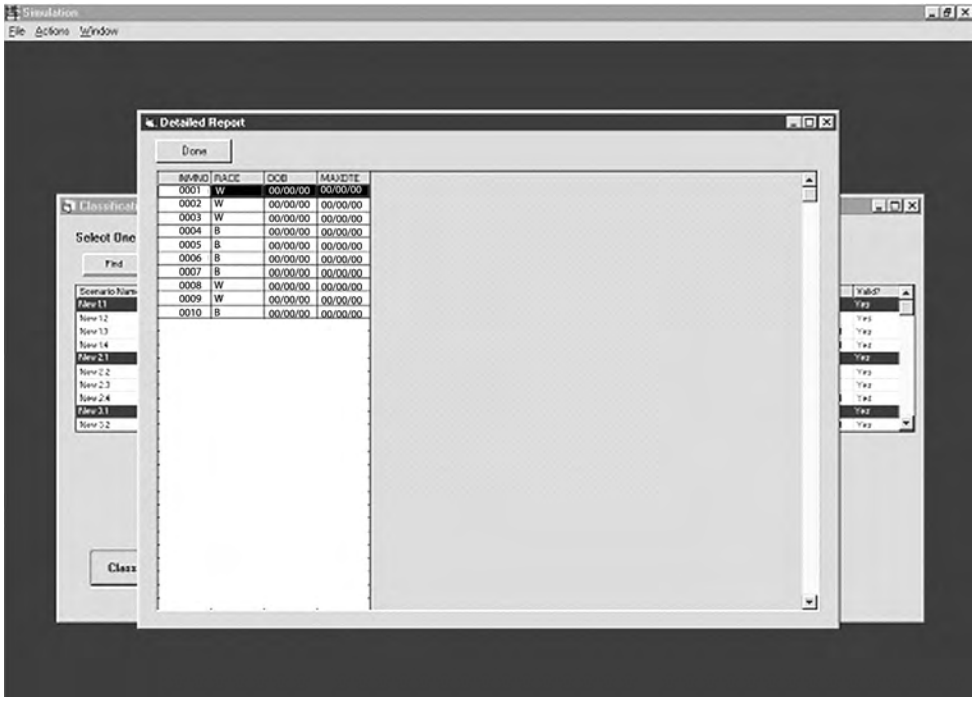


Exhibit E–17. Classify, Report Output Option Screen (South Carolina DOC)

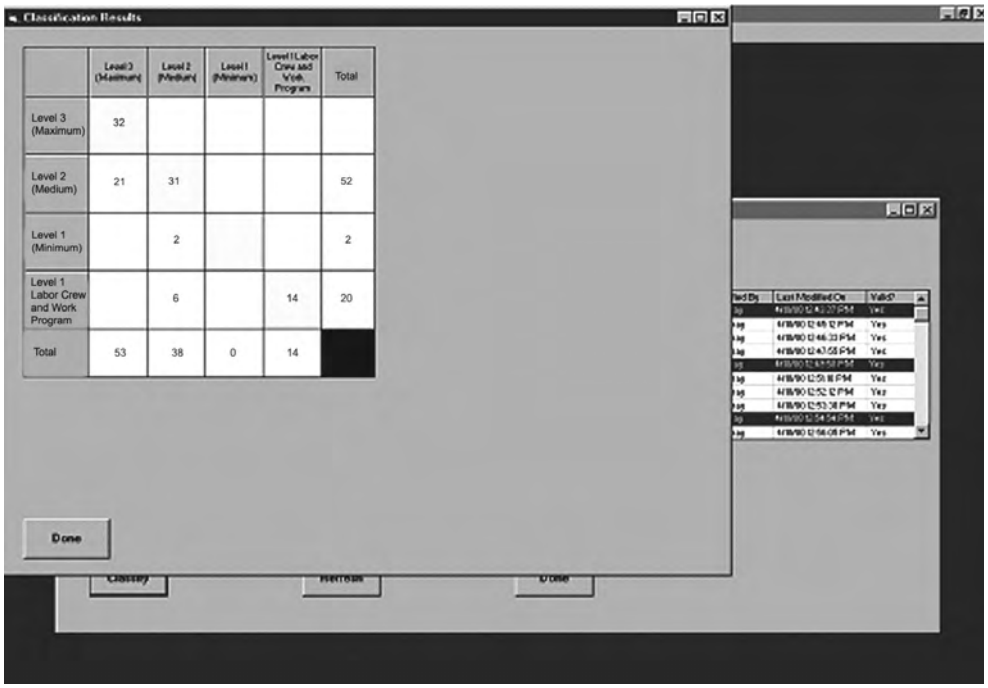


Exhibit E–17 illustrates the results of the report option "Grid showing contrasting common choices of two scenarios." The scenarios used in this example include "New 1.1" and "New 2.1." The results from this report can also be accessed in more detail using the drill-down method.

Exhibit E–18. Classify, Report Output Charting Screen (South Carolina DOC)

