



RUNNING AN INTELLIGENT JAIL

A Guide to the
Development and
Use of a Jail
Information System



National Institute of Corrections

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RUNNING AN INTELLIGENT JAIL

A Guide to the Development and Use of a Jail Information System

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NIC Accession No. 027446

August 2013

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Foreword

It is clear that virtually all criminal justice organizations, including jails, are now driven by the collection, processing, and application of information specific to these settings. With the increasing focus on cost efficiency and the avoidance of wasteful spending, jail administrators must understand the importance of the potential data at their disposal and strategically plan for faster and more effective forms of data collection, storage, and analysis.

Running an Intelligent Jail: A Guide to the Development and Use of a Jail Information System encourages jail administrators to consider the design and implementation of a jail management information system (MIS) that is tailored to the specific needs of their institutions, is more cost-effective, and is easier to use. The data they are able to collect, store, analyze, and apply to the correctional setting translates to more effective jail management, more realistic short- and long-term goals, the ability to track trends, a more systematic way to measure performance outcomes for the institution and its staff, and pertinent information on the offender population.

These chapters provide specific information on the types of data collection and analysis that are required of most jails, and training materials tailored to users' different skill sets, as well as outlining the steps for implementing a jail management information system, and guidance on how to develop a Request for Proposal and select a vendor.

We have also provided a variety of appendixes, including sample forms and reports, to enhance readers' understanding of the technology and its many applications and provide the information they will need to move their organizations toward data-driven solutions.

Morris L. Thigpen

Director

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Preface

This project is the result of many years of the authors' collective experience in addressing the information technology (IT) infrastructure, database content, and analytical capacities of innumerable criminal justice institutions. We would particularly like to thank Fran Zandi from the National Institute of Corrections for her support and encouragement of this project.

We have worked in this field for most of our careers and are grateful for the opportunity to present this information to our colleagues and allied professionals. It is our hope that this report may be useful—to practitioners in the criminal justice system as well as software developers of jail information systems—as the evolving field of IT is applied to the jail setting, and as more informative analytical tools are developed to provide jail management and staff the data they need to more intelligently run their jails.

Over these years, we have engaged with numerous jails—both large and small—to explore how important the design of effective jail IT systems, and data analysis tools geared to these systems, can be in helping correctional managers run more efficient jails. More sophisticated analytic tools would convert the raw data in a jail's management information system (MIS) into information that can be productively applied to running an "intelligent jail."

In the current political and fiscal climate, jails and other criminal justice institutions can no longer be managed by merely reacting to crises or making "off the cuff" decisions regarding their operations, planning, or budgeting. A more proactive approach involves careful monitoring, accurate projections, and policy decisions that are informed by accurate data. The jail's MIS database can be a critically important resource and should be optimized when making decisions at all levels of the agency—from routine inmate processing to planning and monitoring the agency's performance as a whole.

Computer technology has advanced rapidly in the past several years. Vastly improved hardware and software applications offer faster and more effective ways of collecting, storing, analyzing, and presenting data. Being able to configure, code, and enter data into an integrated database and having access to easier and more adaptable reporting tools have led to more timely analysis, organization, and transmission of critical data, in the appropriate formats, to all jail staff and other stakeholders. Reports can be designed to present data tailored to each jail manager's information needs. Criminal justice decisionmakers can promote implementation of effective software solutions that are specifically designed for use in correctional facilities. Jail stakeholders need to better understand their jail's overall performance, the characteristics of its offender population, the trends, and the key performance outcomes. Demands from politicians and the public for more efficient use of their tax dollars, and the need to achieve better outcomes with fewer resources, means that jail managers must become more proficient in using the available technology.

The first precondition for effective, data-driven management of jails is a well-designed MIS; the second precondition is the competence of its users. Criminal justice administrators, middle managers, and on-line processing staff must all become competent users of information services and technology. Training to develop the necessary skills must be available to staff. Customized management reports based on each manager's responsibilities help to improve decisionmaking across the system. Jail administrators can appreciate how strategically important the implementation of an effective MIS database is when measuring a jail's performance, trends, and future needs. A closer collaboration between the jail's IT staff and administrators who have become more "software savvy" will enhance their ability to effectively analyze and apply the vast amounts of data that are collected and stored in the jail's databases.

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CHAPTER 1

WHY DO JAILS NEED TO BECOME INTELLIGENT?

Introduction

It is clear that virtually all criminal justice organizations, including jails, are driven by information. From initial intake to final release, virtually all key decisions are largely driven by the availability, quality, and careful analysis of data to support the variety of decisions made by jail administrators and personnel. Jails should consider themselves as information-processing organizations and active users of information technologies.

A precondition of effective management support in the jail system is having access to accurate, high-quality data that can be presented in the appropriate formats. For most jails, this requires a jail management information system (MIS) that is adequate to support all routine inmate-processing activities. Even when a jail has an adequate MIS, we often see inadequacies in the design of performance measures and inmate-monitoring indexes and, more generally, in quantitative analyses that make use of this information.

Jail managers should understand the strategic importance of using an MIS to measure a jail's performance, particularly in today's fiscal environment. With the increasing focus on cost efficiency and avoidance of wasteful spending, local criminal justice systems, and their jails, must adopt MISs that are based on data-driven decisions and policies and that can be used to measure performance-based outcomes.

Influence, or power, in the jail context, is the capacity to mobilize the organization's energy, resources, information, and staff to support particular goals and outcomes. Most jail managers are aware of the link between knowledge and influence. Leadership influence grows to the extent that the particular leader has both the access to data and the skill to transform it into usable and defensible knowledge. Any exercise of power assumes some desired objective or policy, such as affecting staff and inmates' behavior or attitudes; marshaling needed resources; increasing the access to information; changing work assignments, processes, or procedures; and proposing specific performance improvements.

Knowledge Is Power

The power of knowledge—and its foundation in data—is increasingly central to jails' organizational processes that involve leadership, planning, directing, and controlling behavior as well achieving better performance outcomes. In witnessing such interactions, jail staff at all levels often observe the exercise of power (legitimate or otherwise) and become aware of its importance for both personal and organizational success. Those jail managers, administrators, and line staff with more data access

and greater skill in analyzing and synthesizing data will gain influence, regardless of their position in the bureaucracy, whereas others with less skill will lose their influence.

When managers' influence stems from superior analytic skills and access to the pertinent data, they will typically gather more influence and control. The power of knowledge enhances that manager's ability to build consensus, set goals, propose actions, and direct the organization's energies toward the selected goals. Knowledge thus can be used to organize and provide a rationale for most jail procedural and policy decisions, subsequent implementation efforts, and changes in the behavior or attitudes of staff. Senior managers may become less powerful over time as information technology and data-analytic tools evolve. In some instances, senior staff in powerful positions in the jail bureaucracy may become dependent on lower-level employees who have more direct access to the relevant data and have the skills to organize, analyze, and provide the information for the senior manager. To the degree that senior managers lack the necessary skills or are averse to learning them, their power base will erode.

Politics, Power, and Jail Data

Knowledge, and the data supporting it, becomes particularly important in decisionmaking situations in which stakeholders must make highly contested choices, often involving a change in policy orientation or resource allocation. Stakeholders exercise their power in these situations to justify the desired results or to ensure that their preferred policy options are accepted and will lead to these results. In most jails, a constant dynamic among senior managers and department heads involves a competition for resources, such as having access to information or a status position, or having priority for specific programs or procedures. Influence and power in these situations is increasingly based on claims of knowledge and are key factors when resolving issues. Thus, power and influence flow to those managers or departments in the jail system who are best able to establish and control the information resources, particularly in jail environments where data-driven decisionmaking (DDDM) is implemented as a strategy.

Becoming an Information-Driven Jail: What Is DDDM in the Jail Context?

Data-driven decisionmaking in the corrections field rests on practices—for example, quality control by qualified management, organizational learning, and continuous improvement—that originated mainly in industry and are designed to support both decisionmaking and planning for the future. The goal is organizational improvement by the systematic collection of the types of data that broadly reflect the functions of the organization as a whole as well as those of specific departments. DDDM has several main steps, outlined below.

Step 1: Collect the Appropriate Data

It is critical to realize that the types of data collected will vary across different units or departments of a jail and across any particular functional unit (e.g., security, treatment, programming, staff resources).

Step 2: Make Sense of the Data

In this step, raw data are turned into policy-relevant information or actionable knowledge. Raw data must be analyzed and interpreted to clarify jail processes and to formulate theories to explain the data. Analysis of the raw data can reveal meaningful trends and provide insights that lead to critical information with which planners and managers can compare the merits of different solutions. Two resource issues are critical:

1. **Data quality.** The first critical issue for many jails is the quality of their data. The accuracy and accessibility of data will vary across jails. Some jails have excellent and well-managed data collection processes; other jails may not value data collection, may overwork staff, or may be more casual about the data collection and verification functions.
2. **Analytical capacity and skills.** This second task—making sense of raw data and transforming it into useful knowledge—requires some technical skills and training.

Step 3: Apply This Knowledge to Jail Decisions

Decisionmakers must rely on pertinent data at their disposal, and on their judgment and background knowledge of the jail, to determine what action(s) to take to resolve specific issues in their jails.

Not every jail is successful in transforming its decisionmaking culture into that of a smart, information-driven jail. Several key resources and cultural changes are necessary before this can happen, the most important of which are listed below.

Leadership and Motivation

Managers serve as role models for their staff when they adopt behavior and attitudes that support and promote the use of data collection and analysis to drive and bolster their policy decisions and to monitor work performance. Managers should also expect data-driven decisions from other levels of the jail system as new IT resources and enhanced capacities for the collection and analysis of data are introduced and implemented.

The Politics of Leadership

Jail administrators need to cultivate or improve their political skills in several major areas where issues typically arise when policies or practices need to change.

1. **Resistance to change.** Any major technological shifts that require new practices or skills or that produce shifts in power or control in management may meet resistance at some or all staffing levels.
2. **Interagency information sharing.** Informational silos, firewalls, and other obstacles to information sharing have always plagued jail operations. Jail managers must be skilled at coordinating activities and processes throughout their complex criminal justice systems and be capable of engaging meaningfully in information-sharing agreements with courts, law enforcement, state prisons, and probation departments.

3. **Resource acquisition for DDDM.** Successful IT functions in a complex system are based in having a strong, multifaceted information infrastructure, a well-designed MIS, adequate staffing, and the financial resources to support them. Managers must have the vision, understanding, and political skills to successfully acquire these resources.
4. **Support for a cultural shift.** Not all jails successfully achieve the cultural shift when they convert to using their database information to drive the decisionmaking process. Top managers must lead the way by consistently emphasizing the value of data, implementing quality control procedures, and setting an example for other managers across the jail system. The new culture must value the importance of data collection and analysis and its application to decisionmaking. Managers must value, give priority, and support to their staff's creative problem solving and data management expertise. Staff must also learn to appreciate the value of data as the basis for informed decisions at all levels.
5. **Support for data sharing and using communication channels.** Senior administrators must support the sharing of information across communication channels within their jail and with external agencies. Jail staff across departments must make every effort to share relevant criminal histories, classifications, risk/needs assessments, and demographic data with other agencies that need this critical data for their own decisionmaking processes. Relevant performance-based data should be available to staff at all levels of the jail system. It is particularly critical to share data that are related to the key goals of the particular jail (e.g., inmate safety, staff safety, security breakdowns, efficiency).
6. **Use of data to drive planning and policy decisions.** Senior administrators and planners need to be receptive to using data analysis as the basis for policy decisions and support their staffs in the use of tools such as analytic forecasting to track jail trends and projections. More broadly, embracing a culture of data-driven decisionmaking is a prerequisite for criminal justice jurisdictions if they are to create more intelligent jail systems with faster, more adaptable data-analytic tools tailored to their own systems' information needs. Collection and analysis of these data will inform all levels of correctional management decisionmaking, including the monitoring of performance-based goals and outcomes, and planning for the future.

Summary

This book focuses on the design and use of management information systems that are essential to *Running an Intelligent Jail*. In this context, a management information system should provide the information necessary to manage the jail effectively. An MIS may be regarded as a component of the jail's internal quality control procedures that support the management in understanding and solving the problems inherent in running a jail. However, MISs are distinct from other IT systems—they can also analyze other information sources, such as visual and verbal data, that are often applicable to operations within the jail. Management information systems can store, retrieve, and analyze vast amounts of data that are specific to their institutions and in an accessible format that informs decisionmaking at all levels of the corrections community.

CHAPTER 2

MEASUREMENT OF JAIL PERFORMANCE AND KEY CORRECTIONAL POLICIES

Introduction

Public concern about the efficiency and cost-effectiveness of the jail and other local criminal justice agencies; the increasing legislative demands for data-driven, informed decisionmaking; and emerging calls for performance-driven outcomes should prompt decisionmakers to demand rapid improvements in the implementation of well-designed MIS systems and the more effective use of the information collected and stored by these systems.

New policy developments and efficient, cost-effective operations must be linked to performance-based outcomes and goals; such goals should be clear and unambiguous. Monitoring of performance and outcomes provides critical input for policy discussions, planning, budgeting, and the forecasting of future trends and resource needs. The courts or other legislative bodies may also impose legal standards on jails that are based partly on whether they are achieving their goals and projections based on their current outcomes and trends. A well-designed, implemented, and fully utilized MIS will provide the necessary data and documentation to inform this process.

Performance Criteria for a Jail

In today's correctional and budgetary environment, the public demands increased performance, accountability, and reduced costs from correctional agencies. A term that may best describe this initiative is *performance-oriented government*. The goal of performance-oriented government is to spend scarce resources on services and practices that provide the best results in the most cost-effective way. This cannot be done simply by cutting staff or services but only by implementing systems that increase accountability while focusing on quality, cost savings, and outcomes. Within the jail, the most effective means to achieve this is with a data-driven, informed policy and planning process, implementation and effective use of a well-designed MIS, along with more sophisticated data-collection techniques. With these data, planners and elected officials can better understand the jail's operations and make the adjustments necessary to meet funding constraints and become a more efficient, cost-effective, outcomes-based organization. The establishment of measurable, outcome-based standards also allows for the comparison of performance measures across agencies.

Specifying the entire range of data needed to support informed performance- and outcomes-based planning and policy development is difficult. Answering the insightful questions raised by jail managers responsible for making policy decisions is a sensible place to start and cannot be overestimated as a source of insights. Policymakers should obtain perspectives on past trends, present levels, and likely future trends of any practice or problem in the jail and the local criminal justice system. It is also important to distinguish between causes, correlates, and consequences of any jail procedure, problem,

or trend. Data collection and having an MIS support this process for each stakeholder in the system. The following section describes several of the performance criteria of a jail and the various goals it should establish.

Overall/Global Jail Performance Criteria

Staff and inmate safety. A central role of the jail is to provide valid identification of offenders. This identification relies on carefully collected, individual inmate demographics, and background and risk factor data (e.g., criminal history, past convictions, arrests, past behavior problems). Both inmate and staff safety rely on valid identification, classification, separation, and supervision of inmates. If the jail fails to obtain the appropriate background data, the risk of false-negative classification errors is increased and the truly dangerous offender is seen as a low risk. The courts have also ruled that classification is a primary guarantor of inmates' right to be reasonably protected from violent assault or the fear of violence—thus reducing the risk of litigation against the jail.

Public safety. A second role of the jail is to provide public safety. This requires effective classification, housing, supervision, and inmate management strategies that reduce the risk of escapes, walkaways from work assignments, new crimes committed while on work release, recidivism, and erroneous community placement. A new generation of data-driven offender risk assessment tools has significantly increased the ability of jails, courts, and probation and parole officers to determine an offender's risk of recidivism or flight after being placed in the community pre- or post-sentence.

Protection against liability and protection of inmates' rights. A third role of the jail is to minimize liability and avoid costly lawsuits and monetary awards. In addition to providing a safe environment, jails must provide a quality of life that ensures access to services and meets the needs of inmates' medical, dental, mental health, nutrition, and clothing needs. Often, the inadequacy of the physical plant is a confounding factor in minimizing litigation. To monitor performance criteria in these circumstances, it is important to collect data that are specific to the limitations of the facility and could result in litigation, such as inadequate space (crowding, poor cell design), poorly maintained or damaged locks, doors, surveillance cameras, inadequate lighting, lack of access to recreation, and so on. The jail may have good policies and procedures in place for inmate safety and access to services, but the limitations of the facility may hinder the access and thus increase the risk of litigation.

Rehabilitation programs and work assignments. Successful jails recognize that an inmate's incarceration is an opportunity to address that person's criminogenic risk factors (that is, those factors that produce or tend to produce crime or criminality). These include substance abuse, criminal thinking, and lack of employment, education, or housing.

As a result, inmates' access to rehabilitation programs is gaining importance in the field. As reentry initiatives are implemented and begin to take hold in local corrections plans, inmate programs are often initiated in the jail and then continued once inmates are released and reenter the community. This practice is an important component of good correctional policy and may reduce recidivism and save taxpayer dollars. Access to work assignments of lower-risk inmates also supports effective correctional policy—it keeps inmates busy, permits extra time off their sentence for good behavior, and gives participants some additional work experience.

Recruitment and retention of staff. High staff turnover can be an indication of low staff morale. Competent and motivated staff creates a more professional, responsive environment and helps ensure a fair, equitable, and efficient jail. Identification of staff training needs and the provision of that training are critical. When jails face fiscal constraints and budget cuts, the first responses are often hiring freezes and staff layoffs. Reduction of staff levels, however, can cost local governments more money in increased lawsuits and may jeopardize public safety. It is important that jail administrators are armed with the information necessary to defend their need for these staff positions by monitoring staff efficiency indexes (e.g., job responsibilities, workloads, sick time, personal leave, administrative leave, overtime).

Unit-Specific Performance Criteria

Each unit of the jail has its own information needs. To understand what monitoring indexes are needed by the unit and its manager, ask the question, "For what functions/procedures is the unit responsible?" Follow this question with another, "What performance objectives are we trying to achieve?"

Each unit needs to stay informed of its workload and work quality indexes, including error rates and late processing, aggregate breakdowns of work performed, pertinent characteristics of the inmate population, staffing levels, and so on. By collecting, analyzing, and disseminating this information to unit workers and other stakeholders, each unit can be managed by using a data-informed process, analyzing the data, and making adjustments as necessary.

Data Stakeholders

High-Level Administrators

Administrators who run today's jails must be much more knowledgeable about the use of data to manage, plan, and budget their operations. The industry has seen a change in the backgrounds of jail administrators from traditional law enforcement to more public administration training and experience, which has led to a greater appreciation and skill sets that are more familiar with data collection and analysis to inform the decisionmaking. Administrators who have implemented MISs in their jails are starting to appreciate and catch up with these technologies. High-level administrators need to accomplish the following goals when collecting and analyzing data:

- Meet global performance requirements (monitor trends and impacts).
- Monitor workload demands and trends.
- Monitor work done and services provided.
- Identify gaps between workload demands and the capacity to meet them.
- Budget for and acquire the needed resources.

The jail intake unit needs to know:

- Its inmate intake volume.
- Number of admissions and their types.
- Admission reasons.
- Inmate demographics.
- Transportation requirements.
- Intake incidents.

Planners and Policy Analysts

Specifying the range of data that are needed to inform policy decisions in jails, and criminal justice systems in general, can be difficult. Policy decisionmakers are responsible for asking intelligent questions so that the appropriate data are collected to address each jail's issues; their ability to bring their insights to this process cannot be overestimated. Policymakers provide perspectives on past development, present levels, and likely future trends of problems such as inmate population growth, increasing staff workloads, and decreasing resources. Historical trends (e.g., levels of jail crowding over the past 3–5 years) can be useful in clarifying how problems emerge and develop over time. Projections of inmate population growth, and how jails plan to use their resources in the future, provide some lead time during which preventive measures and solutions can be implemented. During this stage of planning, it is important to distinguish between causes, correlates, and consequences of problems in any particular jail system.

Additional questions are becoming more relevant for jails to ask, including:

- How are we currently spending our money and resources?
- How are the jail's resources being used?
- What functions, policies, and programs are still being supported?
- What resources do we need to acquire to prepare for the future?
- In the context of the local criminal justice system—including the jail—where should our local criminal justice dollars be spent?

Middle Managers

A major challenge for middle managers (e.g. sergeants, shift supervisors, lieutenants) is to develop monitoring indexes that are sufficiently unthreatening and nonintrusive to monitor staff activities, workflow, and inmate management decisions at the individual unit or shift level of a jail's operations. These data-driven monitoring indexes should be used to assess whether line-level operational goals and compliance with policies and procedures are being achieved. Staff performance and compliance monitoring should routinely be assessed and fed back to line staff through shift or unit meetings and reports, graphs, or other media formats.

This process of "managing by the numbers" requires objective measurement of line- and unit-level performance indicators that reflect the various aspects of performance and goal achievement. These indicators must be accurately collected and stored in the jail's MIS and be accessible by using ad hoc reporting tools, and canned reports and by having data-exporting capabilities through the use of other statistical and reporting software. If such monitoring indexes are not identified and routinely collected (or if they remain unanalyzed), managers can only guess at the degree to which the desired policy and performance goals are being achieved at all levels of the jail system.

Line Staff

Line staff are critical to an effective jail MIS because they are the primary collectors and recorders of the jail system's data. Often, this is a job requirement without any emphasis, planning, or training in

how to maximize use of the data collected. Although simple rosters and reports are commonly used, it is less common to find jails in which line staff are provided with the skills and access to data that are necessary for them to create ad hoc reports or to identify adequately the optimum information needs of the line staff. Line staff often do their work in a vacuum—they are aware of what is occurring in their unit but not what is occurring systemwide (e.g., workloads across units, compliance with policy and procedures, changes in offender characteristics, trends). Staff appreciate any information they can get about the inmate population they are managing as well as any changes in workloads, policy compliance, goals achievement, and performance measures. Providing line staff with this information promotes professionalism and commitment to the goals and achievements of the jail.

Interagency Stakeholders (from the Local System Perspective)

Jails are often seen as the hub of local criminal justice systems because they play a critical role in the promotion of public safety and offer an important resource to law enforcement, the courts, and community corrections. All of these stakeholders should be concerned about how the jail's limited resources are used. It is now widely recognized that, primarily, policy factors dictate the size and makeup (utilization) of a jail's population and can be affected by several factors, including:

- Crime rates.
- Arrest rates.
- Policies on court pre-trials (bail bonds) and sentencing.
- Policies on arrests by law enforcement.
- Policies on early releases and less time served for good behavior.
- Community corrections policies and alternatives to incarceration.
- Prosecutors' charging policies.
- Department of Corrections state transfer policies and practices.
- Detention policies in local immigration and customs enforcement.
- Technical violation policies on probation and parole.
- Court- and inmate-processing delays.
- Media and public perceptions.
- State and local politics and legislation.

To understand how the resources of the local jail are being used, members of the local criminal justice system must understand the policies and practices regarding the factors listed above. As can readily be seen, numerous critical stakeholders affect jail operations. It is becoming common for counties to establish a local criminal justice advisory committee of key stakeholders and county leaders to better

Information sharing with line staff may include:

- Presenting the most critical indexes of performance in charts or graphs.
- Making frequent announcements of pertinent information to all staff.
- Providing relevant information in online data dashboards.



understand jail operations and develop policies or plans to make the best use of limited jail resources. The work of these advisory groups must be guided by an informed, data-driven process.¹

Linkage with Courts

A well-designed and implemented jail MIS system gives jail administrators and others the opportunities to coordinate and align their activities with those of the courts by identifying the unsentenced/pre-trial population of the jail by the number of days incarcerated. Such reports can expedite the arraignment, pre-trial release, adjudication, and community corrections process. As a second example, the prosecutor and the courts can use these jail reports, along with other MIS system data links, to “fast-track” felons who are most likely to receive prison sentences because of their current offense or criminal histories.

To implement such data-driven decisionmaking processes in jail systems, criminal justice practitioners, treatment providers, county commissioners, planners, and other key players must collaborate. This collaboration has several potential benefits, including:

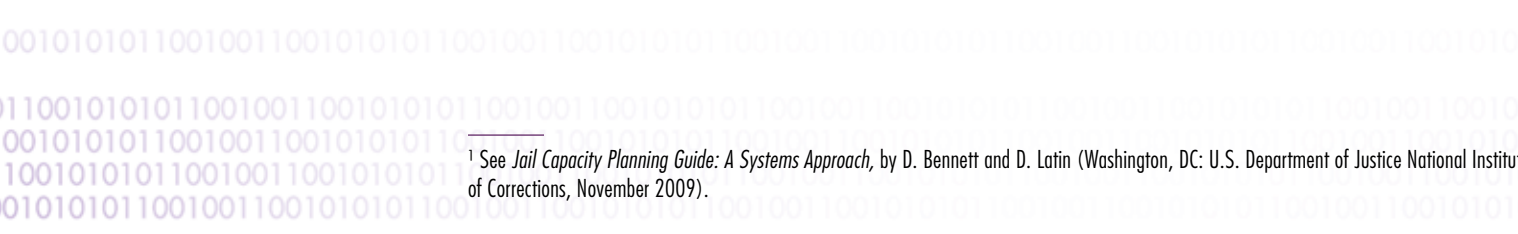
- Coordination of law enforcement, correctional, and treatment policies across agencies.
- Efficient and early release of targeted offenders from jail into community corrections programs.
- Reinforcement of a coordinated system of behavior incentives for offenders.
- Improved coordination of sanctions and treatment programs with the assessed risks and needs of the offender population.

Summary

Using well-designed information systems can inform all stakeholders in the local criminal justice system as well as promoting the most efficient, cost-effective use of the jail’s limited resources and alleviating jail crowding. Data-driven policies and practices should support the development of an integrated system of informed case processing, sentencing, and community corrections so that members of the various offender subpopulations who enter the local criminal justice system are matched with the most appropriate treatments, facilities, and agencies. Well-designed information systems, and the data-driven policies and practices that are derived from them, benefit not only staff who work in the criminal justice system but also the offenders and their communities.

Courts can use data collected in jail MIS systems to inform judges of inmates who might qualify for early release based on their length of stay, the charges, and their behavior history while in jail.

¹ See *Jail Capacity Planning Guide: A Systems Approach*, by D. Bennett and D. Latin (Washington, DC: U.S. Department of Justice National Institute of Corrections, November 2009).



CHAPTER 3

DATA THAT MOST JAILS ARE REQUIRED TO COLLECT

Introduction

Identifying and planning for the ongoing information needs of the agency are critical. The various information stakeholders referred to in chapter 2 have both short- and long-term information needs. Jail MIS systems must have the capability to organize and provide the relevant data to support both the short- and long-term needs of their agencies. This typically begins with a consensus on the data-driven objectives of the agency.

Short- and Long-Term Goals for Data-Driven Information and Outcomes

Short-term data needs tend to focus on counts and statistical tabulations, whereas long-term data needs may focus more on trend charts, comparisons of aggregate data, and projections from a baseline into the future. The jail's stakeholders must discover the data needs, performance objectives, and outcomes they are required to monitor over the short and long term. The stakeholders must ask general questions that will identify any specific data requirements, such as the following:

- How efficient and effective are we?
- What performance objectives are we trying to achieve?
- What were the actual outcomes or impacts of our efforts?
- What are the trends of the jail and its inmate population?
- What are our objectives/needs for the future?

A better understanding of how data are currently used or ignored in the tracking of routine inmate processing, day-to-day operations, planning, and policy decisions by jail administrators and other stakeholders can help them to develop short- and long-term goals and strategies that are data-driven. Some questions that stakeholders can ask include the following:

- What data (automated or manual) are entering the jail?
- What kinds of data are entered into our current MIS systems or collected by other means (manual or automated), and are these data in a useable format?
- What data are accessible from other external information systems?
- What data are leaving the jail (in reports and via data exports to other MIS systems)?

Consensus among the stakeholders is important in developing a sustainable vision of the future that is data-driven. Having a consensus on the short- and long-term information needs of the jail also reinforces use of the data by the various stakeholders over time.

The indexes described in this chapter are all candidates for time-based sequential monitoring in jails. Regularly scheduled reports that provide timelines, trends, and emerging problems in the jail will assist jail managers and policymakers in making intelligent decisions.

A critical task for any jail's IT and MIS systems is to select data elements to measure key correctional policies and organizational operations that the managers or policymakers wish to monitor. Appendix A consists of a spreadsheet presenting the data elements often included in MIS systems in jails and other correctional agencies. These elements are correlated with the questions to ask, and the management needs to be identified, by determining the goals and objectives of the agency.

What Drives a System's Information Needs?

The many information needs of jails and local criminal justice systems can be categorized into four broad areas. In appendix A are examples of both short- and long-term information needs and data elements based on questions asked of correctional managers.

Level 1: Information on Routine Inmate Tracking

This category of information focuses on the day-to-day processing and movements of individual inmates within the jail. This information is most useful to the line staff who do the routine maintenance and supervision of inmates; it serves as the basis for all other inmate-related data that are required to be collected in a correctional facility. Level 1 data are the initiating data when an inmate enters the jail system. These data must be readily available and accurate and will be the primary data on which all other information is based. The line staff learn the identities and characteristics of the inmates and of the inmate population as a whole.

Level 2: Information on Daily Operations in Long-Term Inmate Facilities

This category of data builds on Level 1 inmate data and addresses correctional operations for those inmates who are incarcerated for the long term. Although related to Level 1 data, Level 2 data generally require wider information gathering within the correctional facility. Housing and operational issues, along with inmate treatment programs and court information, are included in Level 2 data. Too often, data on the inmate population of a correctional facility are simply aggregated into one broad, misleading, and uninformative summary of the total population. However, data on the facility's inmate subpopulations and their distinguishing characteristics are now used routinely. Managers invariably benefit from a deeper understanding and a more accurate picture of the diversity of the inmate populations in their jails. Analyses of these data, maintained over time, may identify changes in the demographics of their inmate populations, data that may be most useful to the mid-level managers, shift supervisors, and jail administrators. Frequently, Level 2 data are used only by jail personnel and are generally not available to the public.

Level 3: Information on Day-to-Day Operations Decisionmaking

This category of information focuses on the day-to-day operations of the facility, policy compliance, efficiencies, staff and resource utilization, and system alerts. The questions asked and data collected may not always come from the traditional JMS systems that store inmate data. Data may be stored manually or reside in separate systems but are very dependent on Level 1 and Level 2 data and trends. Many corrections facilities find it challenging to relate data at Level 3 to data at Levels 1 and 2, but it is possible, and effective, if accomplished. Examples of data collection for this category include:

- Staffing management systems.
- Payroll systems.
- Financial systems.
- Inventory systems.
- Maintenance systems.

If the areas responsible for these data are not automated, the data should still be collected even if manual systems are to be used. The collected data impacts decisionmaking for all corrections facilities. This level of information focuses on queries and information to support a multiplicity of planning, policy analysis, forecasting, and budgeting questions. Typically, information analyses at this level are faced by the jail administrators and policymakers. Such data allow administrators to raise queries if they see major changes in inmate populations or offender categories for those entering or being released from the jail. Their queries about these trends guide the type of followup data analyses that are conducted.

Level 4: Information on Public Access and Services

These data elements monitor the required services to the public and their access to basic inmate information. This information can generally be gleaned from data collected at Levels 1–3 but may need to be presented differently. These data may not contain information that is relevant to MIS data collection but instead involve the management of information of particular interest to the public and can include relevant corrections statistics. This content needs to be frequently monitored to ensure its accuracy for public consumption.

Summary

This chapter addresses the questions to be asked and the data to be collected in the correctional setting. Information in the form of data can be grouped on the basis of how much detail is required for accurate reporting and presentation. Those stakeholders who are new to data collection and analysis can begin to collect basic inmate information as a first step in the process if the jail does not currently use an automated jail information system. Not all systems currently in use will ask the right questions or will be able to collect data that provide the right answers, such as those outlined in appendix A. However, this information does provide the reader with a broad overview of the capabilities of management information systems in the jail setting.

CHAPTER 4

DATA USES IN POLICY ANALYSIS AND ORGANIZATIONAL MANAGEMENT

Introduction

This chapter addresses the use of data for problem solving in policy analysis in a jail context. A well-established framework for policy analysis is presented as a series of steps or stages that characterize virtually all jail policy problems. An additional theme of this chapter is the rising importance of data and data-analytic procedures for jails in their role as information-based organizations. From initial intake to final release, virtually all key decisions are driven by the availability, quality, and careful analysis of data to support the variety of sequential decisions made by jail personnel.

Data-Driven Decisionmaking

DDDM in corrections rests on practices (e.g., quality control by qualified management, organizational learning, and continuous improvement) that have originated mainly in industry and are designed to support both decisionmaking and planning at all levels of the organization. The goal of all of these approaches is organizational improvement by the systematic collection and use of categories of data that broadly reflect the functions of the organization at large as well as specific departments. DDDM has several main steps:

Step 1: Collect the Appropriate Data

It is critical to realize that the types of data collected will vary across different units or departments of a jail and for the specific functional unit under consideration (e.g., security, treatment and programming, staff resources).

Common data categories include:

- Input data, such as equipment and costs of the labor, facility, and programs.
- Outputs or work done, such as treatments provided, classifications completed, number of supervision tasks completed, number of admissions completed, and number of criminal history searches.
- Results or outcomes data such as escape rates, disciplinary rates, rates of inmate injuries, and staff morale levels.
- Work quality, such as error rates in data collection, percentage of tasks completed on time, numbers of inmates mis-housed in wrong custody levels, and rates of compliance with various correctional standards.

Step 2: Make Sense of the Data

In this step, raw data are turned into policy-relevant information or actionable knowledge. Raw data must be analyzed and interpreted to clarify jail processes and help to explain the data. The analysis process transforms raw data into meaningful trends and insights that yield actionable knowledge so that planners and managers can compare the merits of different solutions. Two resource issues are critical:

- **Data quality.** The first critical issue for many jails is the quality of their data. The accuracy and accessibility of the data will vary across jails.
- **Analytical capacity and skills.** This second task—making sense of raw data and transforming it into useful knowledge—requires some technical skills and training.

Step 3: Apply This Knowledge to Jail Decisions

Decisionmakers must rely on actionable knowledge, combined with their judgment and their knowledge of the jail, to select actions to resolve a specific problem. These actions may include:

- Revising the jail's goals.
- Assessing inmates' needs when planning programs.
- Designing responses to issues of noncompliance.
- Evaluating the effectiveness of various programs.
- Reallocating resources.

Two broad themes reflect how data are used at this stage:

1. Data analysis is used to inform, identify, or clarify critical jail issues or problems. Actions are formulated and taken.
2. Data analysis is used to justify some specific action, policy, or procedural change. These actions may lead to new policy goals, and performance or efficiency objectives based on these statistics.

Most jails implicitly reflect the importance of data in the volume of staff resources that are engaged in data collection tasks (intake and booking, records staff, classification staff). However, a critical failure in some jails is the understaffing and work overload of these key departments, which may result in poor quality or incomplete data gathering. This tendency to overload the staff who perform these functions may sabotage DDDM and encourage resistance to the effective use of IT and data-analytic procedures. In such cases, any subsequent policy analysis can be undermined by the lack of adequate data.

Both upper level administrators and middle managers must understand DDDM and achieve a high degree of competence in its implementation. Training, mentoring, and external support in running an information-based jail are often required, for example, developing the capacity to analyze data, extracting relevant information from an MIS database, and interpreting the data in tables and graphs.

DDDM and Changes in Business Practices

Introducing DDDM into the jail system can prompt many organizational and cultural changes—which can be a prime opportunity for upgrading the jail’s processes of data gathering, storage and analysis, improving data quality, and for developing coordination and cooperation across agencies. All of these are required for successful implementation of an effective MIS. The following changes have been particularly noted in jails:

- **Impact on decisionmaking at line levels.** A difficult adjustment for many jail staff, particularly classification and security staff, involves the shift to data-driven decisionmaking.
- **Impact on decisionmaking at policy and managerial levels.** Data will become more valuable as it is analyzed, implemented, and presented to staff in support of various policy or planning decisions. The adage “knowledge is power” is best modeled by those managers who can most accurately and persuasively organize background data to support specific policy positions.
- **Impact of performance monitoring on work style and morale.** Having performance and results monitoring available for use by jail managers may dramatically change how line staff conduct their work;² it may also create morale problems if staff are coerced into using it.³ Systems for monitoring data and performance can also be used to document and describe management performance, enhancing managers’ skills and providing better feedback on their decisions.
- **Impact on competencies, data literacy, and staff skills.** In a data-driven jail system, higher levels of data literacy are required. Data literacy implies that jail staff (from line staff to administrators) understand basics of how jail data and an MIS system can be used to monitor day-to-day jail functions, assess performance and outcomes, and detect and analyze emerging or preexisting quality control issues and errors.
- **Impact of highly skilled staff and higher technical competencies.** Traditionally, jails have not required the skills to handle MIS systems and data collection and analysis. Jails using MIS data to inform their decisions, in contrast, will require new, diverse, and continuously improving analytical skills. Emerging evidence-based practices, theory-driven assessments, reentry programs, and theory-guided treatment plans will also require more substantial training for the staff and management of certain departments (e.g., treatment staff and treatment directors).

The Seven Stages of Policy Decisionmaking

Although the description of organizational change and the politics of information gathering hinted at ways in which jail data can be applied when addressing a jail’s policy issues, it does not provide a roadmap of specific steps to more effective management and policy analysis in jails. However, the next sections describe the seven stages of a well-established model of policy decisionmaking that is driven by data (see exhibit 4.1) and that can be applied to solving or improving virtually any policy issue.

² Walton, Richard E. 1989. *Up and Running: Integrating Information Technology and the Organization* (Boston: Harvard Business School Press).

³ Schoech, Dick. 1982. *Computer Use in Human Services: A Guide to Information Management* (New York: Human Sciences Press).

EXHIBIT 4.1 SEVEN STAGES OF DATA-DRIVEN POLICY PROBLEM SOLVING



- Stage 1: Monitor routine data and detect problems early.
- Stage 2: Analyze and describe the problem.
- Stage 3: Understand and frame the problem.
- Stage 4: Design solutions that address the problem.
- Stage 5: Evaluate solutions and select one.
- Stage 6: Implement the solution.
- Stage 7: Monitor the impact and outcomes of the new policy or program (repeats Stage 1).

Many criminal justice planners and administrators are familiar with these stages, and this policy problem-solving cycle (often with slightly different nomenclature) is included in many college courses in policy analysis. The following approach applies these seven steps to the particular problems of managing a jail when using a data-driven approach.

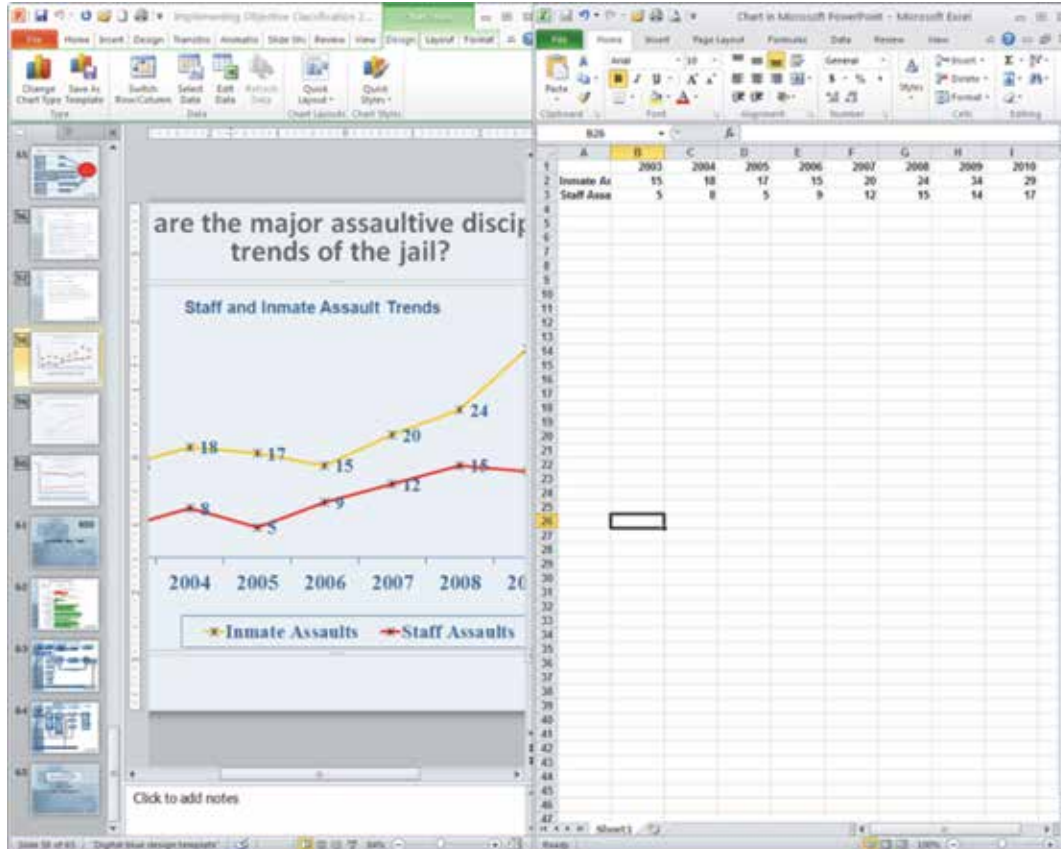
Stage 1: Monitor Routine Data and Detect Problems Early

Monitoring a range of key indicators is the first key strategy for tracking the overall performance and work challenges of a jail as well as detecting potential or emerging problems and trends.