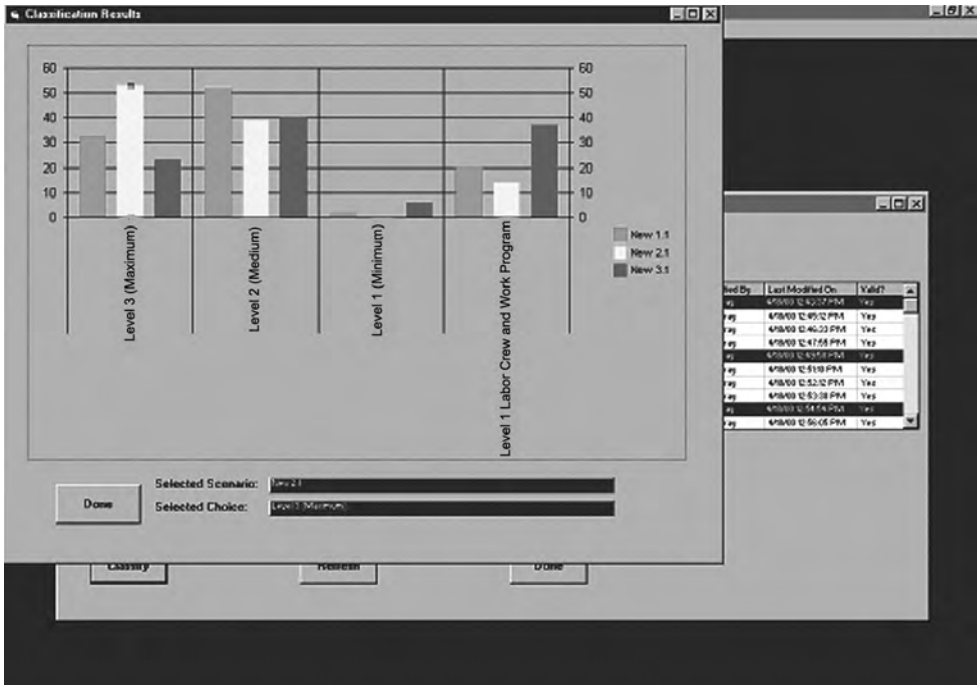


Exhibit E–18 illustrates the results of the report option "Bar chart showing one or more scenarios versus present." The scenarios used in this example include "New 1.1," "New 2.1," and "New 3.1."

Exhibit E–19 illustrates the "Scenario Selection" box. The model allows the user to select one or more scenarios to run for a desired number of months using stock population, arrivals, or both.

Exhibit E–20 illustrates the results of a scenario "run." During the first step of the simulation, the model generates the number of inmates in each bed type at the beginning of the simulation period. After this step is completed, the simulation model schedules events (arrivals, departures, disciplinary infractions, and classified reviews). As each inmate is accessed and an event is scheduled for each inmate, the model cumulates counts for each month and interactively displays the monthly total when all monthly events have been completed. The results (classification and events) for each period are stored in a Microsoft Access database file, which can be used for analysis.

Exhibit E–19. Simulation Scenario Options Screen (South Carolina DOC)

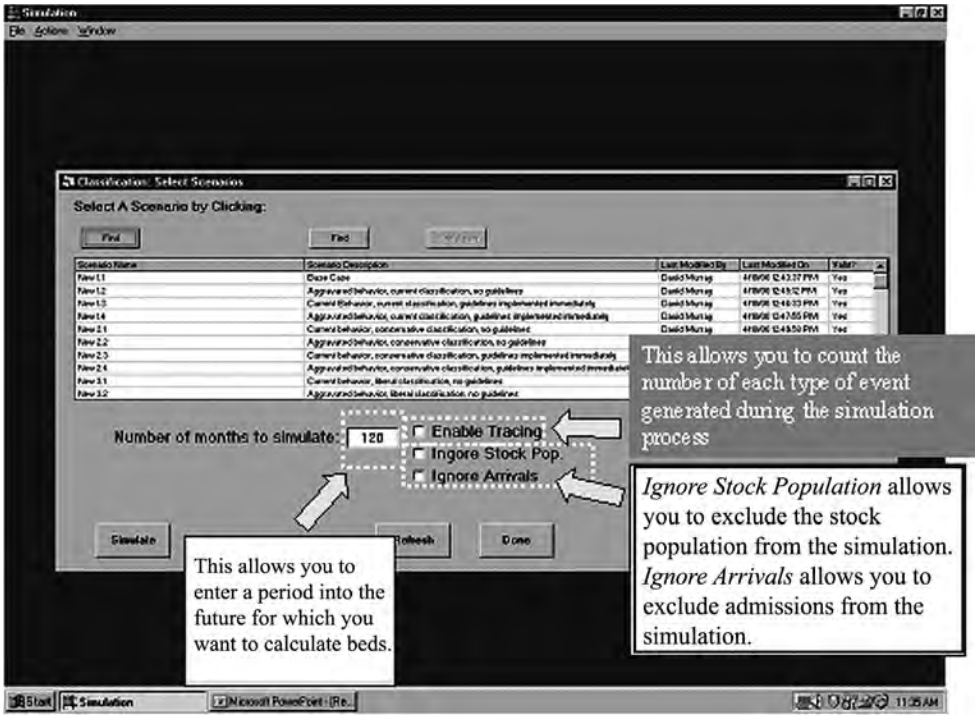
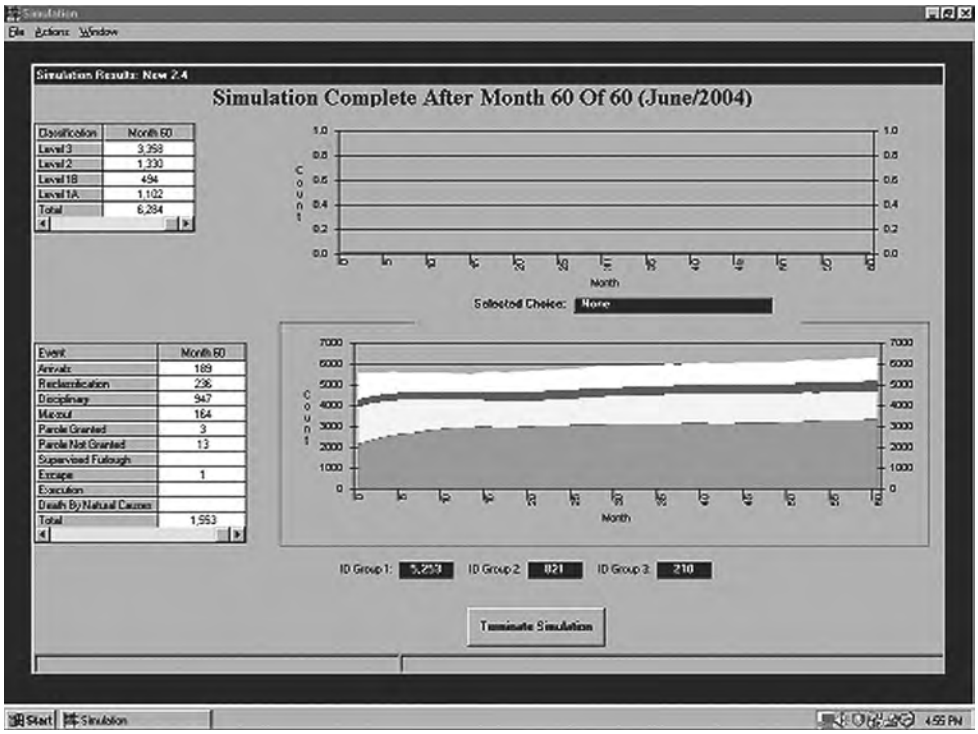