The MIS information infrastructure of a smart jail includes the careful, systematic monitoring of the jail's vital statistics over time—for the jail as a whole and for each functional area or department (e.g., booking/intake, security, treatment, and medical). Many of these statistics (e.g., admissions) are monitored in both aggregated and disaggregated form (by gender, type of crime, major offender needs). Thus, jail managers are able to obtain and review routine data on major goals of the jail, policy achievements, and functional status. If any indicator deviates from the correctional goals of the facility, the manager has early warning of emerging problems, can locate organizational trouble spots, and has time to plan appropriate actions.

Data monitoring is critical for identifying problems and placing them on the policy/management agenda. In the absence of clear monitoring data, jail managers may be unaware of or may deny the scope and implications of emerging problems. The availability of critical data (e.g., increasing disciplinary problems) will often determine whether a problem is taken seriously, casually ignored, or placed on the policy agenda. Monitoring data and trend forecasts can powerfully counteract the tendency of some jail managers to avoid problems until they reach critical proportions. When confronted with hard data, managers will have fewer opportunities to avoid emerging problems.

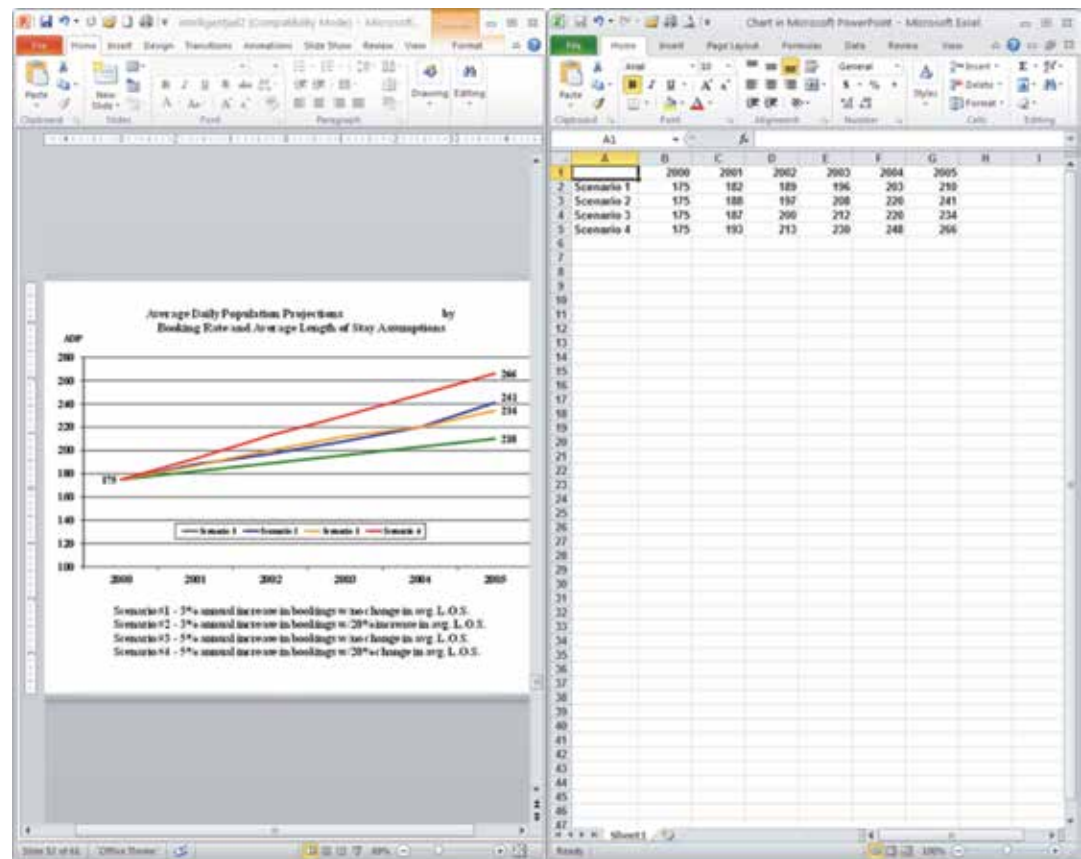
EXHIBIT 4.2 ASSAULT TRENDS



Stage 2: Analyze and Describe the Problem

Examples of the monitoring indexes are shown in exhibits 4.2 and 4.3. Although useful for problem recognition, these indexes are generally insufficient to produce the data needed to reveal the scope of the problem. Thus, in the second stage of policy development, managers typically ask for additional data to clarify the emerging problem or issue, gain insight on the extent of the problem, and avoid premature decisions. A reliance on inadequate data when resolving policy issues may lead to wrong conclusions and inappropriate solutions. Thus, several tasks should occur in this second phase.

EXHIBIT 4.3 JAIL POPULATION FORECASTS



Explore hunches and generate new questions. Jail managers must explore hunches, ask questions, and request additional data to better understand the issues brought up in the first and second stages. These queries will determine what additional data still need to be collected from the offender samples and what additional data elements need to be included to conduct meaningful statistical analyses. It is counterproductive to start formal collection of new data without such preliminary queries.⁴ The goal is to identify the key factors that caused the problem.

Ensure that necessary data are available. Often, the required data are available in the jail MIS or in the databases of other criminal justice agencies, which typically contain a vast array of data elements.

⁴Elias, Gail. 2007. *How to Collect and Analyze Data: A Manual for Sheriffs and Jail Administrators*, 3d ed. (Aurora, CO: U.S. Department of Justice, National Institute of Corrections).

Access to the jail's MIS data is critical to solving most policy problems, so it is important to find out who controls the access. If the necessary data have not been collected, new data can be collected in the short term but may involve additional costs, work hours, or personnel.

Collect data that are aligned with the desired goals. Policymakers are responsible for generating intelligent questions based on past developments, the present situation, and likely future trends of any problem (e.g., jail population growth, contraband increases). Their role in aligning the data needs with the jail's goals cannot be overestimated.

Stage 3: Understand and Frame the Problem

The third stage of the policymaking process is developing an understanding of the problem. Generally, policymakers feel that they are on safer ground when they can answer "why" questions. Policymakers and administrators usually have their own hunches, preferences, and preconceived notions about the reasons for problems in policy. If the hunches and biases of policymakers are confirmed and a clear picture of the problem is presented, effective policy interventions can be formulated and justified. Policymakers and managers must accurately communicate their questions and hunches to the statistical experts so they can conduct the appropriate analyses, avoid biased interpretations, and provide useful answers.

Data-driven explanations provide rational justifications for policies and solutions: Policymakers are more effective when they can justify policy solutions that are logical and coherent, particularly if they are supported by the data and based on a validated model. This becomes critical when attempting to resolve highly contested issues (e.g., whether to build a larger jail or increase the diversion of prisoners to community-based programs). Conversely, advocates of a particular policy option (e.g., increasing pre-trial releases to reduce jail overcrowding) are less able to justify their policy solution if it is not linked to an explicit, testable model or hypothesis.

Stage 4: Design Solutions That Address the Problem

The fourth stage of the policymaking process—evaluating and comparing policy solutions—builds on the previous stages. The systematic use of data in evaluating and testing potential policy solutions can transform the policymaker's search from a trial-and-error approach to a focused evaluation of each proposed solution. Consider some common approaches that policymakers use to arrive at policy solutions:

Trial and error. Many criminal justice policymakers rely on hunches, untested biases, and a trial-and-error approach. In the case of jail overcrowding, a trial-and error solution might be to expand the jail's inmate capacity, which often backfires and, within a period of 18–24 months, is again overcrowded.

Data-driven model. A validated causal model of the problem is perhaps the best strategy to generate logical and well-designed policy solutions. Following are some of the reasons to use a data-driven model:

- Models can pinpoint more specific and testable cause-and-effect linkages that may not be obvious to decisionmakers. Models organize and simplify complex data so that policymakers can more easily visualize the problem and focus on clearer paths to a solution.

- A complex model of a criminal justice problem may suggest multiple interventions. Each option may include specific policy or program changes that may alleviate some causes of overcrowding (e.g., delays in inmate processing by prosecutors, or judicial decisions to divert low-risk offenders to other facilities).

Stage 5: Evaluate Solutions and Select One

Once policymakers generate possible solutions to a jail problem in their jails and are able to evaluate each proposed solution, they must decide which solution is best, even though several options may appear feasible. Often, certain stakeholders base their decisions on “soft” data or rely mainly on subjective impressions or political considerations, which may result in overlooking more effective solutions or choosing less effective solutions. This style of decisionmaking can incur great costs and impose long-term damage on the correctional system.

Before choosing a particular option, the jail policymaker should assess the relative efficiency and cost-benefit data of each policy solution (e.g., determining which inmate subpopulations to divert to other facilities to reduce overcrowding). Common approaches to such appraisals are as follows:

- **Impact and pilot study analysis.** This often entails a smaller scale pilot study to assess the likely impact of a new criminal justice policy or program on the total jail population. Small scale pilot studies can be conducted to assess the impact of a new policy or procedural change.
- **A cost-benefit analysis for each policy option.** Jail policy decisionmakers often compare cost-benefit ratios across policy options and then provide guidance on which solution has the best ratio of benefits to costs.

If there is insufficient time to study a policy problem systematically, policymaking fiascos can occur. Too often in corrections and jails, one hears the complaint that “last year’s solution has become the problem.” This emphasizes the fact that poorly considered policy decisions often produce unexpected side effects, poor long-term outcomes, and minimal commitment to a poorly conceived policy by those who are expected to implement it. Premature or thoughtless policies also are vulnerable to challenge from relevant data; thus, policy reversals are a frequent occurrence.

Stage 6. Implement the Solution

The next major stage is the implementation of the selected policy option. The application of data to jail policy does not end with the selection of the new policy or program. Effective policy implementation is critical; if done poorly, it can undermine the success of any new policy.

A jail administrator’s prime interests typically align with the formal design and intent of the policy and its effective implementation. The administrator requires regular feedback and progress reports to ensure that the new policy is implemented in a manner consistent with the policymaker’s intent.

Stage 7. Monitor the Impact and Outcomes of the New Policy or Program

The final phase of policy formulation occurs when the new policy is evaluated and results and outcomes are routinely monitored to gauge its success, which is essentially a return to Stage 1—routine

monitoring of key outcomes and performance indicators. Thus, the data in this stage focus on monitoring the impact of the new policy or procedure to ensure that it is meeting the intended policy goals.

Data also are collected to identify and assess any unanticipated effects of implementing a new program or policy. The policymaker will make decisions regarding this new program or policy on the basis of this evaluation (e.g., to expand, modify, or terminate it). Broad strategies to gather data for this final phase are as follows:

Process evaluations. In this approach, data is collected and analyzed to assess the degree of compliance with the new policies or procedures. Policymakers and administrators must be assured that their decisions, policies, and procedures have been properly implemented.

- *Monitoring compliance.* In some cases process evaluations can include data retrieved from a jail's MIS if the data can document actions, behaviors, and inmate profiles indicating whether the appropriate procedures are being followed and the goals are being met.
- *Imposing sanctions for noncompliance.* Valid documentation of compliance and noncompliance collected by the agency or system managers can be used in conjunction with a system of sanctions. This system imposes costs for noncompliance and rewards for compliance to the program staff involved in policy implementation.
- *Monitoring data on outputs and performance goals.* As noted in Stage 1, any new policy or program must be linked to clear, measurable goals. Ideally, performance goals and outputs are measurable and based on the data. Past achievement of goals, confirmation of trends, and forecasting procedures can provide a baseline for future goal-setting and assessment of outputs.

Impact studies. A second intensive approach is to conduct formal impact evaluation studies to collect data on outcomes and results of a new policy or program. As noted elsewhere, impact studies are typically not part of the routine monitoring of data elements in jails. Instead, they are specialized, experimental designs that are mounted occasionally to provide a detailed evaluation of the impact of a new program (e.g., new drug treatment, cognitive therapy, vocational training). Although impact studies are viewed as valuable sources of information, these data are typically not collected or entered into the jail's MIS.

Routine monitoring of outcomes and performance indicators. As in Stage 1, the manager or administrator will rely on routine monitoring of a large variety of performance indicators to assess the outcomes and impact of any policy or procedure changes. The key factor in determining the effectiveness of a jail's MIS is whether it contains an appropriate set of data elements to accurately monitor policy outcomes, performance goals, workload trends, demographics of the jail's population, work quality, and work output. Policymakers can then review these trends and results to assess the impact of their decisions on the jail's procedures and policies. As noted for Stage 1, the jail's MIS must provide performance data related to all major policy goals (e.g., inmate safety, inmate health, staff safety, program outcomes). If a required data element is not routinely collected, then an IT team, usually in conjunction with jail managers, must identify the missing data elements and include them as part of the routine data collection procedures of the jail.

Summary

This chapter focused on the uses of data at all stages of policy decisionmaking in the jail setting. Over the past decade, there has been a gradual improvement in the data collection, storage, retrieval, and the management information systems of most criminal justice agencies. There is rising public concern over the lack of efficiency and cost-effectiveness in criminal justice agencies as well as increasing legislative demands for data management and for outcome data. These concerns, coupled with rapid improvements in information technology and data analysis, should lead to significant improvements in the application of data to policy development and decisionmaking, based on analysis of the vast amounts of information stored in the management information systems of the nation’s criminal justice organizations.

CHAPTER 5

REQUIRED SKILLS FOR JAIL INFORMATION SYSTEMS

Introduction

Jails collect tremendous amounts of data about inmates, rosters and headcounts, inmate processing and housing, disciplinary matters, grievances, maintenance, and staffing issues. Yet, a frustrating and disheartening finding is that very little of this costly and useful information is properly captured, retrieved, and analyzed so that it can be used to support management decisionmaking. Successful and proactive jails are showing steady improvements in the use of jail data for planning, process monitoring, resource allocations and, in general, improvements in the ability to explore and understand policy and management decisions at a deeper level. Jail managers and administrators are learning the skills involved in taking a more data-driven approach, which can help them answer a variety of questions regarding jail operations and understand the many factors involved in monitoring, planning, and policy decisionmaking that constitute the complex performance of a jail.

For most jail monitoring and management issues, it is not expected that jail staff will become expert statisticians. Although it is true that jails are drowning in data, it appears unrealistic to expect that most jail managers—either senior administrators or middle managers—will have sophisticated statistical training.

However, most of the statistical and graphical tools that jail managers find most useful do not require statistical tests of significance or complex analyses. Instead, a manager can develop a substantially improved ability to monitor the workload, work performance, and quality of work done by the department or unit without having to use complex statistical methods.

Many jail database and MIS systems incorporate easy-to-use management report formats that are capable of producing most of the rosters, charts, and tables used in this and previous chapters. These systems have the ability to do frequency tabulations, simple cross-tabulations, pie charts, timeline graphs, and simple linear projections. High school algebra is all that is needed to understand these simple methods of data aggregation. Many management responsibilities (e.g., monitoring workload) can be readily addressed by these simple methods.

There are important roles that more advanced statistical methods can play in many jail policy issues (e.g., systems dynamics to understand jail crowding, nonlinear forecasting models). However, the aim of this chapter is to illustrate several simple skill sets that are available in most current jail environments and can be used productively by jail staff at all levels of the jail.



What Do You Need to Know to Do Your Job?

A key skill that jail employees—from senior administrators to middle managers to line staff—must have is to know what data are required, relevant, and pertinent to their particular jobs.

Many jail managers have difficulty specifying what information or data elements they need. They often do not think through the links between their job roles and the kinds of data and statistical procedures that may be most useful. The following two simple steps are recommended that may enable a jail manager to make progress in this first critical task of selecting the necessary variables and designing statistical and data-driven approaches to fit with their own job responsibilities and those of other jail personnel.

A security manager may quickly realize that disciplinary incidents are a useful indicator of disorder in the jail.

1. **Clarify job responsibilities.** The starting point in identifying the necessary data, for virtually any jail job, is for employees to list their job responsibilities. These are usually specified by the job tasks, goals, and broad job design. The simple question, “What am I responsible for?” can be used to prompt employees to enumerate their responsibilities, job tasks, work outputs, and work goals. This list will typically consist of relevant variables that are directly linked to the basic goals of the person’s job. For example, a key task of security staff is to prevent contraband from entering the jail. Thus, a directly relevant data element is the number of contraband incidents that occur each week or month in the jail. This is measurable and can be collected across time to monitor upward or downward trends.
2. **Formulate questions about job responsibilities or goals.** A clear list of responsibilities, key tasks, and unit goals can help staff and managers to formulate a list of performance and outcome indicators and related questions as the next step in identifying the precise data elements that may be needed.

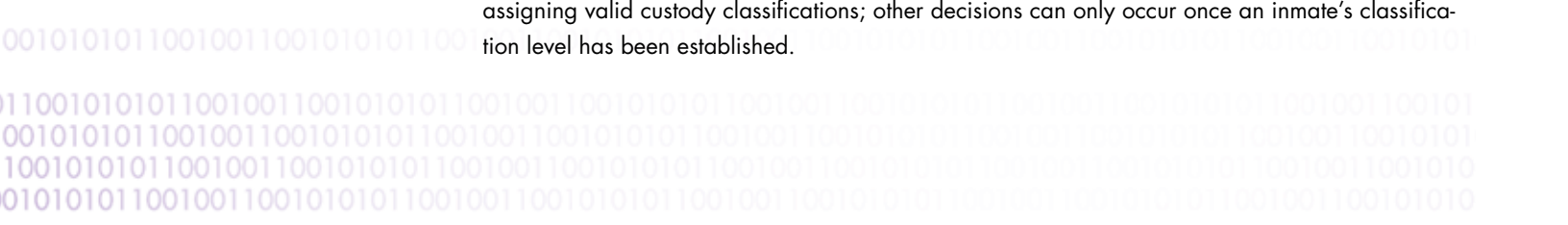
Listing specific responsibilities of jail personnel often points to many data elements and indicators that are linked to each major policy goal of the jail or of a specific unit.

Such lists should enable the administrator or IT staff to identify the data elements that are routinely collected, new data elements that need to be collected, and the kinds of reports, counts, or rosters that are needed to monitor a variety of job goals.

Line Staff

Line-staff members do not typically engage in big-picture planning and overall monitoring. However, they clearly depend on an effective information management system for individual data on offenders such as identification, classification, more confidential information, and related information about each specific inmate to guide decisionmaking. These decisions often fall into two categories:

1. **Routine decisions.** These are relatively simple, routine decisions that are often needed in real time and relate to classification levels, housing assignments, program and work assignments, transportation arrangements, and security arrangements. All of these decisions, to some degree, depend on assigning valid custody classifications; other decisions can only occur once an inmate’s classification level has been established.



2. **Nonroutine or anomalous decisions.** These decisions affect a smaller number of anomalous inmates who may be different enough from other inmates that the routine decisions are not sufficient; these inmates present a variety of aggravating or mitigating factors or ambiguities. These introduce nonroutine considerations that often require further information to resolve the anomaly and will usually require supervisory review. Such exceptional cases may be delayed until new information is available to resolve the aggravating issues (such as gang membership) or mitigating issues (such as a greatly diminished criminal career).

Line staff require real-time information about individual inmates from criminal and disciplinary histories as well as other data sources. This immediate availability of data is imperative for line-staff decisionmakers; they are engaged in high-pressure processing of large numbers of inmates that must be completed quickly.

However, line staff also may benefit from information on a larger scale, available in information systems software, regarding their overall workload, work tasks completed, goals achieved, and feedback reports on basic indicators of work quality. Such information may help line staff to understand the broader context of the jail and how their own jobs make an important and unique contribution to the larger organizational performance and goals of the jail (see chapter 1).