Exhibit E–20. Simulation Report Output Screen (South Carolina DOC)



Appendix F: New York Department of Correctional Services Summary

New York Department of Correctional Services
Director, Office of Classification and Movement
Harriman Office Building Campus
Albany, NY 12226
518–457–6022

General System Overview

On September 30, 2000, the New York State Department of Correctional Services (NYDOCS) had 70,327 inmates in custody. Exhibit F–1 shows the distribution of sentence length and type of commitment crime for the population.

There are 71 prisons, including 6 reception centers, 4 of which are also classification centers. One center is for females. Each facility has a guidance unit, which is responsible for case processing, including internal classification and external reclassification. The 71 prisons are divided into regional hubs, each of which has a unit responsible for classification and movement within the region, excluding maximum-security inmates. A unit in the central office is responsible for interhub classification and movement, maximum-security inmates, and overall supervision of classification.

The current management information system was developed in 1989 and was most recently upgraded in 1996. NYDOCS is in the process of migrating from a mainframe-only environment to one that emphasizes cooperative processing between the mainframe and the client-server platforms. The major component in this migration is replacement of coaxial cabling.

Exhibit F–1. NYDOCS Population, by Commitment Crime and Sentence Length: September 30, 2000

Commitment Crime and Sentence Length	Inmates	
	n	*%*
Commitment crime		
Violent	41,667	59
Property	5,311	8
Drug	21,500	31
Other	1,849	3
Total	70,327	100
Sentence (years)		
Less than 2	8,265	12
2–5	34,530	48
5–10	12,198	17
More than 10	15,334	22
Total	70,327	100

NYDOCS = New York Department of Correctional Services
Note: Percentages may not sum to 100 because of rounding.
Source: NYDOCS.

NYDOCS currently operates an IBM OS/390 mainframe within one of New York State's consolidated data centers. This system supports NYDOCS production application systems. In addition, NYDOCS will have 85 Microsoft Windows NT/4.0 servers installed at the central office, 71 correctional facilities, and 4 local offices to support office automation, Lotus/Domino/Notes/intertrack, and file and print services. NYDOCS is migrating more than 4,500 devices installed at these locations, ranging from model 3270 terminals to model 2867 terminals to Intel Pentium III workstations. Microsoft Windows NT/4.0 is the standard operating system for personal computers (PCs).

The NYDOCS telecommunications network consists of a frame relay wide area network (WAN) with multiple Ethernet local area networks (LANs) located at the central office, 71 correctional facilities, and 4 local offices. The WAN is used to interconnect these NYDOCS sites across the state to build a common network. All locations are connected with a 56 KB circuit. These circuits will be upgraded to T1 (1,544 Mbps) circuits. NYDOCS uses the transmission control protocol/Internet protocol (TCP/IP) over an Ethernet infrastructure to support access to the Microsoft Windows NT servers from PCs and terminal access to the IBM mainframe. NYDOCS also utilizes its systems network architecture (SNA) network connecting model 3270 devices through data link switching. This encapsulates the SNA traffic, enabling it to travel over the TCP/IP network. The Population Management System consists of 24 subsystems, 9 of which relate to classification. The central subsystems for classification are as follows:

1. *State ready:* Tracks all inmates declared state ready by the counties.

2. *Placement:* Matches reception inmates with available beds.

3. *Reception/classification:* Displays all information collected at reception; calculates time computations and security classification.

4. *Locator:* Identifies all beds and tracks all inmate movements.

5. *Guidance information management:* Supports the classification and transfer request process.

6. *Inmate transfer:* Supports review of transfer requests.

7. *Disciplinary:* Records disciplinary charges and dispositions.

8. *Separation:* Identifies and tracks inmates to be kept separate.

9. *Medical:* Supports medical classification and other medical processing.

System Highlights

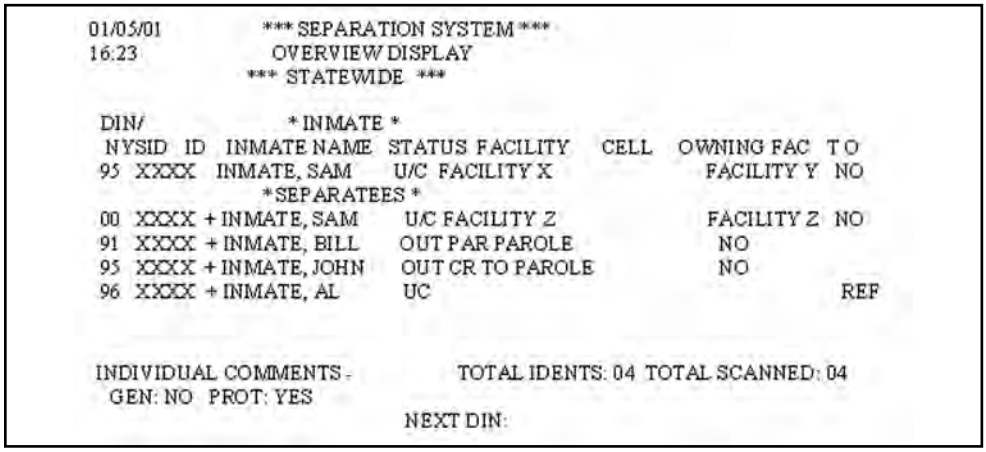
Separation System

The purpose of the separation system is to identify and keep separate persons who are likely to harm one another or together are likely to harm others. Exhibit F–2 is the first of three screens in the separation system.