Middle Managers

Middle managers have a narrower focus than top administrators and will require data mainly to monitor factors for their specific units, such as classification, treatment services, foodstuffs, and transport. Thus, their critical data requirements may contribute to the monitoring of:

- Unit workloads.
- Work performed by the unit.
- Work quality indexes of employees within the unit.
- Achievement of goals and results.

Each of these categories will have multiple secondary measures that may apply to only a subset of these issues.

Upper Management and Policy/Planning Staff

Because jail administrators are basically responsible for the overall function and performance of the agency, they have a broader scope of responsibilities than other staff members. The senior staff persons must monitor the big picture and typically have a broader view that covers a range of jail operations, workloads, work performance, work quality, and policy goals. Additionally, these upper level managers must become adept at formulating useful queries regarding various ad hoc policy issues that arise.

For example, a useful approach to overall work demands consists of graphs for successive time periods (weekly or monthly) that indicate the total numbers of inmates in the jail. This is a useful proxy measure of overall workload demand on staff. Exhibit 5.1 is an example of a time graph that can be applied to any measure that is counted at regular time intervals.

Typical counts in
simple jail reports:

- Daily number of inmates entering the jail.
- Daily number of inmates in maximum security.
- Daily number of visits to the medical unit.

In other situations, the jail administrator's request may represent hunches or guesswork in the form of an open-ended question. In such cases, the IT person must attempt to crystallize the query to address the policy problem.

Typically, the IT staff or statistician will be more aware of the types of numerical analyses that may be used; searching the MIS and choosing key data elements can provide useful data tables and reports.

Types of Data Presentation

Static Counts and Rosters: Monitoring Amounts and Volumes

The simplest management reports traditionally used in jails have been counts.

These counts represent volume—for example, a measure of workload for the jail as a whole or in a specific unit to determine whether the jail's population limit has been exceeded.

Rosters are similar to simple counts but are often given as lists of alphanumeric data (inmate names) as a management report in table format. Such lists are tallies of inmates that are in a specific status, stage, or module in the jail. A daily roster is typically maintained to list all inmates held in the jail or in certain housing modules or lists of inmates waiting for some processing event (release, transportation, primary classification).

Trend Charts: Monitoring Events and Forecasting Populations

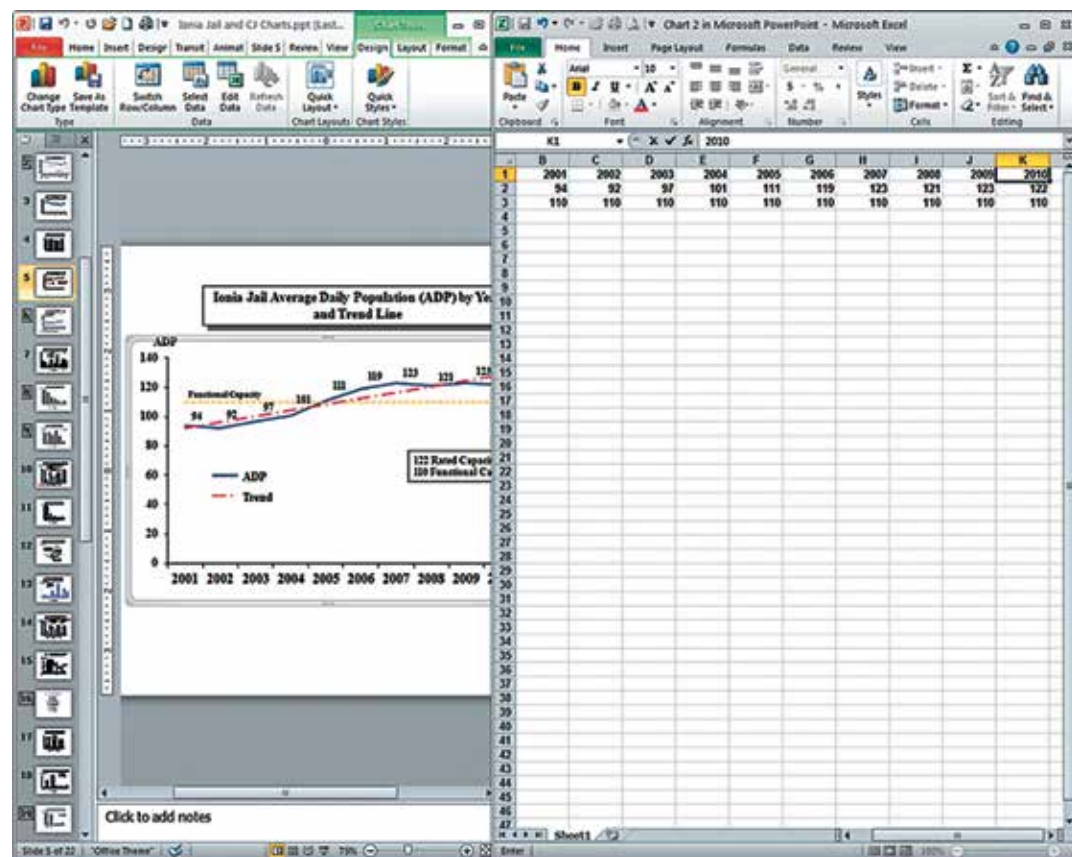
Many key events and populations (inmate violent incidents, overall workload, staff morale, staff competencies) must be tracked and monitored across time. Such monitoring is often critical to address management queries about the emergence of trends or how a specific population or event is changing over time. These counts provide the needed numbers to identify trend lines, assist with forecasting, and avert future crises.

In addition to monitoring events (e.g., escape attempts, staff sick days), jail managers often wish to monitor levels or trends of a variety of specific inmate population groups (e.g., admissions, inmates needing specific services, percentage of nonviolent inmates in maximum security). Provided such events or subpopulations can be counted, these data can be presented as a chart based on historical trends.

For planning purposes, jail managers also must engage in forecasting future resource and staffing needs. The data needed for forecasting typically involve a long sequence of measures of the specific factor being forecast (e.g., grievances, total average daily population). Often, a prior 5- to 10-year history is measured at specific time intervals (see exhibit 5.1).

Such time-based number sequences can be used to construct time graphs and then applied with a simple projection technique known as linear regression, typically available in Excel or other software programs. This method can superimpose a linear trend line on the time graph by using simple extrapolation of the historical trend into the future (see exhibit 5.1). However, a basic problem with extrapolation methods is that they assume the future will be similar to the past. However, trend extrapolation methods are all vulnerable to factors such as policy changes or demographic changes in the community.

EXHIBIT 5.1 JAIL AVERAGE DAILY POPULATION TREND



Frequency Tabulations: Understanding the Inmate Categories

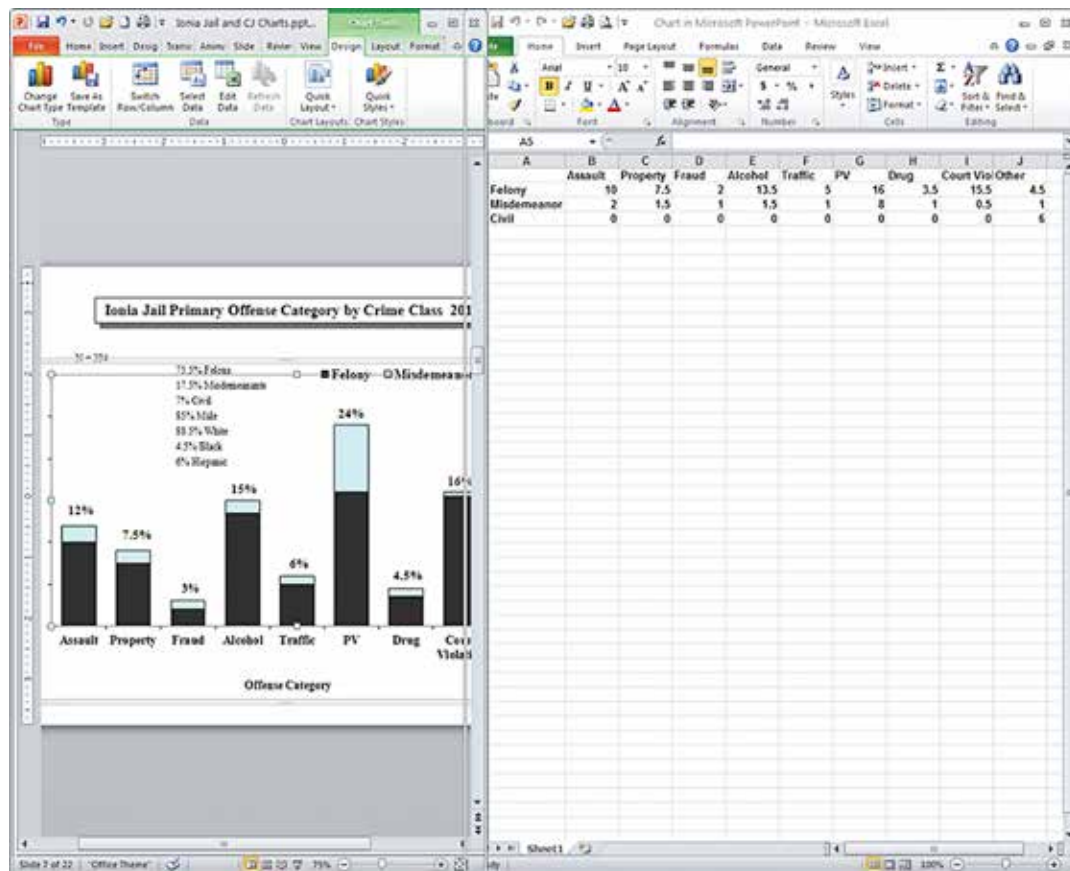
Although counts are useful and necessary for jail data collection, they gain meaning when they can be broken down into subcategories (by ethnicity, gender, age group). These breakdowns, expressed as frequencies or percentages, can help staff to understand the structure of any inmate category (for any subgroup or the total population). These simple frequency calculations can be useful in addressing common management queries, for example, what are the characteristics of the jail population in categories such as current offense, security level, or being sentenced or not sentenced?

Cross-Tabulations: Slicing and Dicing the Data

Cross-tabulations and frequency counts can be applied sequentially to drill down into the data to answer more specific questions about more narrowly defined subcategories in the jail (e.g., minimum security inmates by current offense).

For example, a query may include offenses bringing inmates into the jail and which of those are felonies or misdemeanors. This type of query is easily addressed by two sequential cross-tabulation analyses: first, for the overall jail population by offense category and, second, a cross-tabulation of misdemeanors and felonies for each offense subset. Exhibit 5.2 illustrates a cross-tabulation analysis of the jail population. Overall frequency counts had shown that in calendar year 2000, the inmate

EXHIBIT 5.2 JAIL PRIMARY OFFENSES

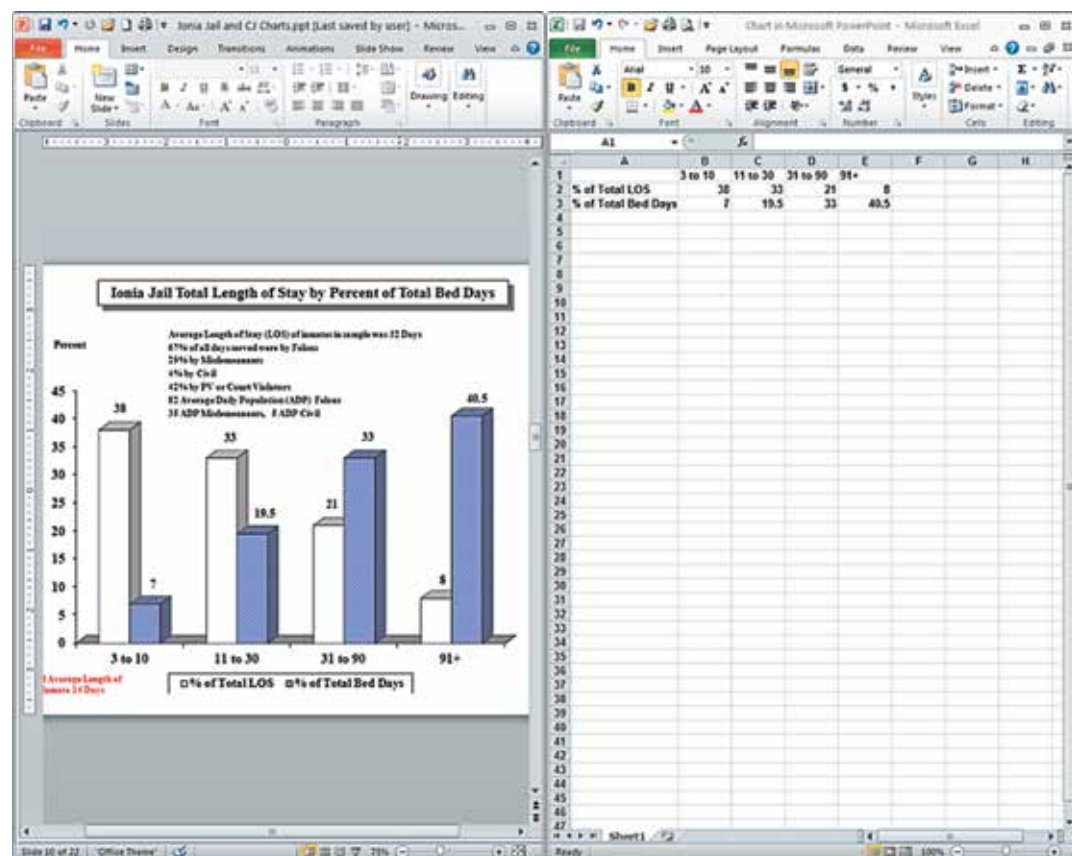


population consisted of 75.5 percent misdemeanants, 17.5 percent felons, and 7 percent civil offenders. However, of particular interest is the finding that 40 percent (or higher) of the population were incarcerated for probation violations (24 percent) or other court technical violations (e.g., 16 percent for failure to appear).

Another example of drill-down procedures in a study of jail crowding involves a manager's basic query to know the number of days in jail for various segments of the jail population. This drill-down process produced the graph shown in exhibit 5.3.

The results of the drill-down process in exhibit 5.3 established the frequencies or length of stay (LOS) categories. The drill-down first removed the short-term, revolving-door population (i.e., those inmates booked into the holding area and then released within 72 hours). The average LOSs for the remaining jail population was 32 days. A critical discovery was that misdemeanants accounted for 67 percent of all the days served in jail. A second key finding emerged when comparing the number of jail days with the LOSs of different segments of the jail population. Exhibit 5.3 shows that the segment of inmates incarcerated from 3 to 10 days accounted for 38 percent of all inmates but used only 7 percent of the beds. By comparison, the inmate population who were incarcerated for more than 90 days (8 percent) consumed 40.5 percent of the bed resources. This analysis demonstrates that LOS is a critical contributor to a jail's population and its crowding problems.

EXHIBIT 5.3 JAIL LENGTH OF STAY



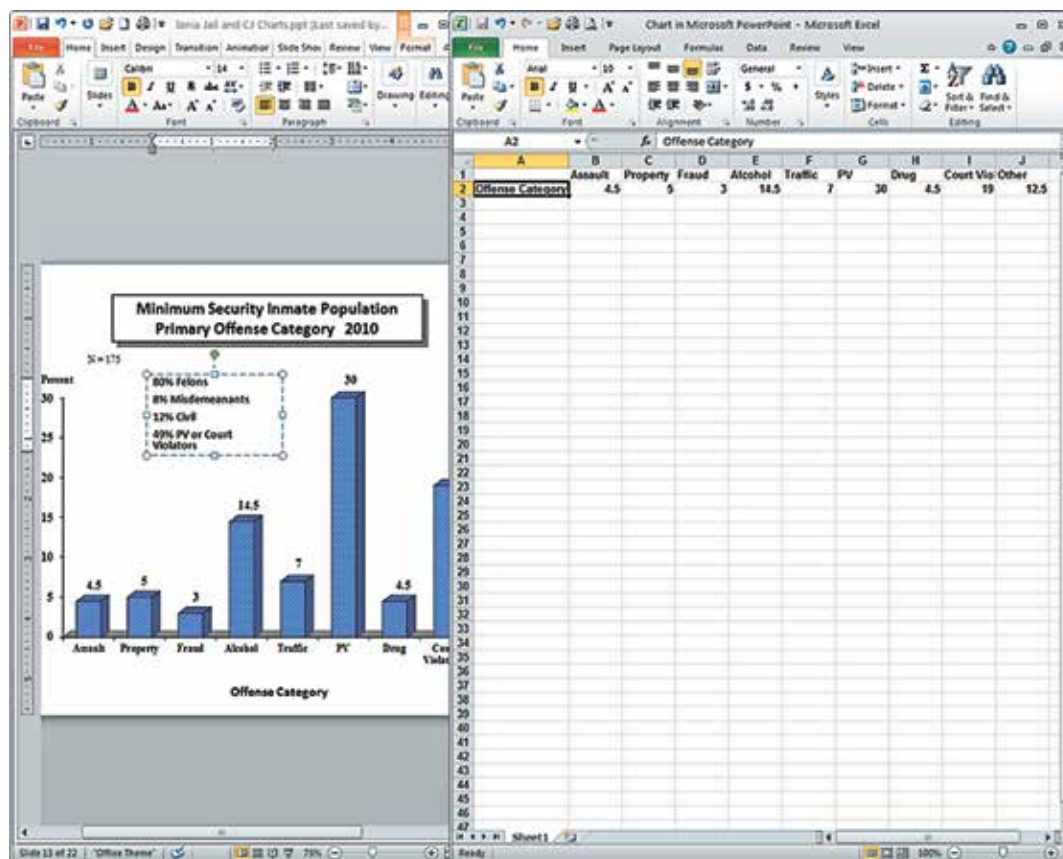
A manager can drill down to clarify data on the subpopulations within the jail, but these data would normally be invisible if counts or percentages were used for the total population. The manager can repeatedly cross-tabulate these specific subpopulations with other relevant factors to reveal important data about these subpopulations. Exhibit 5.3 shows that subpopulations with longer LOSs—only a small segment of the total jail population—contribute the highest number of days in jail and, as a subpopulation, contribute the most to jail crowding.

These drill-down procedures are typically constructed using the management reports module found in most current jail management software. The skills to use these procedures are simple and involve setting up reports that generate the sequenced cross-tabulations to address such queries. Innumerable jail queries about a variety of jail policy problems and subpopulations can be addressed by using such drill-down procedures.

Frequency Counts and Bar Graphs: Simple Data Pictures

Presenting data in visual form, such as bar or pie graphs, can have a powerful visual impact. Some simple policy queries can ask for frequency counts on specific subpopulations or event outcomes in the jail. This analysis involves a simple cross-tabulation to compute the frequency of selected categories

EXHIBIT 5.4 MINIMUM SECURITY OFFENSES



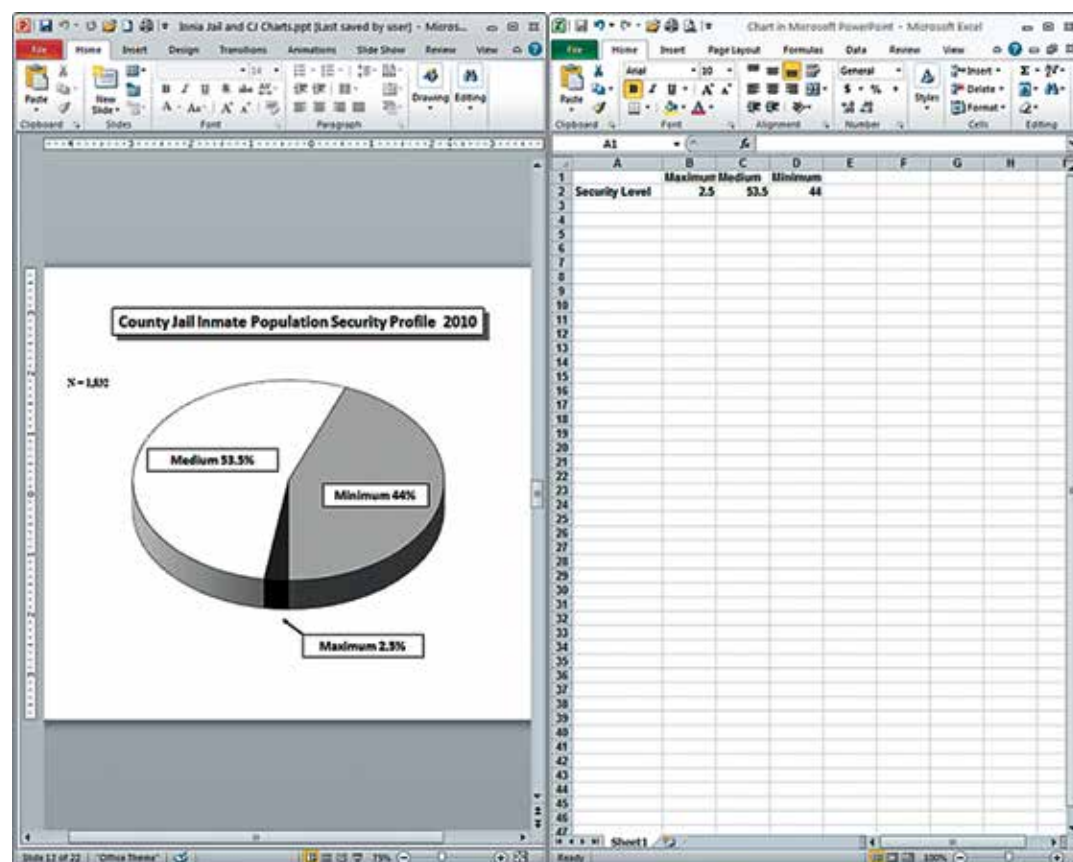
(e.g., a breakdown of jail population data by current offense) for selected subpopulations. Exhibit 5.4 shows the relative frequencies of current offense categories for a random sample of minimum-security inmates.

Exhibit 5.4 shows the results of a drill-down of data on minimum-security inmates that was initiated by the query, "What primary offense categories comprise the minimum-security population?" A simple cross-tabulation is designed to answer such questions. In this case, a cross-tabulation of each offense category (assault, property, fraud) with the jail's security classifications (maximum, medium, minimum) was conducted.

Pie Charts

A second graphical way to present data visually is in a pie chart. These types of visual displays can represent total populations or any relevant subpopulation. Exhibit 5.5 shows the relative frequencies of maximum-, medium-, and minimum-security inmates in a small rural jail; the minimum-security subpopulation is 53.5 percent of the general inmate population.

EXHIBIT 5.5 COUNTY JAIL SECURITY PROFILE



Comparisons Before and After New Policies and Procedures

When policy changes are introduced, it is often possible to conduct a comparison before and after the specific outcomes (disciplinary incidents, inmates eligible for GED classes, inmates in various security categories).

Changes in percentages of categories across time. Such changes may occur, for example, when jails adopt a new classification system or new processing policies. Often, it is important to assess the changes in the numbers of inmates at the different security classification levels. This analysis uses a simple cross-tabulation of two frequency breakdowns to compare how inmates are classified by the old and the new methods (see exhibit 5.6). This exhibit cross-tabulates the current security classifications (low, medium, and high, in the left column) with the new security classifications (low, medium, and high, in column headings). Exhibit 5.6 shows how offenders are classified by each system and where the two classifications agree or disagree. This exhibit shows that the old system places a higher

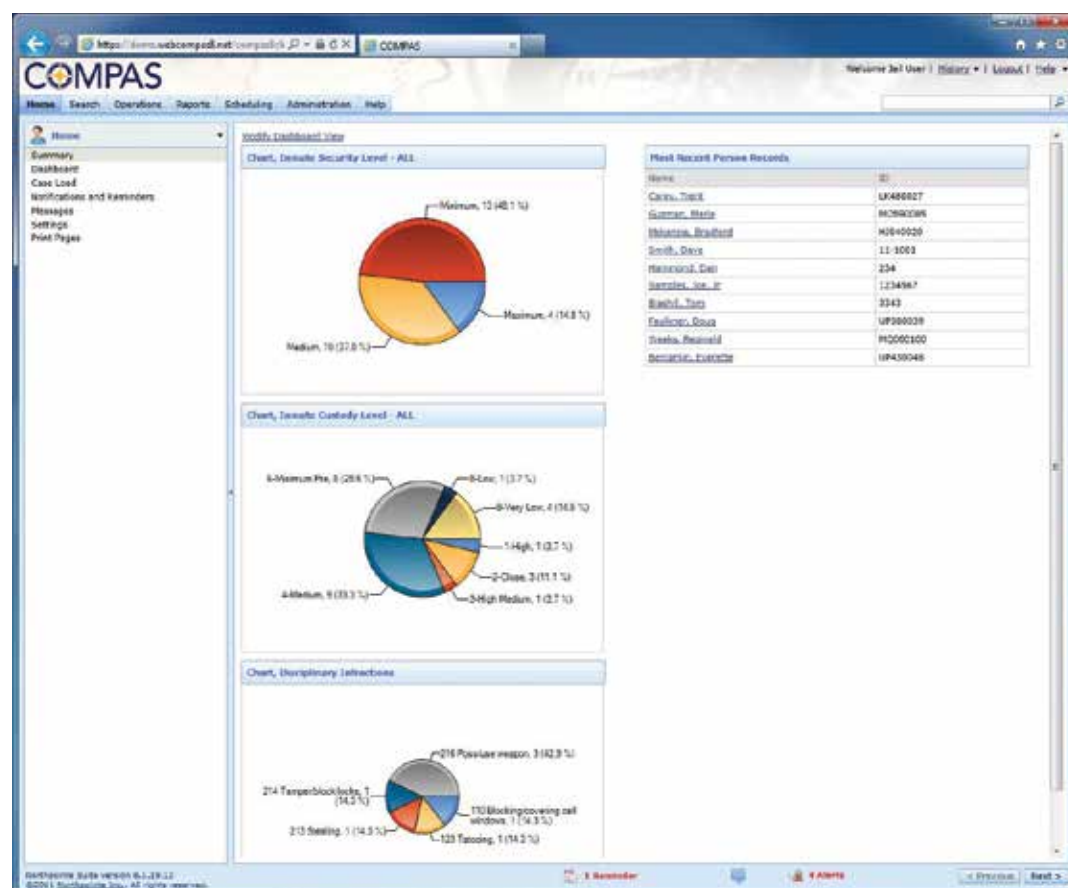
number of detainees into medium security (447), whereas the new system allocates only 222 to medium security, revealing that the new system redistributes many offenders into minimum and maximum security for a more even distribution of offenders in the three custody levels. Agreements between the two classifications are those cases in the diagonal cells of the exhibit, often called the main diagonal, that is, low-low (29), medium-medium (160), and high-high (20) cells. The off-diagonal cells indicate disagreements between the two systems. The totals (or percentages) in the margins of the exhibit provide the numbers of inmates classified as maximum, medium, or minimum security by each system (e.g., 82, 447, and 71 for the old classification system, and 232, 222, and 146 for the new system).

EXHIBIT 5.6 NEW INMATE SECURITY-CUSTODY LEVELS

Old Custody Levels	New Custody Levels			Totals
	Low	Medium	High	
Low security	29	35	18	82
Medium security	179	160	108	447
High security	24	27	20	71
Totals	232	222	146	600

Changes in mean values of key performance indicators. In a similar manner, there can be comparisons between old versus new time periods for the mean value of any particular measure (e.g., inmate grievances, rates of disciplinary infractions, staff absenteeism). These before-and-after comparisons may yield useful indicators of the impact of the policy or procedural change. It is important to acknowledge that these simple before-and-after comparisons do not attempt to use a careful experimental design, which is the gold standard against which to assess the impact of any new or experimental change in policy or procedures. Careful experimental designs can sometimes eliminate factors that confound any claims about the impact of a new procedure. However, these experiments are difficult to design in the real world of busy jails; their requirements of random assignment of inmates to experimental and control groups are also difficult to achieve in jails. Thus, tightly structured experimental designs are relatively rare in the jail context.

EXHIBIT 5.7 SAMPLE OF DATA DASHBOARD



Data dashboard designs for diverse stakeholders. A data dashboard contains a set of critical graphs and charts and a set of key numbers that allow managers to quickly assess the status and performance of the unit or department. (See a sample of a typical data dashboard in exhibit 5.7.) More specific data dashboards are often designed to assess key jail workloads and performance goals for specific departments, each with different concerns and responsibilities. Thus, separate dashboards with different key data indicators are customized for different jail departments and categories of users (e.g., line staff, middle management, administrators, and relevant public groups). The following resources may reflect different stakeholders with diverse responsibilities:

- **Jail administrators.** This level may require a data dashboard that displays a broad range of aggregated jail data that cover all major correctional goals (e.g., security, population trends, treatment provision, staff and inmate safety, staff morale, staff training and competence) as well as changes over time in overall jail population characteristics and other relevant policy factors. Such jail-wide indicators should address policy priorities that are measured at regular intervals so that trends and unexpected problems can be discerned quickly. A data dashboard with key data displayed in consistent formats across time should give administrators the information needed for quick identification of performance goals, changes in trends, and work quality levels of all departments. Appendix B shows an example of a jail administrator's data dashboard.

- **Community/public dashboard.** This may focus on indicators of major public concern (e.g., crowding, rehabilitative services, financial value of inmate community service work, goal achievement for public safety, and inmate incapacitation and rehabilitation). Allocations of public funding may be reflected in staffing patterns, training accomplishments, community volunteer services for the jail, and other indicators.
- **Interagency inmate population control committees.** Data dashboards of interagency committees may reflect the multiple causes of overcrowding, population trends and projections, admission categories, release rates by inmate category, and detailed analysis of jail days by the different offender target populations.

Critical indicators for data dashboards. An indicator is a data element that a user may need to monitor to ascertain a jail's performance relative to several correctional goals (e.g., public safety, staff morale, security risk management). For example, the goal of public safety can be assessed by using indicators such as (1) escapes and walkaways, (2) recidivism rates for violent offenses within a specific time-frame following release, and (3) return to jail for violent offenses. Each goal may have several indicators or data elements that yield information about the performance goal. Each jail should develop its own set of indicators for the major goals of the jail.

Making Predictions with Data: Simple Forecasting

Predictive analyses can be applied to any data that are collected at regular intervals (e.g., average daily population, suicide attempts per month, grievances per month by category). If this data stream has a substantial track record over time (e.g., more than a year) and a sufficient number of data points (e.g., 30 successive months or 10 successive years), then it is possible to compute the simple linear trends by using widely available linear regression software (see exhibit 5.1).

Linear regression software calculates a straight line that represents the best fit for the string of data points. This line broadly indicates whether the factor that is measured on a regular basis (e.g., ADP) is increasing, decreasing, or static. Of particular importance, the linear regression provides the rate at which the factor is changing for each unit of time (e.g., ADP is growing at the rate of five inmates per month).

More generally, forecasting may require very complex analyses when cyclical and nonlinear processes are involved (seasonal cycles, weekly cycles, recurring holiday events). These add a great deal to the complexity and are better handled by professional statisticians. A further complexity that often undermines trend forecasting occurs when the criminal justice system changes its policies, when sentencing policies change, or when a jurisdiction experiences economic or demographic changes. Such changes can have profound impacts on trends that cannot be estimated by relying on prior trends.

Summary

This chapter reviewed a number of simple data analysis procedures that are often used by jail administrators and managers for basic monitoring and management tasks. These procedures do not require the jail personnel to be trained as statisticians. Statistical training substantially enhances a manager's ability to organize and interpret these data and to use more advanced techniques. However, jail officers are acquiring substantial training in statistics at increasing rates; thus, they will be able to participate in more sophisticated research designs and use more sophisticated methods of data collection and analysis.

Note that jail MIS software packages now include useful management report modules, along with Excel, PowerPoint, and other systems that support most of the techniques described in this chapter. These systems are designed to be easy to use—steady growth is expected in the sophistication and effectiveness of the management reports being produced for jails. This capability will allow jail managers and administrators to monitor most of the key processes and goals of their jails. Having this skill set will also support policymakers in tackling jail policy issues and applying the relevant data to the basic problems that confront jails.

CHAPTER 6

PLANNING AND DEVELOPING INFORMATION SYSTEMS

Introduction

This chapter addresses the important steps involved in planning and developing an information system plan for comprehensive jail data collection systems or smaller, specialized systems.

Depending upon the complexity of required functionality and other factors related to implementation, some of these steps may be relatively straightforward. In other instances, each step could be quite involved and may require significant time and resources to complete. However, the use of a method is important to ensure successful implementation of the jail system regardless of size or complexity of the envisioned new jail data collection system.

Pre-Implementation Steps

The pre-implementation steps or phases critical to the development of a jail's information system include the following:

- Developing a strategic plan for the jail and its associated criminal justice agencies. This includes mission statements, goals, and objectives of the agency and/or jail.
- Identifying and documenting current capabilities for data collection.
- Identifying additional requirements and desired functions.
- Developing a strategic plan for the types of data to collect.
- Analyzing current capabilities versus required or desired capabilities.
- Assessing funding capabilities.
- Developing a plan for data collection (automation) and reports that are based on these findings.

These pre-implementation steps are discussed in this chapter in some detail. The planning stage of a systemwide automation project is the most critical step in the process and is the groundwork necessary for building a project plan to implement new systems or enhancements to current systems.

The planning process for jail systems is critical. Historically, a large proportion of systems in both government and the private sector have been total or partial failures. Even systems that have been considered successful have frequently been implemented with significant cost overruns and/or time delays. It is not uncommon for the jail user community to be less than totally satisfied with some of the functions or have concerns about critical functions that are missing from the jail's information system. Although

there are many possible causes for a high level of dissatisfaction, poor or inadequate information system planning is frequently the major culprit.

Developing a Strategic Plan for the Agency or Jail

Before the development of any policy and procedures that encompass data collection and management, an agency must have a strategic plan in place to guide its staff and operations in both the short and long term. Without this strategic plan, an agency's purpose and the road forward are not evident to the employees. This strategic plan must be embraced by the public stakeholders the agency serves and by the agency's funding source. The plan should clarify both short-term objectives and long-term goals. The plan, once developed and approved by the major stakeholders, should be distributed and adopted by the entire agency. Without knowing what indicators will be used to evaluate the agency's effectiveness, data collection is meaningless.

Identifying and Documenting Current Capabilities for Data Collection

Identifying the desired future state of an organization's systems requires a clear understanding of the current status of its systems. The strategic plan should document current manual and automated systems used by the jail or agency. Current systems should be described in detail from both functional and technical perspectives and each system assessed in terms of their strengths and weaknesses. Part of the strategic planning process will identify how these existing systems will be incorporated in the new systems environment. Options to consider include a) continuing to operate "as is," independent of the new system; (b) maintaining the existing system but providing enhancements, (c) interfacing the existing system with the new system, (d) replacing the existing system altogether; or (e) some combination of the above. During this planning process it is often discovered that small PC-based systems or other niche systems (i.e., specialized inmate classification systems) have been built or purchased and are critical to a business unit's functioning. These niche systems, as well as manual systems related to the target business areas, should be identified in the strategic plan.

Identifying Additional Requirements and Desired Functions

This is the fun, creative part of the process. All operations personnel will be able to identify requirements that they need and would desire to perform their jobs better. Managers will be able to identify the reports that they require if they have established the goals and objectives described in the first step of this process. Criminal justice stakeholders and the public will identify what functions and information they will need and what would be desirable to have. These requirements need to be categorized and prioritized so that when funding becomes an issue, higher priority categories are kept and desired but not necessary categories are sacrificed. These are not business requirements; requirements are defined later as part of each project in the plan.

The planning process should ensure that new technologies can be adapted and implemented in the jail system as these technologies evolve. For example, technologies such as handheld scanners, RFID tags, and biometrics are becoming more commonplace in the jail environment. The strategic plan must ensure that the implemented system solutions have the flexibility and open architecture to take advantage of new technologies without requiring a significant rewrite or replacement of the deployed application software.

Analyzing Current Capabilities versus Required or Desired Capabilities

Technology itself, and its application in the jail environment, is a moving target. Because the time horizon for a strategic plan is typically 3 to 5 years, ensuring that the right information technology is deployed several years in the future becomes more difficult. The problem is further complicated by the investment of time and resources to implement a new technology. Consequently, the strategic plan must ensure that the planned systems have an underlying technical architecture that enables expansion and the use of evolving technologies while protecting the current investment in the system.

Assessing Funding Capabilities

It is important that the strategic plan identify the estimated level of resources required for each project in the plan. Both hard costs and soft costs should be specified for each project. Hard costs are items related to hardware, software, and services from external vendors. In addition to one-time expenditures for these items, ongoing costs for hardware and software maintenance, training, and related costs should be identified in the system's budget. Soft costs relate primarily to the personnel time of jail, IT, and other staff within the jurisdiction to develop and implement the jail system(s). One-time funding sources and recurring sources of revenue should be documented in the plan. This is one of the key roles performed by the steering committee.

At this early stage, it is difficult with any technology project to ensure that all costs are identified and budgeted as accurately as possible. Contingency funds of up to 20 percent of the project costs is one mechanism used to address unexpected costs as development and implementation evolve. It is not uncommon for project requirements to expand, new legislation to be adopted, or other unpredictable factors to expand the scope of the project during the development phase. Contingency funds provide a means by which to plan for inevitable changes and unknowns in the typical IT project while minimizing the need to procure new monies for the project.

Developing a Plan for Data Collection and Analysis

Based on information gathered in earlier steps, the next major step is the development of a plan. This can be a formal, long-term strategic information systems plan (which is preferable) or a project charter specific to each project. If the objective is the phased development and implementation of systems over an extended time frame, an information systems plan for a 3- to 5-year period is appropriate and may encompass a strategic vision for deployment of technology projects. A more limited project charter may be applicable to one specific project. In either case, the contents of the strategic plan and a project charter are similar; the primary difference is the scope and depth of the plan.

The heart of the plan is determining the systems, their components, and specific projects and information needs that will be required to address the identified business problems. This is accomplished by prioritizing in the current systems environment; the strategy or approach can take several forms. A single, comprehensive system or multiple, interfaced systems may be defined. The advantages and disadvantages of alternative strategies are discussed in more detail in other sections.

The information systems strategy will be based on assimilating the identified priorities, relating these to the current systems, and then identifying the systems required to address the priorities. This is typically

an iterative process involving the various stakeholders. The system strategy is refined until one or more systems are identified. The systems are then segmented into discrete projects, and a strategy is developed to transition from the current state to the desired future state. Multiyear plans that involve several projects are typically updated on an annual basis to reflect changes and evolving business needs.

The plan should identify the factors that are critical to the project's success. Critical success factors will vary depending on the political climate, current state of automation, and other factors that may be influenced by, but not necessarily under the complete control of, the steering committee. Critical success factors may relate to the availability of funding or budget approval, cooperation of other justice agencies at the local or state level, agreement to major changes in business processes, or several other factors specific to the economic, organizational, and political climate of the jurisdiction in which the jail operates.

In the final analysis, a strategic plan for an information system will only be successfully implemented if there is consensus among the stakeholders throughout the organization on the goals, priorities, scope, budget, schedule, and other critical components of the plan. Consensus building is an iterative process facilitated by an active steering committee and involved user groups. Although it is highly unlikely that total consensus can be reached on all aspects of an information system plan, there needs to be agreement on the basic tenets of the plan to mitigate the risks of project delays or failure.

Organizational Structure: The Right Team

The cornerstone of the system planning process is to put in place the right organizational structure. A common theme throughout this document is the importance of fully engaging stakeholders. This is certainly the case for information systems planning. The right team must be assembled with appropriate representation of the agency from several levels within the organization, including executive, middle management, and line personnel. Consensus building for the scope, goals, budget, schedule, and other facets of the information system is extremely important.

Organizational structures, typically put in place to manage the planning process, include an executive steering committee and more than one user group. The steering committee usually includes jail and IT executives and other management-level representatives from the jurisdiction that are stakeholders in the jail system. This could include representatives from local police agencies, state prisons, budget officers, prosecutors, and other local criminal justice agency stakeholders. The steering committee provides project oversight and addresses policy issues as they occur throughout the system development process.

User groups also are a critical component of the organizational structure. Typically, subject matter experts across the disciplines impacted by the jail system are represented in one or more user groups. Depending on the number of disciplines included in the planned system and the size of the jurisdiction, multiple user groups may operate under the auspices of the steering committee. The user groups will be more involved in the definition of requirements, working with the technical development team throughout the design process, testing all components of the system, and guiding project development from the planning stage through implementation.