An inmate's first screen can be accessed through his or her NYDOCS or state identification number. By including access through the state identification number, the system makes it possible to enter and look up persons who are not yet in the department. For instance, it is common for district attorneys to send letters notifying corrections personnel of prospective inmates who have testified against one another before they are sentenced. When the inmates are scheduled to be admitted, the reception center can make advance preparations to keep them apart.

The screen shows a list of the inmate "separatees," their current locations, and their transfer status. In some cases, inmates have unidentified separatees (e.g., an inmate may be burned out of the cell and the perpetrators are unknown.). In such a case, staff can enter a general comment; its presence is indicated at the bottom left of the screen. Entering a protected comment, which only a few staff can access (e.g., staff whose family may be the victim of an inmate's crime), is also possible. Its presence is also indicated at the bottom of the screen. It is possible to undo a separatee relationship if the persons are no longer enemies. A negative identification is indicated by a hyphen in the "ID" field.

Exhibit F–2. Separation System Overview Screen (New York DOCS)



```
01/05/01          *** SEPARATION SYSTEM ***
16:23               OVERVIEW DISPLAY
                  *** STATEWIDE ***

DIN/                    * INMATE *
 NYSID  ID  INMATE NAME  STATUS FACILITY    CELL   OWNING FAC  T O
 95  XXXX   INMATE, SAM     U/C  FACILITY X          FACILITY Y  NO
                  * SEPARATEES *
 00  XXXX + INMATE, SAM      U/C FACILITY Z          FACILITY Z  NO
 91  XXXX + INMATE, BILL     OUT PAR PAROLE           NO
 95  XXXX + INMATE, JOHN     OUT CR TO PAROLE        NO
 96  XXXX + INMATE, AL       UC                                  REF


INDIVIDUAL COMMENTS -          TOTAL IDENTS: 04  TOTAL SCANNED: 04
  GEN: NO  PROT: YES
                               NEXT DIN:
```

Exhibit F–3. Separation System Relationship Identification Screen (New York DOCS)

```
01/05/01            *** SEPARATION SYSTEM ***
16:45           RELATIONSHIP IDENTIFICATION DISPLAY
C999Wxx
DEPT ID: 95  xxxx  NAME: INMATE, SAM                NYSID: XXXXXXX
CUSTODY STATUS: IN CUSTODY    T.O. STATUS NONE          FAC:
CURRENT FAC: ;PRISON X CURRENT LOC:
OWNING  FAC: PRISON X

DEPT ID: 95  xxxx        NAME: INMATE, JOHN             NYSID: xxxxxxx
CUSTODY STATUS: OFF COUNTS    T.O. STATUS NONE          FAC:
CURRENT FAC:          CURRENT LOC:
OWNING  FAC: FACILITY M

TRANSACTION TYPE: POSITIVE IDENTIFICATION       EFFECTIVE DATE: 11/07/xx
ID SOURCE: GC COUNSELOR AUTHORIZER:                 DATE ENTERED: 11/07/xx
FACILITY: CENTRAL OFF   ENTERED BY:                    07:41

RELATIONSHIP GENERAL COMMENTS: YES
INDIVIDUAL COMMENTS ON FILE: DIN 95  xxxx    GENERAL - NO     PROTECTED - YES
DIN 95Rxxxx    GENERAL - NO     PROTECTED - NO

TOTAL IDENTS: 04 TOTAL SCANNED: 03
```

Exhibit F–4. Separation System Comment Screen (New York DOCS)

```
01/05/01            *** SEPARATION SYSTEM ***
16:52               SEPARATEE COMMENT DISPLAY

      DEPT ID   NAME                          NYSID
INMATE 1:  95  xxxx   INMATE, SAM                xxxxxxx
INMATE 2:  95  xxxx   INMATE, JOHN               xxxxxxx

TRANSACTION TYPE: POSITIVE IDENTIFICATION       EFFECTIVE DATE: 11/07/xx
ID SOURCE: GC COUNSELOR   AUTHORIZER:               DATE ENTERED: 11/07/xx
FACILITY: CENTRAL OFF     ENTERED BY:                  07:41

GENERAL
COMMENTS: ( 10/23/XX, FACILITY X - JOHN, ALONG W/AL AND 96  xxxx & BILL
91  xxxx )
     ( APPROACHED SAM, THREATENED HIM W/SHANK & RAZORS TO OBTAIN    )
     ( GOLD CHAIN & OTHER PROP.  NO INJURIES .. GARRETT, PROT. CUST.      )
```

The separation system displays two detailed screens for each identification. The first screen provides background information about the identification, such as the persons who authorized and entered the identification and the date of the entry (exhibit F–3). This background information is critical. For instance, two inmates who had been housed together may have become separatees. Staff must be able to show when the separation information was developed and entered. Exhibit F–4 shows the specifics of the separation.

Exhibit F–5. Separation Referral Form (New York DOCS)

Subject: (Name and Identification Number of Inmate)

Separation Data

DIN: _____ *Name:* _____ *ID Source:* _____

Date(s): _____ *Facility:* _____ *Events, Motives, Verification* _____

_____

_____

_____ *Weapons:* _____

Injury: _____ *Fac. Action:* _____

Exhibit F–5 shows the e-mail form on which separatee referrals are submitted. Staff must specify who is involved, what happened, why it happened, where it happened, when it happened, what weapons were used, the severity of the injury or injuries, and what action has been taken by the facility. The staff person must also specify the source of the information. Access to the separation system is tightly controlled.