Priorities in Developing a Jail's Information System

Because jail operations encompass a broad range of functions and information needs—and because changes in an organization can be challenging when new technology is introduced—it is important for the plan to clearly identify the priorities for system development. The basis for prioritization can be one or more of many factors, including but not limited to the following:

- Interdependent system functions, requiring some components to be implemented before others.
- Prioritization of business problems.
- Ease of implementation and timely retrieval of relevant data.
- Political priorities.
- Needing complex interfaces with other systems.
- Funding limitations or other constraints.

It is important for the steering committee to reach consensus on priorities and to document system development priorities. This aspect of the planning process is critical in finalizing the strategy for the jail's development and implementation of a new system.

Documentation of Business Requirements

Strategic plans should include tasks and activities related to documentation of detailed business requirements that address the identified problems. Requirements must be fully understood and clearly documented early in the system development process. Requirements documentation is often not given adequate time and staff resources to comprehensively complete this task. There is frequently pressure to implement a system in a short time, which may lead to the temptation to jump right to implementation of a system solution without a clear understanding of the requirements. This is a problem unless the agency has previously identified and clearly documented requirements. Even in this instance, when selecting a commercial, off-the-shelf vendor, it is useful to confirm required tasks before testing and implementation. This will ensure that the scope of the project is clear from both the agency and vendor perspectives.

Requirements identification is one phase of the jail system development process and is, in fact, a project, in and of itself, that requires management. A project schedule with milestones, identified tasks, assignments, budget, and other components of the project plan must be documented. Depending on the scope of the new jail system, the level of resource commitment, and the existing documentation of the current systems environment, this could be a two-month endeavor or it may extend to a year or longer.

Frequent interaction with the user groups and oversight by the steering committee will be necessary to manage the requirements identification process effectively. The project team will be held accountable to these groups to provide a quality assurance process. The steering committee will be the final approval authority of the requirements documentation.

The plan itself may require updates upon completion of the requirements analysis. It is not uncommon to make some changes in scope, project schedule, and strategic direction as a result of the more detailed analysis in this phase of the development process.

Business Process Re-engineering

Business process re-engineering is a term that refers to changes in the procedures and processes for meeting the operational needs of the jail at the time of introduction of new systems and technologies. In terms of strategic planning, it is important to recognize the willingness and level of acceptance within the organization for process change concurrent with implementation of a new system. To limit strategic planning to automation of existing business practices is usually not the best practice. In many cases, efficiencies can be gained by improving work processes rather than simply converting from manual to automated approaches to the same business practices that have been in place for some time. Training issues, resistance to change, and other implementation issues must be addressed when any significant change in the business process occurs.

Information-Sharing Strategy and External System Interfaces

Recognition of jail business partners is a critical component of the planning process. Even if information sharing with the courts, law enforcement, district attorney's office, state corrections, and other agencies is not envisioned in the short-term, systems planning must account for the inevitable sharing and exchange of data through information technology in the future. To ensure that the underlying technical architecture supports system interfaces and information sharing is an important consideration for the strategic plan. Rarely are new jail systems developed without system access by other justice agencies and without interfaces to external systems.

Project Schedule and Timetable

The next step in the planning process is to clearly identify the schedule and timetable for each project and project phase in the IT/MIS plan. All major tasks and milestones become part of the project plan. A long-term strategic plan is typically limited to high-level tasks and milestones for each of the plan's components. Detailed planning for major tasks such as acceptance testing, training, and deployment are deferred. Tasks and activities relevant to IT/MIS projects are discussed in some detail in other chapters.

Summary

It is not uncommon for jail information systems to be planned with only a vague idea of what is really wanted and needed. Stakeholders may reach a consensus that a new computer system is needed without considering the specific business problems that the new system will need to address. The plan or project charter should clearly document the scope of the system from a business perspective. The planning document need not provide detailed requirements; however, each business or system function, problem, and need should be documented. Specifying what is and is not within the scope of the project plan can also be helpful. A clearly defined scope is vital in managing user expectations and controlling the development process.

CHAPTER 7

IMPLEMENTING INFORMATION SYSTEMS

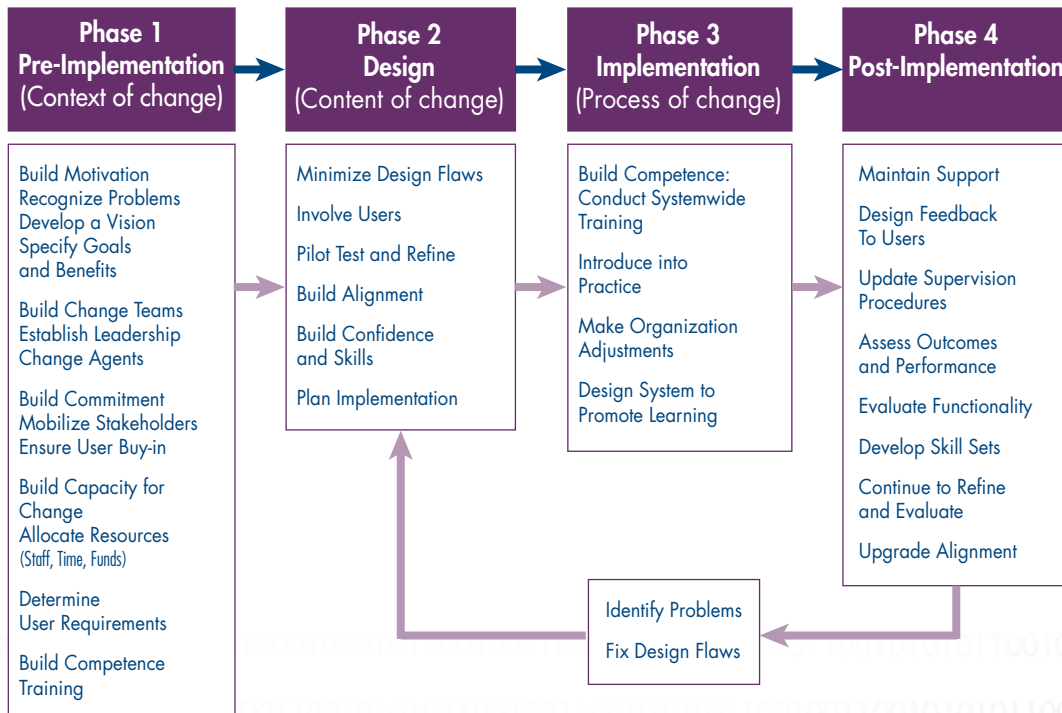
Introduction

Jail system implementation is a broad topic that cannot possibly be addressed in an exhaustive manner in this chapter. Instead, some guidelines, an overview of methods and approaches to ensure effective initial implementation, and the continued evolution of the jail system with functional enhancements and the technical platform are the focus of this chapter. Implementation is not a single milestone but an ongoing process.

A Four-Phase Model of Implementation

This model offers a broad roadmap by which to approach change in the jail's MIS. The change model can be applied to most situations that require implementation of new technologies, processes, or policies, and it aims to guide managers through such implementation projects. The framework has four broad overlapping and interrelated phases,⁵ illustrated in exhibit 7.1.

EXHIBIT 7.1 MAJOR PHASES OF IMPLEMENTATION AND KEY TASKS



⁵Adapted from *Up and Running: Integrating Technology and the Organization*, by Robert E. Walton (Boston: Harvard Business School Press, 1989).

Phase 1: Pre-Implementation

The main tasks of this phase include the following:

1. **Recognize the initial problem.** This task involves presenting a strong justification that a problem exists with the jail's current systems and/or use of technology and that there is need for change. The staff as a whole, and top management in particular, must understand the deficiencies and rationale, the need for change, and the new vision; otherwise, business as usual will prevail. The reasons behind the change must be clearly communicated.
2. **Build a supportive coalition.** Change seldom occurs in a jail without strong political support. The ideal is a unified commitment among jail leadership and key stakeholders. To obtain the support of key people who have influence and authority is a priority. If they are not supportive, they may sabotage the IT project. Ideally, such support should be coordinated before the project progresses too far; major stakeholders naturally prefer early involvement in agenda setting and design decisions.
3. **Involve a broad base of stakeholders.** Any jail-wide IT procedure will typically have broad scope—it may impact multiple jail stakeholders (e.g., security, classification, IT staff). These stakeholders must all be involved; they are more likely to resist if they feel excluded. Incorporation of all key players also offers some direct participation, which typically strengthens their buy-in, their acceptance of the final design, and their commitment.
4. **Specify the deficiencies of current jail system performance.** The change agent must present a persuasive analysis of the performance deficits of the current IT systems and procedures.
5. **Develop a vision of desired goals/benefits.** A vision statement of expected benefits provides a sense of direction and motivation. All major stakeholders should agree on the intended benefits of a new system.
6. **Develop performance requirements and functions of the new management IT system.** This task involves the stakeholders in developing a wish list of ideal performance requirements and specific functions of the new MIS.
7. **Mobilize a planning structure to handle the change.** This step aims to strengthen the adaptive capacity of the jail. Normal staff jobs are not geared to the management, design, and implementation of change in the IT/MIS design. Thus, new planning structures or committees are usually needed to enhance the adaptive capacity of the jail. These structures may include:
 - A transition manager for IT (change agent).
 - An IT steering committee.
 - An implementation team, including key stakeholders.
 - A planner to monitor implementation progress.
 - External IT consultants, as needed.

The core transitional team will manage training, planning, design, troubleshooting, coordinating, and maintaining the momentum of the process. Leadership is generally provided by a transition

manager. This person must often assume the role of change agent. The selection and skills of this person are critical (e.g., has respect of peers, management and political skills).

8. **Review preliminary IT functions and alignment issues.** This design task builds on the list of performance requirements and benefits. Preliminary specifications are required to finalize a design for a new system (see chapter 6). It is impossible to design an appropriate procedure if these specifications are vague.
9. **Initiate training and develop competencies with the new software.** Major IT changes in jails often require new staff skills and new understandings. For example, a poor understanding of IT functions among staff can result in unrecognized design flaws that can be introduced into the new system by unwary administrators (e.g., gaps in key data elements, inadequate classification methods, poorly designed data screens, unintelligible or missing management reports, inability to produce ad hoc reports).
10. **Develop (and continually refine) a project plan.** A tentative implementation plan must be developed, maintained, and regularly updated by the transition team. Specific tasks, milestones, and responsibilities must be identified. A critical component is estimating the resources needed to conduct implementation across all phases. The plan should be brief, contain a list of the changes proposed, list why they are important, name who will do them, estimate how long each will take, and determine the sequence in which they are to be completed.

Phase 2: Design

This complex phase involves detailed pilot tests and revisions of the initial prototype design of the new jail system procedures, involving the following subtasks:

- Finalize the system design and performance requirements. Build on preliminary work to specify needs and functionalities of the system.
- Train staff in the new prototype procedures. Staff must be trained in the new procedures to engage meaningfully in the pilot test.
- Pilot test the new system, assess whether performance and functionalities have been met, and check the alignment (fit) with the jail.
- Examine the fit or alignment of the system to the local jail environment using pilot test results, performance testing, and a process analysis in real-life conditions.
- Make refinements as necessary to achieve the best possible fit with the jail's needs.

Phase 3: Implementation

This phase introduces the new system into the jail's standard operating procedures. The following tasks are critical:

- Maintain a detailed implementation plan.
- Develop mechanisms to monitor progress and identify conflicts and glitches.

- Provide for problem solving and design adaptations as glitches or problems emerge.
- Allow for continuous planning by emphasizing the continuous, flexible nature of planning and the need to be responsive to the emerging dynamic situation.
- Transition from the old to the new system (i.e., go live). Standing procedures are often continued while the new system is phased in.
- Build competence. Successful implementation involves acquiring new skills at requisite levels, and new supervisory procedures may be needed.

Phase 4: Post-Implementation

This phase involves consolidation, monitoring, evaluation, and continuous learning from the implementation process. The major tasks are as follows:

- Assess impacts and outcomes of the new procedure and monitor outcomes to answer questions (e.g., “Did the new system reach our goals?”).
- Evaluate the process to assess the integrity with which staff are using new procedures, as well as their resistance, compliance, goal sabotage, and goal substitution.
- Make revisions to the system design or procedures as needed. Using post-implementation monitoring, jail managers may identify system features to be modified or added.
- Conduct debriefing sessions with the transition team to answer questions such as “What has worked well?” “What was difficult?” “What did we learn about change implementation?”
- Conduct ongoing skills development. The above evaluations may indicate skill deficiencies, a need for new supervision methods, or new statistical reports for jail managers.
- Provide feedback systems and management reports for all key stakeholders. A new jail system offers a rapidly expanding database with relevant data for all stakeholders to access. Reports should be developed for routine distribution to all units and stakeholders.

Implementing Management Skills

Having inadequate or ineffective implementation skills can waste resources, fail to achieve the benefits of a new or improved system and, in some cases, result in the abandonment of the system, with substantial loss of time and financial resources. Furthermore, the software may be perceived as ineffective. *This conclusion is clearly misleading if the new software was never implemented effectively, if users did not achieve competency, or there was little fidelity to the original design.* Given the continual emergence of new systems and procedures, many jail managers must develop effective skills in planning implementation and must become change leaders. There is a pressing need for clear, systematic implementation strategies to manage system changes in jails.

Difficulties of Implementing Change in Jails

Experience with jails during implementation of new or changing systems has demonstrated how difficult it is to manage changes in technology and has shown that the success of implementation is often more important than the technical design of the new system. Implementation problems emerge at all phases of innovation and, in some cases, may sabotage the entire effort.

In adopting or upgrading information system technologies, remarkable differences exist between jails in the time it takes to achieve implementation as well as competence, function, data quality, and integrity when using the new procedures. Top-down implementation alone cannot force new technologies or procedural innovations onto a jail; it may simply graft superficial changes over deeply rooted attitudes, procedures, and correctional cultures. Several factors contribute to the difficulty of making organizational and procedural IT/MIS changes in jails:

1. No single, standard model of jail technology innovation and implementation exists. Thus, jail managers have no standard strategy to follow when they implement new IT procedures.
2. Reporting software for criminal justice management is usually not designed or documented for easy transfer of data between agencies. Most are tailored to local organizational norms, policies, and procedures.
3. There is a lack of accurate and readable documentation of previous jail system implementation projects that can be used for training. Thus, there is little cumulative development in this topic of implementation.⁶

Implementing the Pilot Program and the Training Phase

This phase focuses on the development of a workable, well-tested design for the new jail system's features and procedures, initial training strategies, and the completion of a rigorous pilot implementation (or a trial run) to assess the JMS's achievement of the desired goals, to identify remaining design flaws and omissions of key functions, and identify any further modifications that may be needed. Specific topics covered in this section are user acceptance testing (UAT), system performance testing, training strategies, functional and geographical phasing, and the identification and resolution of system defects during pilot implementation.

User Acceptance Testing

UAT is probably the most important level of testing in the implementation process. Typically, the earlier stages of testing, such as unit, system, and integration testing, are conducted by technical and specialized staff. UAT provides end users with the opportunity to test how well the system conforms to and supports actual jail business functions and meets expectations. The basis for UAT is the documented requirements of the new system. Based upon these requirements, test scenarios are defined and specific tests are documented to be used in UAT. Functions (e.g., initial booking, identification,

⁶Brennan, Tim. 1999. "Implementing Organizational Change in Criminal Justice: Some Lessons From Jail Classification Systems." *Corrections Management Quarterly* 3(2):11–27.

property management, medical screening, and classification) are tested individually and then also as an integrated complete process (e.g., the entire intake process, including multiple individual functions as previously specified). A UAT plan should be documented with all of the business scenarios, specific test scripts to support the testing these business scenarios, and expected results for each test script. The test scripts should be comprehensive and identify all of the common variations associated with each business process.

It is never possible to test all possible conditions thoroughly; there are simply too many combinations and permutations of intake data that occur over extended time periods. However, the UAT test plan should address all common known variations to ensure that the new system can handle normal variations in business processes. The UAT plan with test scripts and expected results will provide the testers with a basis for the execution of these tests and will report both successful completion and identified problems.

Another component of some UAT test plans is so-called bust-the-system testing. The jail system should have a robust design and not fail or abort under abnormal data entry conditions. Bust-the-system testing allows end users to ensure that the system does not fail under any condition of abnormal data entry. In any system, inadvertent user actions will occur on occasion, and the system must be designed to handle these occurrences.

UAT test results, not just defects, should be documented in a test results report to provide an audit trail and confirmation that all planned testing has been successfully completed. A reported defect that has been corrected will need to be retested to confirm that the defect has in fact been corrected. Depending upon the quality of the software and the complexity of the system, regression testing could extend UAT test timeframes significantly. Upon completion of UAT, there should be a high degree of confidence that the system meets user functional requirements and expectations and that there is an acceptable level of risk with full deployment of the system.

System Performance Testing

System performance testing is another type of test conducted as part of pilot implementation. The purpose of this test is to determine whether the system meets its performance goals. System performance goals consist of both highly technical and user-focused goals. For example, a performance goal might be stated as, "The response time for a booking transaction should be 2 seconds or less with peak load of 100 concurrent users." Another performance goal might be that data transferred from an interfaced system should be available within five minutes of initial data entry in the original system.

Performance expectations should be clearly documented prior to performance testing. Otherwise, meaningful performance testing cannot be conducted. Technical staff will be required to assist with both the identification of system performance goals and a plan to conduct performance testing. Unlike other types of testing that have been discussed, system performance testing is very difficult to conduct in a meaningful way prior to pilot or initial implementation. Although software tools are available for stress and other performance tests, these tools are expensive and sometimes produce misleading results.

Performance testing is best conducted during pilot implementation with real users in the real computing environment of the jail. Key system components can be monitored and measured and bottlenecks identified. Based upon performance monitoring, the jail system can be tuned and improved. Once the system is implemented, monitoring system performance becomes an ongoing task that uses system tools that are readily available to measure and report system performance in terms such as the utilization of CPU, memory, storage, network, and other key system components.

Training Strategies

Management, local IT staff, and line users must all be trained in the new system procedures and in the ways the system can support jail operations. A training curriculum explains to all staff how JMS technology will meet the many information needs of the jail. This curriculum also includes the following:

- Learning the technical procedures of the software and its strengths and weaknesses.
- Designing management reports.
- Obtaining critical data from the JMS to support decisionmaking.
- Meeting legal requirements for collecting objective, high-quality data.
- Knowing the professional association standards for data quality.
- Learning and practicing how to use the system to support all jail operations.

In a jail context, there is typically a strong focus on building and maintaining the competency of staff. Major policy, procedural, and technical changes usually require new skills, perspectives, and information. If jail managers poorly understand the roles and functions of IT, they may remain unaware of its capacities or any design flaws in the new jail system. Training plans are essential with any new technology or procedural change; otherwise, current procedures and organizational knowledge may be rendered obsolete. With rapid change, the skill sets of a jail's staff and its institutional knowledge may deteriorate. Skill building and effective training cannot be ignored.

A common training strategy when implementing jail systems, particularly in large organizations, is a train-the-trainers approach. Training staff to be experts in the new jail system and involving them in UAT are important. They train the other jail staff and frequently become the "super-users" who serve as the frontline for ongoing support and technical assistance. This approach can be a cost-effective training strategy that keeps training in-house for new staff and staff on rotation. When the software provider is available, it can support the organization's training needs, using online tutorials for initial training of new users and for refreshing the skills of existing users.

Implementing the Functional and Geographic Phases

Implementing a pilot program can be an effective strategy for phasing in both the functional and geographic components of the new system. In the pilot program, limited functionalities are phased in by subdividing the jail system into manageable components and implementing the program in each component across the system. Geographical phasing, on the other hand, limits the implementation of

a jail system to a single facility, or a module within the facility, before widespread application of the system throughout the jail organization.

There are a number of reasons that an agency may decide that functional phasing is required when implementing a jail system. The pace at which the organization can make changes—and any budget constraints—may limit which jail functions can be implemented in the initial phase. In other instances, further analysis may be necessary before a new system function is well understood and can be implemented. Jail systems sometimes have components that are dependent on each other and thus dictate the order that functions are phased in. External factors also may influence functional phasing. For example, an audit of the accounting system for the commissary and inmate fund may mandate the immediate implementation of a new cashiering system to resolve financial audit issues. Developing an interface may be a lower priority and may be implemented in a later phase. Functional phasing usually makes more sense when implementing a new jail system than making systemwide changes all at once, with its inherent risks. Determine how to implement a pilot program using functional phasing to ensure that all interdependent or linked functions are implemented in the same phase. This avoids situations in which multiple systems, or a combination of manual and multiple systems, are used to complete tasks.

Geographical phasing is typically implemented for different reasons than functional phasing. Although budgetary constraints can often play a part, geographical phasing also allows the organization to refine its business processes and introduce new procedures before deploying throughout the jail system. The introduction of new hardware and software technologies may drive the need for geographical phasing. For example, the use of handheld wireless scanners to track inmates' movements and activities has technological risks. By limiting implementation of a new technology to one part of the jail at a time, the risks are minimized.

With geographical phasing, any operational problems or needed enhancements to the jail software can be identified and deployed as part of the pilot implementation. Note, however, that geographical phasing may not be realistic in many situations. The jail jurisdiction may not be large enough to justify this type of phasing. To receive the full benefit of the new system and to avoid expensive parallel operations, full deployment of the new system throughout the jail may be more cost-effective.

Identifying and Resolving System Defects and Problems

Managing the processes of identifying, reporting, and resolving any system defects and problems is ongoing during the testing and use of the JMS. Although initiated during the testing phase, this process of tracking system problems and defects continues throughout the life of the system. System defects are expected to be more extensive during the testing phases of the system's performance and users' acceptance. However, testing cannot anticipate all combinations of data and processes. Consequently, issues will continue to be identified throughout implementation of the pilot program. Likewise, with full implementation, issues will continue to be identified as unique situations arise but, in all likelihood, will be less frequent and less severe than in earlier stages. As the system stabilizes and matures, the focus usually shifts from identifying defects to identifying desirable enhancements to the system.

Any reported issues should be assessed by the IT team immediately after problems are reported. A good practice is to assign a severity level to each reported problem.

A best practice is to ensure that an effective mechanism is instituted to inform higher levels of management of issues that are not addressed or resolved in a timely manner. Users' perceptions of the system in the early implementation can be negatively influenced if significant issues linger without resolution. Once that negative attitude sets in, it can be difficult to change users' perceptions and acceptance of the new system. The early stages of implementation are a critical time to ensure, to the extent possible, that users' expectations are met.

"Going live" and changing the procedures for daily operations happen during this phase of implementation of the new system. Some key components and other matters to consider during the implementation phase are highlighted in following section.

Putting the System into Routine Use

The new system is put in place, staffed, institutionalized, and used in routine daily jail operations. This phase also involves ad hoc problem-solving events; this requires careful planning. Unexpected problems may arise and require immediate solutions and input from a variety of users on the staff. Line staff can often be the first to identify new bugs, software glitches, or other user problems that require immediate attention. Communication with management is critical, and staff users must participate in problem-solving activities to share their knowledge of the workplace and how to best to phase in the new IT procedures.

Setting and Managing Expectations

Although the vision and expectations for new IT/MIS projects are primarily developed and communicated during the pre-implementation phase, it is critical that in the busy, stressful stage of implementation, there be recurrent reminders of the benefits and vision behind the new IT system and procedures. All senior and middle managers, as well as line staff, will need regular reminders of the rationale, vision, goals, and justification for the new IT procedures. It is common to forget these reinforcements during the implementation phase.

Commitment to the changes from the jail stakeholders can be lost if reinforcement of these messages occurs only at the beginning of IT implementation or if administrators are trying to justify a budget and are not willing to invest in the changes. Multiple communication channels also may provide and celebrate progress reports with all of the involved stakeholders. Top administrators should support the project by requiring review meetings to assess key progress and milestones and to regularly stress the benefits and vision behind new IT projects to jail staff, citizen advisory groups, and other stakeholders.

User Acceptance

Four major factors are critical in determining the degree of user acceptance. Supervisors and the transition team must carefully monitor these issues during the implementation phase:

- **Maintaining trust and buy-in with frequent communication.** The transition team and senior management must be active in building trust and commitment by using open and frequent communication

with line staff and other stakeholders. This may involve many strategies: periodic progress reports, memos, announcements of milestones achieved, and meetings. Line staff and middle managers should be encouraged to raise any questions, concerns, or suggestions and be allowed to participate and provide input. Jail leadership must continue to provide a vision of the direction and benefits of the new system, bolster staff morale, provide rewards, acknowledge milestones, and communicate progress toward the goals.

- **Ease of use.** User acceptance is tightly linked to user-friendliness and ease of use. A major component of the pilot implementation is to ascertain whether the new IT procedures and software are efficient enough and easy to use and to resolve any user problems. However, during the implementation phase, the introduction of the new system into routine operations in the jail provides a stricter test of the ease of use.
- **Time and workload demands.** The transition team must stay alert and maintain open communication with line staff to identify user problems quickly and to generate new solutions. Common problems include cumbersome screen designs, data scattered across different sources and screens, difficulties in locating the needed data, poorly designed management reports, and too many key-strokes to complete simple tasks. Thus, user acceptance can be influenced if the staff are experiencing workload problems. The possibility exists that in real-life conditions, the IT workload may be excessive. The transition team, as well as the supervisory staff, must be vigilant in monitoring staff workload, errors, signs of stress, and staff complaints during the go-live phase.
- **Effectiveness and usefulness of the system.** A further feature that influences user acceptance is whether the new IT system is helpful to staff in their work tasks and decisionmaking. If the new system provides effective support and high levels of reliability and validity, it will typically have a high level of user acceptance. A key feature, therefore, is the usefulness of the management reports and rosters provided by the IT system. User acceptance will be high if the scope and range of these reports has a good fit with the information needs of the staff, middle managers, and administrators.

Making Changes in Policies and Procedures

During the implementation phase, a sufficiently detailed and updated policies and procedures manual is critical and should describe staff tasks, rules, and new procedures for using a JMS. The transition team and unit supervisors must provide adequate documentation of new policies and procedures to staff who will be using the system. The policies and procedures manual will be thoroughly tested during the go-live phase and, if incomplete, will be updated. The transition manager and the implementation committee therefore must be alert to weaknesses or gaps in the documentation of the new IT procedures.

Any deficiencies in the policies and procedures manual may hinder training of staff in the new procedures. Another danger is that jail administrators may fail to assign sufficient staff hours to produce and write an effective MIS policies and procedures manual. These managers may underestimate its value and the time and effort needed to develop, maintain, and update the manual. Another common problem is the shortage of staff with appropriate writing skills. Yet, adequate policies and procedures are critically important in the design and implementation of a new jail system, both in terms of procedure and for liability protection.

Considerations in the Transition and Data Conversion

Cutover to a new system is a transition that requires careful planning and coordination of the efforts of both the IT and the jail staff. Typically, cutover involves the movement of data from an existing automated system to a new or improved automated system. To accomplish this in an orderly manner, all of the data from the old system—particularly for inmates in custody and for historical inmate data—must be transferred to the database of the new system. A data-conversion plan and cutover strategy is a best practice that ensures this transition is smooth. There will always be disruptions when a new system, and related policies and procedures, are introduced. However, a well-planned cutover can minimize the degree of disruption.

Data conversion and cutover to production should include the following activities:

- Developing a conversion plan and design.
- Preparing conversion programs and scripts.
- Completing any required data cleansing and preparation.
- Performing a simulated conversion and check for errors.
- Preparing a cutover plan, including contingency planning.
- Rehearsing the cutover process.
- Providing adequate technical support staff for the cutover.

Because inmate data derived from prior jail stays is so important, it is usually not advisable to implement a new jail system with no historical data. Because historical data are so necessary in supporting jail decisionmaking, data conversion from prior systems is typically mandatory. If data conversion from the old system is too difficult or expensive, there are less desirable alternatives. In some jurisdictions, the old system is maintained for an indefinite time to mine the historical inmate data until the new system has been operational long enough to be a reliable source of prior-stay data. Implementation of this cutover strategy is more efficient and less cumbersome but provides an alternative to full data conversion.

System Use and Quality Assurance

Assuring the quality of the jail's IT/MIS system is the responsibility of staff supervisors—to ensure high-quality staff training and competency and to identify and resolve any gaps in the staff's skill sets during the implementation phases. In the early implementation phase, staff must learn new skills to use the new IT procedures. A skills gap is a normal occurrence and may be anticipated at the earliest stages of implementation. Transition teams often develop temporary contingency plans (e.g., extra supervision and repeated training) to cope with skills deficiencies early in the process; this must be managed appropriately and may lower staff morale and commitment as well as increasing the liability resulting from user errors. A second and opposite problem as staff become more expert is having a skills surplus, which can occur when the new IT methods are mastered. In some cases, this surplus may lower the quality of work because of boredom, feelings of stagnation, or job impoverishment when

most of the major decisions are automated. Supervisors must carefully monitor staff for such problems and take corrective action to reassure and retrain them.

Quality is also a function of effective supervision. This may involve monitoring staff, making evaluations, and spot-checking for data and decision errors. Supervisors cannot ignore these issues because they are critical to maintaining high-quality data, analysis tools, and fewer errors in the IT system. Findings from such supervision can be accumulated in statistical reports and provided as feedback to line staff, can guide the assignment of appropriate managers for job performance issues, and can point to corrective actions. A sobering finding is that IT capabilities are often dramatically underutilized in jails.

Supervision may also include basic process-evaluation methods during the implementation phase to ensure that staff are positively motivated and are using the new IT procedures correctly. Supervisors must ensure that staff are not undermining IT procedures by streamlining, cutting corners, or engaging in other forms of sabotage, and whether IT capabilities are being used to the fullest extent. Process evaluation is a thorough examination of the manner in which the IT/MIS system is implemented, how competent the staff are, and the overall integrity in using the system.

Jails spend an enormous amount of money and time to collect relevant data on inmates and their behaviors and jail operations. The large databases that evolve in busy jails are an enormously valuable resource for managers when monitoring jail operations and performance outcomes, and when analyzing policies. Quality assurance also focuses on the quality of the data entered into the MIS and to minimizing data errors. In the implementation phase, the transition team should meet to identify, discuss, and correct any data quality and data verification issues. Data quality is enhanced when jails verify and spot-check the data regularly; however, staffing shortages and workload demands impose severe obstacles. Some large jail systems include routine data quality control checks on a monthly or quarterly basis, although these quality control measures typically have been externally imposed by court orders.

Post-Implementation Phase

The management of implementation does not end with the transition of new procedures into routine operations. Several critical issues emerge following the introduction of a new system. These tasks deal with the following questions:

- Have the new IT procedures achieved the desired goals and outcomes? Are they working as expected?
- What longer term impacts have the new procedures had on the jail?
- Is the system a good fit and in good alignment with the jail? Are additional adjustments required?
- Over the long term, have there been any unexpected forms of resistance, sabotage, or loss of integrity in the staff's use of the system?

Such questions cannot be answered until the new procedures have had a chance to achieve their expected impact and not until the organization and staff have adjusted to the new system. The issues identified in this section are critical in the post-implementation phase.

Developing Feedback Loops

Post-implementation feedback loops are needed to identify and resolve system problems. To design an effective IT system, it is critical that all stakeholders are involved and have input, particularly if they are end users. Feedback and participation from staff at all levels should enhance commitment and buy-in across the organization. Specific strategies may be instituted for the following processes:

- Establishing effective mechanisms to collect complaints or weaknesses from IT users across the jail (e.g., security, classification, booking, and intake of inmates).
- Developing management reports to provide IT users' feedback to all major units of the jail and accurately monitor workloads, work quality, and trends relevant to that unit.
- Providing routine reports from unit supervisors to IT staff regarding their unit's information needs, complaints, and suggestions.

Ongoing Training Strategies

With normal rates of staff turnover in jails, and the rapid evolution of IT technology, ongoing training is a necessity. In the post-implementation phase, several strategies may be used to further the training, skills, and competency of the staff who use the IT procedures:

- Systematic job rotation involving the use of IT procedures, coupled with appropriate supervisory reviews, should promote the skills of IT staff and complement their formal training.
- Supervisor training is also important. Incompetent IT supervisors can severely erode the skills of an IT unit. Conversely, highly trained IT supervisors can substantially upgrade the overall quality and expertise of the IT unit and also provide training to other units in the jail that routinely use IT procedures.
- As noted earlier, quality assurance and problem-solving groups can be invaluable in identifying competency gaps in the staff and ways to enhance the jail's IT/MIS capabilities. The IT supervisor can be instrumental in organizing these groups, which identify skills gaps and training needs, and provide a forum for discussion and correction of any IT problems.
- Error-detection procedures are a critical component of IT/MIS training and skills building. Several strategies are available. Conducting a full review of error-detection procedures is beyond the scope of this document but detailed treatments of this topic are available.⁷

Skills development and continuous learning can also be achieved with *informating*⁸ feedback, in which relevant management reports are designed for each IT job and are routinely provided to staff (e.g., monthly).

⁷Reason, James T. 1990. *Human Error* (New York: Cambridge University Press).

⁸*Informating* is the process that translates descriptions and measurements of activities, events, and objects into information. Through this process, these activities become visible to the organization.

Managing Technology Upgrades

Technology upgrades occur throughout the life of the information system. In recent years, the rate of change in information technology has accelerated. IT changes may involve any combination of new or updated hardware and software. Hardware upgrades may involve desktop PCs, back-end servers, or introduction of a new peripheral device, such as a bar code reader or a magnetic card reader. In other instances, an entirely new end-user device (e.g., a wireless handheld PDA) may be introduced.

As with hardware, software upgrades occur at several levels. An update to the operating system or tools on either the PC or back-end servers may be required. The database may need to be upgraded to a current version of the relational database management system. New or improved interfaces may require software upgrades. The timing and frequency of IT upgrades should be based on several factors, including the impact on users, required changes to the jail application software, how urgently the changes are needed, and the benefits of the upgrade. As with all jail system activities, the process will require planning, management, and technical and staff support during post-implementation. Consequently, it may make sense to make this process routine by bundling new releases and limiting the frequency of upgrades. There may be occasions, however, when a technology upgrade is required to resolve a problem and must be executed immediately.

Summary

As with the private sector, jail organizations are beginning to realize the potential of information technology to improve business processes and reduce costs. The trend is positive; more jail agencies are embracing new IT systems and are using them effectively in their organizations. The caveat is to avoid being on the leading edge of technology or at least ensure that a proof-of-concept process has been successfully completed before deploying the new system.

CHAPTER 8

REQUESTING PROPOSALS FOR INFORMATION SYSTEM DEVELOPMENT AND SELECTING VENDORS

Introduction

The request for proposal (RFP) process is the primary mechanism with which jails acquire and implement any major project, such as a new automation system. In this process, a jurisdiction prepares a formal solicitation that is released to the vendor community to obtain proposals for a jail information system. This chapter describes the best practices involved in RFP development, RFP content, and the vendor selection process. The focus is on best practices to ensure that the jail agency obtains a cost-effective system solution that meets the agency's needs.

An RFP is used when requirements are known but the jail system solution and implementation process may vary, thus requiring the proposer to provide a system solution and the approach to its implementation. Price is important, but proposals also will be evaluated and selected on the basis of other criteria to ensure the most desirable solution for the jail.

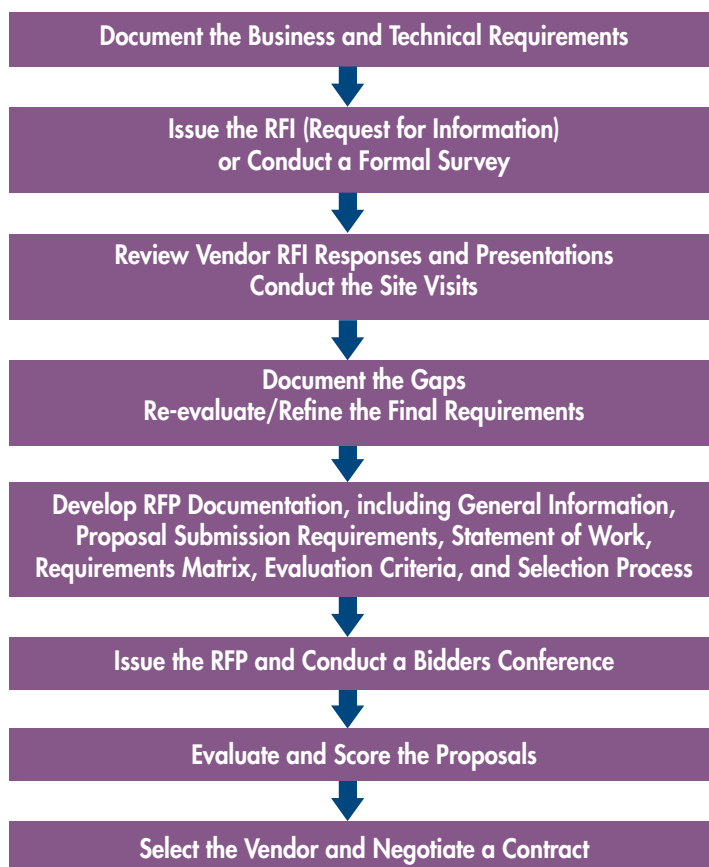
There may be constraints on the RFP process that are specific to local government procurement rules or other considerations for specific jail system procurements that may dictate a somewhat different RFP process.

Managing the RFP Process

Managing the RFP process is simply a continuation of the processes identified in earlier chapters for managing the development of jail information systems. Ideally, the RFP process represents the culmination of thorough planning and analysis that have already occurred. The participation of other departments within local government will vary and will be based on the size and structure of the government entity. In any case, it is important that the jail, under the auspices of the steering committee or a related oversight group, manage the RFP process and not defer to other local government entities that have the same stake in the outcome of the RFP process.

The steps involved in the RFP process are shown in exhibit 8.1. Although some steps are optional and depend on the degree to which business requirements have already been defined and documented, these steps are usually required, either formally or informally, to select a jail system vendor and establish a contract to implement and maintain the system.

EXHIBIT 8.1 MANAGEMENT OF THE REQUEST FOR PROPOSALS PROCESS



Prerequisites When Preparing RFPs

Before preparing the RFP document, there are several prerequisites, as illustrated in exhibit 8.1. Most critical of the prerequisites is having a clear understanding of the scope and documentation of the business functions to be performed by the jail system. How to define the requirements was described in some detail in chapter 6. This functional requirements document (FRD) provides the starting point for RFP preparation. Because of the passage of time, it may be necessary to augment or modify the functional requirements. The functional requirements will need to be supplemented with technical, operational, and transitional requirements that are not addressed in the FRD.

Transitional requirements also should be specified in the RFP. These requirements relate to factors such as data conversion in the transition from the current to the new system. Other transitional requirements may be defined and will relate to issues such as training, system documentation, and deployment of the system. Transitional requirements should be reflected in the tasks and deliverables documented in the statement of work (SOW; discussed in a later section of this chapter).

Components of the RFP

Several factors should be kept in mind during preparation of the RFP document. Although not an exhaustive list, these considerations include answers to the following questions:

- How time critical is the implementation of the jail system?
- What are the minimum mandatory requirements for any vendor?
- Are there opportunities for improvement in processes and practices?
- What level of staff resources and expertise will be provided by the jail?
- Are the implementation constraints well understood?
- Are expectations of the number of users and system growth documented?
- Are budget constraints and funding sources identified?

The primary RFP components consist of the following:

General Information

The general information or introduction section of the RFP usually consists of a combination of information specific to the jail system solicitation and boilerplate information common to all RFPs in the local jurisdiction. The background, purpose, overview, terms and definitions, and minimum mandatory requirements should be developed for the specific RFP. Minimum mandatory requirements serve as pass/fail criteria and provide potential proposers a quick basis on which to determine whether they should respond to the RFP.

A sample contract may be referenced in this section and attached to the RFP as an appendix. Other items in this section may provide customized information but will consist primarily of boilerplate terms and conditions that are specific to the local jurisdiction. The procurement and/or contracts staff will play a key role in the development of this and the next section of the RFP.

Proposal Submission Requirements

This section identifies the specific format and contents expected in the proposer's response to the RFP. If the vendor's response does not conform fully to submission requirements, the evaluation score may be significantly reduced or the proposal may be disqualified. Typically included in this section of the RFP are the following components:

1. **Proposer capability.** Responses will be required to describe the proposer's qualifying experience as a jail system vendor, provide references, and document the qualifying experience for the proposed project manager and key technical staff. The response also will provide references for sites where the vendor's system has been installed. Documentation of the company's financial capability and viability also may be required.
2. **Management approach.** This component will document how the proposer will manage and execute the project. The vendor will be required to present a detailed workplan including time frames, resource assumptions, and the rationale for staff assignments. The management approach section

of the proposal also should include an organization chart, risk mitigation and management, and the proposer's quality control plan.