Exhibit F–6 displays the access grid. There are 18 levels of access resulting from combinations of 6 variables.

Separation data are fed automatically to users who need them to make decisions. For instance, when staff review an inmate for transfer, the names of all the facilities that house that inmate's enemies are shown on the transfer review screen. Similarly, hubs cooperate in transporting inmates to medical clinics. When inmates are scheduled for transport to a clinic, the locations and names of all separatees are shown.

Disciplinary System

Security classification is linked to inmates' disciplinary behavior. Exhibit F–7 shows a screen from the New York disciplinary system. The necessary information that is displayed is the date, time, and location of the incident and the hearing; charges; convictions; and dispositions.

Operations control reports. Exhibit F–8 is an extract from a report that analyzes the distribution of initial security classification decisions and overrides. It presents production for one classification center. The full report presents data for each classification counselor, then sums the data for each classification center, and finally sums the data for all classification centers combined. With this report, supervisors

Exhibit F–6. Separation System Access Levels (New York DOCS)

Access Level	Inquiry	Display	Owned/Current or All Inmates	Comments	Protected Authorizer
0	Yes	No	Owned/current	No	No
1	Yes	No	Owned/current	Yes	No
2	Yes	No	All	No	No
3	Yes	No	All	Yes	No
4	Yes	Yes	Owned/current	No	No
5	Yes	Yes	Owned/current	Yes	Yes
6	Yes	Yes	All	No	No
7	Yes	Yes	All	Yes	No
8	Yes	No	Owned/current	No	Yes
9	Yes	No	Owned/current	Yes	Yes
A	Yes	No	All	No	Yes
B	Yes	No	All	Yes	Yes
C	Yes	Yes	Owned/current	No	Yes
D	Yes	Yes	Owned/current	Yes	Yes
E	Yes	Yes	All	No	Yes
F	Yes	Yes	All	Yes	Yes
I	Overview	No	Owned/current	No	No
J	Overview	No	All	No	No

NYDOCS = New York Department of Correctional Services
Source: NYDOCS.

Exhibit F–7. Disciplinary Incident Summary Screen (New York DOCS)

```
01/05/01              DISCIPLINARY SYSTEM
                        CENTRAL OFFICE          PAGE  1
                 DISCIPLINARY INCIDENT SUMMARY   MANUAL RECS ?

DIN: 95  XXXX  NYSID:  XXXXXXXQ  NAME:  INMATE, SAM
CURRENT FACILITY:  XXX PRISON X    CURRENT HOUSING LOCATION:
 ---------------------------------------------------------------------
 TIER 3  INCIDENT: 06/23/XX 06:00 PM                      PRISON Y
      HEARING : 06/29/XX 09:43 AM                        PRISON Y
      DIS REV : 07/17XX                                 PRISON Y
 999.99 ADMIN SEG
   21   AD SEG CONF                  SERVICE DTES 06/23/XX 07/14/XX
 ---------------------------------------------------------------------
 TIER 2  INCIDENT: 06/23/XX 04:30 PM                      PRISON Y
      HEARING : 06/30/XX 10:53 AM                       PRISON Y
 104.13 CREATE DISTURB   106.10 DIRECT ORDER
   30D PACKAGE    COMMISSARY          SERVICE DTES 06/30/XX 07/30/XX
   30D RECREATION                     SUSPD TO 09/28/XX
 ---------------------------------------------------------------------

                                NEXT DIN:

<CURSOR + ENTER>  INCIDENT DETAIL
```

can compare the number of decisions, the distribution of decisions, and overrides for individual counselors and classification centers.

Exhibit F–9 is a weekly report that lists transfer orders that are more than 21 days old. Presumably, if an inmate's name is placed on a transfer order, the inmate should be transferred. There may well be reasons that a transfer does not occur (e.g., medical problems), but these cases need to be monitored. In some cases, the transfer order should be canceled; in others, the transfer should be expedited; and in others, there may be a reason to keep the transfer on hold.

Exhibit F–10 is a monthly report that lists cases between 78 months and 9 months to earliest release date that do not have automated initial security classification guidelines (inmates with more than 78 months or less than 9 months to earliest release date are not reclassified). When inmates are reclassified quarterly on the automated reclassification guideline, several scores are taken from the initial guideline. If no initial guideline exists, then an automated reclassification guideline cannot be done. Edits to prevent inmates from leaving initial classification without an initial guideline exist, but some inmates came into the system before 1982, when the initial guideline was automated. Inevitably, odd cases that defy all normal expectations built into edits get through. In sum, although every case should have an initial guideline, some do not, so monitoring for missing information is important.

Exhibit F–8. Initial Security Classification Production (New York DOCS)

Final Classification						Counselor Overrides												
						Overrides			Placement Recommendations					Final Classification				
Total	Min	Med B	Med A	Max B	Max A	Total	Up	Down	Min	Med B	Med A	Max B	Max A	Min	Med B	Med A	Max B	Max A
Current Period																		
223	54	44	86	18	21	25	23	2	21						18	2	1	
	24%	20%	39%	8%	9%	11%	10%	1%		1						1		
											1						1	
√													2				2	
Base Period																		
2,683	611	495	1,085	242	250	212	173	39	148						115	32		1
	23%	18%	40%	9%	9%	8%	6%	1%		11						9		2
											19				8		5	6
												5				2		3
													29				29	

Min = minimum security
Med B = medium security, level B
Med A = medium security, level A
Max B = maximum security, level B
Max A = maximum security, level A
Note: Exhibit shows data from an actual report for an undisclosed center in New York State. Current period is February 1, 2000 through February 29, 2000. Base period is February 1, 1999 through January 31, 2000.
Source: New York Department of Correctional Services.

Exhibit F–9. Outstanding Transfer Orders Report (New York DOCS)

05/21/00

Statewide Report of Outstanding Transfer Orders Over 21 Days Old

Sending Facility	Current Facility	DIN	Name	Receiving Facility	T.O. Date	# of Days	Approval Reason
		98 xxxx	XXX,XXX		02/08/00	103	44
		98 xxxx	XXX,XXX		04/07/00	44	44
		99 xxxx	XXX,XXX		04/03/00	48	17

Management reports. Exhibit F–11 is an extract from a weekly report that compares the classification of inmates with the classification of the facilities in which they are housed. This report is critical for monitoring the efficient use of beds. For each type of facility, the report shows the distribution of inmates by their security classification. (CASAT [Comprehensive Alcohol and Substance Abuse Treatment] is a type of facility that specializes in substance abuse treatment.)

Exhibit F–10. Report Showing Inmates Without Automated Initial Security Classification Guidelines (New York DOCS)

3/5/00

Inmates under Custody
Without a Completed Initial Security Guideline Record
and whose Earliest Release is less than Nine Months and More than 78 Months

Facility XXX

DIN	Name
74 xxxx	Xxxx, Xxxx
82 xxxx	Xxxx, Xxxx

Exhibit F–11. NYDOCS Population, by Security Classification and Type of Facility: December 11, 2000

	Inmate Security Classification												
	Unclassified		Maximum A		Maximum B		Medium A		Medium B		Minimum		
Facility Type	***n***	**%**	***n***	**%**	***n***	**%**	***n***	**%**	***n***	**%**	***n***	**%**	**Total (*N*)**
Maximum	1	<1	16,707	75	3,831	17	1,258	6	278	1	243	1	22,318
Medium	3	<1	66	<1	3	<1	23,356	66	8,477	24	3,736	11	35,641
Minimum	0	0	2	<1	0	0	20	1	15	<1	3,910	99	3,947
Work release	0	0	3	<1	0	0	419	18	192	8	1,777	74	2,391
Reception and transit	457	16	503	18	132	5	764	27	365	13	563	20	2,784
Special needs	0	0	412	56	65	9	182	25	59	8	25	3	743
CASAT	0	0	0	0	0	0	906	38	339	14	1,132	48	2,377
Total	461	1	17,693	25	4,031	6	26,905	38	9,725	14	11,386	16	70,201

CASAT = Comprehensive Alcohol and Substance Abuse Treatment

Appendix G: Colorado Department of Corrections Summary

Colorado Department of Corrections
Director of Research
2862 South Circle Drive
Colorado Springs, CO 80906
719–226–4372

General System Overview

On June 30, 2000, the Colorado Department of Corrections (CODOC) had custody of 15,999 inmates. The average length of the minimum aggregate sentence for 1999 admissions was 5.4 years. Exhibit G–1 shows the distribution of inmates by commitment crime in June 1999.

CODOC has 24 facilities. Two are reception and classification centers. At each facility, a unit of counselors is responsible for internal classification and reclassification. A classification unit in the central office is responsible for external classification.

CODOC implemented an automated information system in 1977. A major redesign occurred in 1991. CODOC moved from a hierarchical database using COBOL to a relational database using Informix 4gl. CODOC uses three Sun 5500 computers with the Solaris operating system. One machine supports the database, and the other two are used as front-end processors that support the applications. When the new system went live, fewer than 100 concurrent users were accessing the database. Currently, the system supports nearly 1,000 concurrent users accessing the 10 gigabyte database (all facilities and parole/community offices within the state).

The Colorado Department of Corrections Information System (DCIS) host machine is also directly linked to the Colorado Crime Information Center (CCIC), which gives access to specific DCIS applications through the CCIC network. DCIS allows identified users to log in to the Colorado Information Technology System for access to financial and personnel files. Most recently, CODOC was linked to the Colorado Integrated Criminal Justice Information System, which standardizes data and communications technology throughout the criminal justice community (law enforcement, district attorneys, state-funded courts, and state-funded adult and youth corrections).

Exhibit G–1. CODOC Population, by Commitment Crime: June 30, 1999

	Inmates	
Commitment Crime	***n***	***%***
Violent	6,430	44
Property	3,312	23
Drug	2,800	19
Other	2,043	14
Total	14,585	100

CODOC = Colorado Department of Corrections
Source: CODOC.

The Offender Tracking System is the largest database controlled by CODOC. This database holds all offenders' historical, crime, institutional behavioral, and program data. In addition, the database contains information about resource allocation and workload measures.

Most of the DCIS applications are for tracking offenders. These include the following subapplications:

- Case manager tracking, community referral movement and tracking.
- Detainer, disciplinary, education.
- Inmate classification.
- Mittimus.
- Job skills and assignments, time computation.

System Highlights

Initial Classification

The programmers at the Denver Reception and Diagnostic Center (DRDC) produce five packages of information about each inmate, all of which are entered into the automated information system:

- *Admission data summary (ADS):* Includes instant offense data, criminal history, identification, demographic data, alert data (e.g., detainers, which appear as alerts on various action screens).
- *Inmate initial custody rating:* Consists of nine scored items, which are calculated by the case manager, entered manually on a worksheet, and then entered into the automated information system.
- *Initial needs assessment:* Needs are assessed in each of 11 areas on a scale of 1–5. The programmer enters the classification level for each area.
- *Diagnostic summary:* A structured narrative covering the 11 areas. Each area includes a brief description of the facts and a recommendation.
- *Level of Supervision Inventory:* The management information system (MIS) supports the programmers' work in various ways. ADS uses a graphical user interface. The ability to move flexibly from one item to another and the popup menus that give the descriptions for each set of codes have increased staff efficiency and accuracy. Exhibits G–2 and G–3 show the ADS screens for criminal history, including escape history.

Exhibit G–2. Admission Data Summary, Criminal History Felonies and Misdemeanors (Colorado DOC)

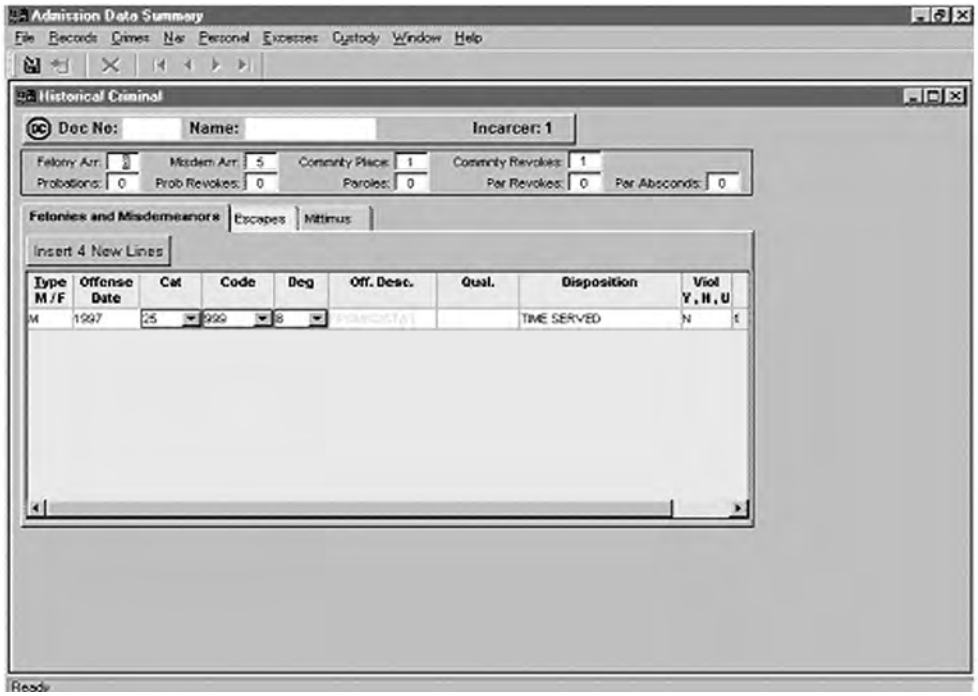


Exhibit G–4 shows the ADS screen for the mittimus. Mittimus information is sent electronically directly from the Colorado Judicial Department to CODOC, eliminating manual data entry.

Exhibit G–3. Admission Data Summary, Escape History (Colorado DOC)

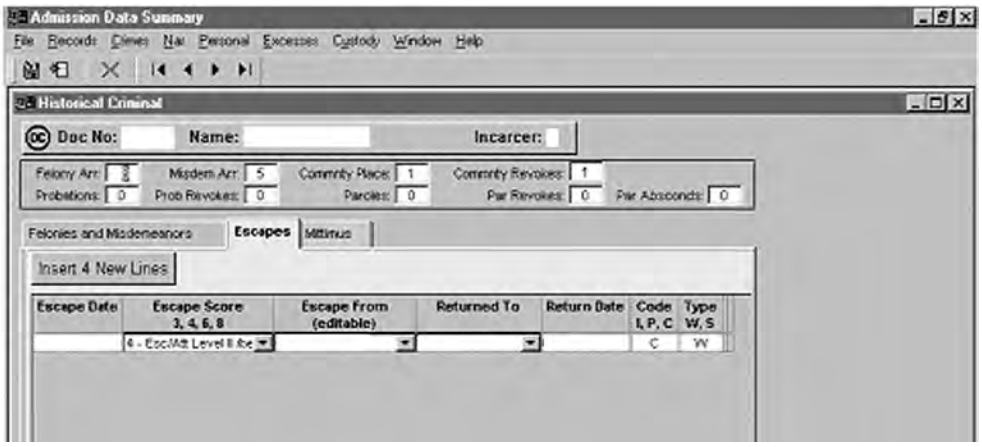
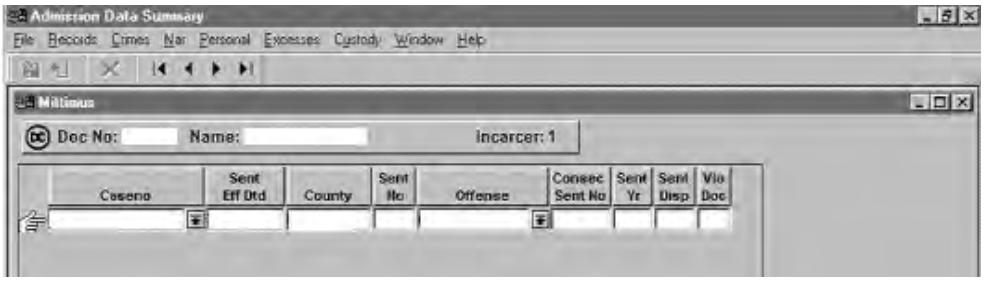


Exhibit G–4. Admission Data Summary, Mittimus (Colorado DOC)



Reports

DRDC produces several reports that monitor classification work. Exhibit G–5 is a segment of a report that monitors the quality of classification work. A random sample of a programmer's classification work is drawn, and the programming supervisor reviews the work. Errors are categorized into three classes of severity for each of the five classification packages. For example, ADS errors are classified as follows:

- Class I: Pending charges are not listed.
- Class II
  - FBI number, state identification number, or Social Security number is wrong or not reported.
  - Descriptive data are missing or wrong (e.g., height, weight, eye color, marks/tattoos).
  - Names of codefendants are wrong or not reported.
  - Prior offenses are not reported or reported incorrectly.
  - Escapes/absconds are not reported or reported incorrectly.
  - Alerts, if needed, are not reported in comments, or alerts that are reported do not apply.
- Class III
  - Aliases, date of birth, or place of birth is wrong or not reported.
  - Numbers of probation/parole/community correction revocations are wrong.
  - Personal data, if available, are missing.
  - Errors of fact (detail errors) are present.

Exhibit G–5. CODOC Initial Classification Audit

Date	Name	ID Number	Status	Class I	Repeat	Class II	Repeat	Class III	Repeat	Critique Date
5/8			TPV	1	0	3	0	3	0	5/12
5/9			NA	0	0	1	0	1	0	5/10
5/10			NA	0	0	1	0	2	0	5/10
5/11			NA	0	0	3	0	1	0	5/16
5/12			TPV	0	0	0	0	1	0	5/16
Total				1	0	8	0	8	0	
Average				0.20	0	1.6	0	1.6	0	

CODOC = Colorado Department of Corrections
NA = new admission
TPV = technical parole violator
Source: CODOC.

Exhibit G–6. CODOC Initial Classification Production Process

Date	Rollover Cases*	TPV†	Waiting on File		Programming‡	No M/D Code§	Ready fo Putdown¶	Available Inventory**	Total Cases††
			Inactive	Parole					
1	7	16	1	12	67	15	11	86	215
2	3	14	3	11	56	25	12	92	216
3	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0
5	0	18	4	12	60	32	0	89	215
6	0	0	0	0	0	0	0	0	0

CODOC = Colorado Department of Corrections
*Each programmer has a quota of cases to classify per day. If there are more new cases to classify than programmer quotas, the excess cases are rolled over to the next day.
†Technical parole violator (TPV) classifications are abbreviated. They are fit into the schedule.
‡Classification in process.
§Classification completed; waiting for medical and/or dental classification.
¶Classification completed; file waiting to be organized.
**Files organized; ready to be sent to central office for review and final approval.
††All cases at reception center ready to classify, in process, or classified.
Source: CODOC.

Programmers get quick feedback on their work (see "Critique Date" in exhibit G–5), and the audits are incorporated into their annual performance evaluations.

Exhibit G–6 is a segment of a daily report on initial classification productivity. Initial classification is an assembly line (though it need not be impersonal) in which all the different disciplines (case manager, medical, records management, etc.) are tightly integrated, and each must produce the information that the other needs on time. The total product must move along on schedule because, for newly admitted inmates to have a bed, old inmates must be classified and moved out.

Exhibit G–6 enables a supervisor to see the size of the classified pool, the backlog of unfinished cases, and the reasons they are unfinished, so that he or she can nudge the process along before a crisis arises.

Internal Program/Work Assignment

The Master Program Scheduling system (MPS) is an MIS that supports internal program and work assignments. At initial classification, inmate needs have been measured on nine dimensions (e.g., academic, vocational, substance abuse, work) on a 5-point scale. Given this initial classification, MPS structures the information needed to match inmate needs with facility resources and needs. MPS has four components:

- Master program schedule.
- Offender program referral.
- Offender program assignment.
- Offender evaluation.

Exhibit G–7 is an example of a master program schedule. It provides the structure in which a program provider can enter all the necessary information about a program. In this case, the program is a work program.

The case manager seeking to assign an inmate to a program can determine vacancies by querying the MPS quota report. As shown in exhibit G–8, the case manager has queried all the therapeutic community programs in facility AC. The case manager can query a wider or narrower range of programs in the facility.

The case manager can then submit an electronic referral to a program and receive an electronic response. The program provider enters the inmate's program performance on the "Offender Evaluation" screen, which in turn updates the inmate's needs. MPS combines individual cases to produce several data summaries in addition to the quota report. Some of them are the following:

- *Offender schedule:* Displays an inmate's program schedule for a day or a week.

Exhibit G–7. Master Program Schedule Screen (Colorado DOC)

```
= MASTER PROGRAM ======QUERY MASTER PROGRAM ==========01/16/2001 =

Program Type: 07  FAC WK ASG                Program: 0412 FACILITY CLERKS
Facility:                        Program Name: ACC ACAD. CLERKS
Start Date: 07/01/1996             End Date:          Duration:
M T W T F S S                                          Start     End
Days  X X X X X          1300  -  1600          Room:
Staff: 43XX  LAST NAME, FIRST
Application Required?: Y                    Quota:  4          Wait list:    3
Paid Program?:    Y      Agency:            CCA      Organization:   2310
Job Board Approval Req?:   Y                Bonus:
Evaluation?:  P                             Type:  E  EVAL TIME
Notes:  MUST HAVE OBTAINED A GED OR ABOVE
```

- *Offender list:* Displays all programs in which an inmate is enrolled, referred, or wait-listed.
- *Program list:* Displays the offender list sorted by program instead of inmate.
- *Offender skills and needs list:* Lists all of an inmate's skills and needs.
- *Facility schedule:* Lists all programs at a facility, by hour and day.

Exhibit G–8. Master Program Scheduling Quota Screen (Colorado DOC)

```
= MPS REPORTS ============= MPS QUOTA REPORT ============= 01/06/2001 =
Page  1

Department of Corrections MPS Quota Report for 01/06/2001

FACS:AC
TYPES:10
ALL PROGRAMS

 Program                Days    Times              Qta  Asgn Pct  Wait   Refr
Refr
 ---------------------- ------ ----------------- ---- ---- ---- ----   ----

 TC/PARTIC M-F          MTWTF   1300-1700           5    6 120%    0      6

 TC NEW                 MTWTF   0800-1200          50    2   4%    0
 TC/PARTICIPANT AM      MTWTF   0700-1100          40   28  70%    0
 TC/PARTICIPANT PM      MTWTF   1230-1630          50   48  96%    0
 TC PART MWF            M W F   1600-2200          60   45  75%    0
 TC PART TTF             T TF   1600-2200          50   38  76%    0
 TC CLERK               MTWTF   0800-1600           1    1 100%    0      0

 TC/BARBER              MTWTF   0800-1600           2    2 100%    0

    Total:  THERA COMM                           258  170  65%    0      6


      Grand Total:                               258  170  65%    0      6
```

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