3. **Proposed system solution.** This is a critical section of the response that should explain in detail how the proposed system will address each of the functional, technical, operational, and other requirements named in the RFP. The proposer should present a development, implementation, and support strategy consistent with the tasks and deliverables identified in the SOW. Each specific requirement in the RFP should be acknowledged in the response, including an explanation of how the requirement will be met by the proposed solution.
4. **Cost proposal.** Proposers must submit a pricing schedule that includes all cost components related to software licensing, development and implementation services, maintenance, and hardware (as applicable). It is important that all cost factors are identified in the proposal to ensure that the total cost of ownership can be assessed as part of the evaluation process. The cost proposal should include the cost of each task/deliverable as identified in the SOW. A budget narrative that identifies all pricing assumptions should be a required component of the cost proposal.

To the extent feasible, costs should be a fixed price to minimize the risk of escalating costs. However, some deliverables (e.g., training and interfaces) will be bid on a time-and-materials basis with an hourly/daily rate and a ceiling price. RFP requirements for withholds or holdbacks (percentage paid only after user acceptance) until successful implementation of the jail system also should be addressed in the cost proposal.

5. **Required contract forms.** Certain contractually required forms and information must be submitted by the proposer; these vary from one jurisdiction to another. Part of the submission is typically the acceptance of the terms and conditions identified in the RFP or identification of the terms to which the proposer takes exception.

Statement of Work

The SOW in the RFP defines the scope of work to be performed by the vendor. All of the required tasks and associated deliverables to develop, implement, and support the jail system are defined in the SOW. The tasks presented in the SOW will vary from RFP to RFP and will be based on the existing system environment of the jail and the level of support required of the vendor to modify, implement, and maintain the proposed jail system. Although the proposed system may require some customization to support the defined functions and/or interfaces, most of the defined services in the SOW will likely consist of those supporting installation, testing, training, the go-live stage, and post-implementation maintenance. The SOW will be based on the defined functional, technical, operational, and transitional requirements.

The SOW will be prepared collaboratively by jail and IT staff to ensure that all tasks and deliverables required of the vendor have been clearly defined and are included in proposers' responses to the RFP. Some typical tasks defined in the SOW for a jail system are as follows:

- Project planning and management.
- Confirmation of requirements.
- Installation of software in the test environment.

- Configuration and/or customization of software and interfaces.
- System testing and user acceptance testing support.
- Train-the-trainer and end-user training.
- Data conversion and data upload.
- System cutover and go-live support.
- Final system acceptance.
- Maintenance and ongoing support.

Most of these SOW tasks are self-explanatory. Inclusion of a final system acceptance is a best practice to ensure that implementation of the jail system is successful. This includes specifying a time frame, such as 60 days, in which the system will need to function with no major defects. Upon completion of this time frame, a hold-back payment would be made to the vendor. A final system acceptance test reduces the risk to the jail of implementation problems and a vendor with less incentive to correct problems after the go-live stage.

Each task defined in the SOW should be accompanied by a deliverable. The deliverable represents the product to be provided or the outcome of a completed task, for example, the project plan, the installed software, training and training materials, or the accepted information system. Deliverables typically represent pay points for the vendor and, when well defined, help to avoid disagreements with the vendor about when a task has been successfully completed and accepted.

Requirements Matrix

The requirements matrix provides a means of presenting, clearly and concisely, all of the functional, technical, and other requirements in the RFP that the vendor must address. The matrix supports the proposal evaluation process by documenting each requirement using a unique reference number and designating the requirement as mandatory or optional. Additional columns in the matrix provide for a vendor's response of 'yes' or 'no,' indicating whether the vendor can meet the requirement, and providing details on how the vendor will meet the requirement with the proposed system. It is important that the requirements be defined as specifically as possible. The completed requirements matrix also supports the evaluation scoring process. A predefined evaluation score sheet for each mandatory and optional requirement is developed as part of the initial evaluation process.

As with the SOW, the requirements matrix should be a collaboration between the jail experts and IT staff. A completed requirements matrix helps the proposer and jail project team to avoid misunderstandings. The matrix also confirms the jail system's capabilities during reference checks, and during demonstrations of the software, as part of the final evaluation and selection process.

Evaluation Criteria and the Selection Process

This section of the RFP provides the vendor community with a detailed description of the evaluation process to be followed by the evaluation committee and the basis on which to select a vendor. One technique used in the evaluation process is to pass or fail each proposal on the basis of minimum mandatory requirements specified in the RFP. The evaluation also provides specifics on disqualified proposals that have failed to adhere to the required format and contents defined in the proposal.

In addition to defining the basis for disqualifying proposals, this section of the RFP identifies the evaluation criteria and the weighting of each criterion. Criteria for a jail system evaluation typically include the following:

- Proposer qualifications.
- Functional and technical requirements of the proposed system.
- Approach to the provision of the required services.
- Cost proposal.

There are no hard and fast rules for weighing the factors for each criterion. Proposer qualifications may be weighted in the range of 20–25 percent. This criterion consists of an assessment of the vendor’s relevant experience and capabilities, based on the verification of references and resumes of the proposed staff. A review of the vendor’s financial capability also may be part of this evaluation.

The extent to which the vendor meets the mandatory and optional requirements is an important second criterion that may be weighted as much as 40–50 percent of the total evaluation score. This score is determined by analyzing and scoring the response to each specific requirement documented in the requirements matrix. The approach to the provision of required services is a third criterion that may be weighted in the range of 10–20 percent. This scoring is based primarily on the comprehensiveness and methods presented by the proposer in response to the SOW.

The last criterion is the cost proposal, which is typically weighted in the range of 30–40 percent of the total evaluation score. Although the cost of the system is clearly important, it is risky to weight the cost too highly to the detriment of other factors, such as how well the system meets the requirements, capabilities, and experience of the vendor and proposed staff. For each cost criterion, maximum points are assigned to the proposal with the lowest overall costs, based on the inclusion of all one-time and recurring cost factors. This ensures that the cost assessment is based on the total cost of ownership.

Evaluating Proposals and Vendor Services

The evaluation and selection process is just as critical as the RFP development process in ensuring the successful implementation of a jail system. The vendor—selected to install and support your system for a minimum of several years—becomes an important business partner in the jail’s operations. The first major step is releasing a comprehensive RFP with clear and concise system requirements and services for the jail system. The next major step is to ensure that the best vendor is selected. The evaluation committee should be selected early in the process; it typically consists of five to seven participants. The committee should include a balanced mix of jail experts, technical staff, and procurement staff. Jail representatives on the committee should include jail staff with a history and understanding of the jail system requirements. Members of the user groups previously identified are good candidates for the evaluation committee. There should be representation on the committee by the procurement or contracts unit that was involved in the RFP process and will participate in contract negotiations with the selected vendor. It may also be appropriate to include an evaluation team member from outside the local jurisdiction to provide an objective, external perspective.

The evaluation process consists of the following steps:

- Plan the evaluation, including the selection and orientation of team members.
- Document the detailed evaluation process and criteria in the RFP.
- Prepare detailed evaluation scoring instruments.
- Conduct an initial review of proposals to determine any disqualifications.
- Review the proposals thoroughly and score each proposal, including:
 - Checking the proposer’s references.
 - Rating each proposal and completing the evaluation scoring instruments.
- Reaching consensus on evaluation scores and rank ordering the proposals.
- If appropriate, interviewing the finalists and seeing demonstrations of the software.
- Revising scores, based on the interviews and software demonstrations, if applicable.
- Selecting a vendor and beginning contract negotiations.

Any number of variations on this process may be appropriate for a particular jail, depending on the procurement policies and procedures of that jurisdiction.

Finalizing the Evaluation and Selecting a Vendor

When evaluation scoring is complete for each qualifying proposal and a consensus score has been reached, proposals are then rank ordered on the basis of composite scores. At this point, a clear winner may be evident and selected.

Another option is to select the top two or three proposers and conduct a final evaluation process. In this step, the selected proposers would be given an opportunity to meet with the evaluation committee. During the session, the proposer is interviewed and the software can be demonstrated. Once it is confirmed that the proposed system can meet the RFP requirements, evaluation scores can be adjusted if necessary and the ranking of the proposals can be finalized.

The evaluation results should clearly document the strategy for addressing any protests or disputes by the vendor community. Documentation should include completed preliminary scoring instruments and the final consensus scoring documents signed by all members of the committee. The documentation also should include any working documents used in the evaluation process, such as results of reference checks.

RFP Best Practices

This chapter described the RFP development and proposal evaluation processes. This final section identifies and presents, in no particular order, the RFP best practices for procuring a new jail system. Some of these practices have been highlighted in earlier sections; others were mentioned but not necessarily emphasized. Best practices include the following:

- Include a comprehensive list and detailed description of the functional, technical, and operational requirements in the RFP.
- Create an RFI or less formal survey that allows reviewers to examine existing system offerings in the marketplace before the RFP was finalized.
- Identify each requirement as mandatory or optional.
- Require, in the vendor references, those sites where the software has been installed.
- Identify all professional services required of the vendor in the SOW, providing clearly defined tasks and deliverables.
- Include a final acceptance task in the SOW that requires 60 days of operation with no significant defects, and a corresponding hold-back of some funds until this task is successfully completed.
- Require completion of a standardized, detailed cost proposal, including all one-time and recurring support costs as well as all pricing assumptions, to ensure that total cost of ownership can be assessed.
- Conduct a bidders conference after the RFP is released, but before the submission of responses, to ensure that all potential proposers understand the proposal submission requirements.
- Define a system infrastructure in the RFP requirements that is consistent with current standards, such as Web accessibility, open interfaces that provide long-term flexibility, maintainability, and interoperability with third-party tools (e.g., report-writing tools).
- Select an evaluation team early in the process that includes members with complementary skill sets, including expertise in jail business functions, IT/MIS systems, and procurement.
- Consider including an external resource as part of the evaluation team.
- Evaluate proposals with a balanced approach rather than overemphasizing costs.
- Prepare an evaluation plan and detailed scoring instruments to ensure consistent, fair ratings by the evaluation team.
- Consider the use of vendor interviews and software demonstrations before finalizing the vendor selection.

Summary

There is no single correct format or specific set of components that applies to all jail systems in all jurisdictions. Most local jurisdictions have specific regulations and exhibits that must be included in all RFPs. Nonetheless, certain components and best practices should be incorporated in the development of any RFP that solicits proposals for a jail system.

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APPENDIX A

WHAT DRIVES INFORMATION NEEDS?

LEVEL 1: INFORMATION ON ROUTINE INMATE TRACKING

Questions to answer	Information to collect	Technique to use	When
Basic Inmate Information			
Who is being arrested?	Inmate demographics	Arrest forms/Interview	Intake
When are they being arrested?	Dates/Times	Arrest forms	Intake
Where are they being arrested?	Address, City, State ZIP	Arrest forms	Intake
Where do they come from?	Birth City, State, Country	Interview	Intake
Where do they live?	Address, City, State ZIP	Documents/Interview	Intake
What is their nationality?	Nationality	Interview	Intake
A citizen of which country(ies)?	Citizenship	Interview	Intake
Do they have a driver's license?	Valid DL number/State	Interview	Intake
How was inmate positively identified?	Biometrics	Livescan/Fingerprint cards/ Facial recognition	Intake
Charge Information			
What types of charges?	Statute/Description/Degree/Level	Arrest forms/Other paperwork/Databases	Intake
Are there holds/detainers?	Holds/Detainers/Who/Dates	NCIC	Intake
Are there any warrants?	No. of warrants/Agencies	NCIC	Intake
What is the primary charge? Status?	Category of charge/Status	Policy	Intake
Employment Information			
Are you employed?	Employer information	Interview	Intake
Who? Where? Contact information?	Address/Telephone number	Interview	Intake/Classification
Unemployed? Veteran? Disabled?	Yes, No, NA	Interview/Past report	Intake/Classification
Student? Where?	College, high school, other	Interview	Intake/Classification
Contacts			
Contact whom?	Family/emergency numbers	Interview	Intake
Medical Information			
Any injuries?	Type of injury	Interview/Observation	Intake
Any illnesses?	Type of illness	Interview/Observation	Intake
What is arrestee's medical status?	Medical status	Interview/Observation	Intake
Intake medical screening questionnaire	(Developed by medical provider)	Interview/Observation	Intake

Questions to answer	Information to collect	Technique to use	When
Mental Health Information			
Any suicide potential?	Dates/times of attempts or inclinations determined	Interview/History	Intake
Any mental illness reported?	Dates/times of doctor visits or hospitalizations	Interview/History	Intake
Any psychotropic drugs?	Drugs prescribed	Interview/History	Intake
Substance abuse (alcohol/drugs)?	Drug/alcohol usage/amounts	Interview/History	Intake
Criminal History			
Past incarcerations?	Verify history of past arrests/convictions	NCIC/Local court databases	Intake/Classification
Past convictions?	Verify history of past convictions	NCIC/Local court databases	Intake/Classification
Past escapes or attempts?	Verify history of escape attempts	NCIC/Local court databases	Intake/Classification
Incarceration Behavior History			
What was prior institutional behavior?	Prior incarceration behavior	Databases/Interview	Classification
Current/prior need to keep separate from other inmates?	Potential enemies in custody	Databases/Interview	Intake/Classification
Was/is inmate affiliated with a gang ?	Gang name	Databases/Interview	Intake/Classification
Family Ties			
What is your marital status?	Single, married, divorced, widowed	Interview	Intake/Classification
Do you have children?	Number/ages of children	Interview	Intake/Classification
Community Ties			
Do you own a home?	Own/rent home or Homeless	Interview	Intake/Classification
What is your religious affiliation?	Religion of choice or None	Interview	Intake/Classification
What is your education level?	Highest grade achieved	Interview	Intake/Classification
What is your military status?	Current or Veteran	Interview	Intake/Classification
Inmate Property			
What personal property came in with inmate?	Inventory of items surrendered	Face-to-face inventory	Intake
What money came in with inmate?	Amount of cash	Face-to-face inventory	Intake
Where is property stored?	Property location/Storage type	Database	Intake
Was car towed? To where?	Type of car/Towing company	Arrest documents	Intake
Whom will you release property to?	Names of individuals	Interview	Classification
Who collected property and when?	Receiving staff	Paperwork/Database	Intake
Who released inmate's property?	Releasing staff (name, date, time)	Paperwork/Database	Release
How many people came in with no money?	Zero balance in account	Database	Intake

Questions to answer	Information to collect	Technique to use	When
Release Information			
Who and how do inmates get released?	Inmates released/Types of release/ Charges	Paperwork/Database	Releasing
Within what time frame do inmates get released?	Release dates/times	Automated or manual entry	Releasing
Who and how many inmates got transferred to other jurisdictions?	Inmates transferred and dates/times	Automated or manual entry	Releasing
Who released the inmate?	Officer release information	Automated or manual entry	Releasing
Who transferred the inmate?	Officer transfer information	Automated or manual entry	Releasing
Were all money and property returned?	Signature of receiving person	Automated or manual entry	Releasing
Trends			
(If above information can be collected)			
Total bookings for any time period?			
Total releases, by type, for any time period?			
Average daily population?			
Average length of stay, by type of population?			
Growth pattern within a timeframe?			

LEVEL 2: INFORMATION ON DAILY OPERATIONS IN LONG-TERM INMATE FACILITIES

Questions to answer	Information to collect	Technique to use
Needed Programs		
What is education level of inmate population?	Level of education: High school/vocational/college	Interview
What drug/alcohol use and how much?	How much/What type	Interview
What treatment programs were attended?	Programs/Dates	Interview
Are there domestic violence issues?	Charges/Marital history	Interview
Are there parental responsibilities?	No. of children	Interview
Whom do they live with?	Address/Responsible party	Interview
Program Completions		
How many inmates entered each program?	Admission dates/No. of inmates per program/ Program categories	Program reports
What were the reasons for entering programs?	Program requirements/Reasons	Program reports
How many inmates completed each program?	Types of programs completed/No. of inmates/Dates	Program reports
How many inmates failed to complete programs, and why?	Types of programs not completed/Dates	Program reports
How many referrals were made, and what types?	Referral types/Dates	Program reports
What is the capacity of each program?	Capacity of each program	Program reports
How many staff are assigned to each program?	Staff assigned to each program	Program reports

Questions to answer	Information to collect	Technique to use
Institutional Adjustments and Behavior/Rule Violations		
What were the major violations and types?	Major violations/Types	Disciplinary report (DR) process
What were the minor violations and types?	Minor violations/Types	DR process
How many of each type were sustained?	Outcome of hearing	DR process
How many violations were overruled?	Outcome of hearing	DR process
How many violations involved contraband?	Contraband received/No. of violations with contraband	DR process
What types of contraband were there?	Types of contraband	DR process
What areas of the jail have high levels of violations?	Housing locations of inmates with violations	DR process
Which staff wrote disciplinary reports, and when?	Report writers/Dates and times	DR process
How many inmate assaults were on inmates?	No. of assaults/Types of violations	DR process
How many inmate assaults were on staff?	No. of assaults/Types of violations	DR process
Dietary Needs		
How many inmates require a religious diet?	No. of inmates with religious diet/Diet types	Interview
How many inmates require a medical diet?	No. of inmates with medical diet/Diet types	Interview
How many meals were served, by diet category?	No. of meals/Times diet meals served	Calculation
Facility Movements/Housing		
What were the movements/activities in the jail with regard to housing?	Housing locations/relocations and Dates/Times	Data entry all levels
Facility Movements/Events		
What types of events did inmates request/attend?	Event types/Dates/Times	Data entry all levels
If events were visitations, who were the visitors?	Visitor names/Relationship to inmate/Address/Dates/Times	Data entry all levels
If events were visits by professionals, who were clergy/attorneys/other professionals?	Visitor information and Dates/Times	Data entry all levels
How long did the events last (applies to all events)?	Event start/end dates and times	Data entry all levels
Commissary		
How many inmates are indigent?	Inmate banking balances	Inmate banking
What are the average weekly commissary purchases?	Types of purchases/Dollar amounts per week	Inmate banking
What is the amount of revenue in the jail trust account?	Dollar amount of purchases	Inmate banking
Inmate Accounting		
How many inmates have active accounts?	All deposits/withdrawals for inmates	Data entry/Report
How much money is spent in the commissary?	All items from commissary/Dollar amounts	Data entry/Report
Types of items purchased?	Category of each item purchased	Data entry/Report
How much money is deposited for inmates, and by whom?	Depositor names/Deposit amounts	Data entry/Report
How is inmate welfare money spent?	Expenditure categories	Data entry/Report
What fees are collected, and how much?	Fee categories and amounts	Data entry/Report

Questions to answer	Information to collect	Technique to use
Housing Assignments		
How many housing assignments are made per timeframe?	No. of inmate housing assignments	Report driven
How many inmates were mis-housed?	Housing type/No. of inmates/Housing plan	Report driven
How many inmates are kept separate from other inmates?	"Keep Separate" information	Report driven
How many inmates are in each category of housing?	No. of inmates/Housing categories	Report driven
How many inmates are boarded out?	No. of inmates boarded out/Housing categories	Report driven
How many inmates are boarded by other agencies?	No. of inmates boarded by other agencies/Housing categories	Report driven
What are gang member locations and affiliations?	Inmate housing locations/Gang affiliations	Report driven
Inmate Grievances		
What types of grievances were filed?	Types of grievances/Dates	Paperwork/Data entry
How many grievances were sustained?	Resolution of grievances	Paperwork/Data entry
How quickly were grievances addressed?	Timeframe for resolution of grievances/Dates	Paperwork/Data entry
Health Information		
When was initial medical screening completed?	Medical questions designated by provider/Date/ Data-entry person	Interview/Observation
Was a followup screening required?	Secondary questions asked	Data entry/Report
When was physical completed?	Date of physical	Data entry/Report
What types of medical issues are prevalent in the jail?	Categories of medical issues	Data entry/Report
When were issues identified?	Dates of diagnoses	Data entry/Report
What types of medication are being distributed?	Types of medication delivered	Data entry/Report
When did each inmate first receive medication?	Date/time of medication	Data entry/Report
How many doctor/nurse/hospital/lab visits were requested/ required?	Type of visit/Who visited	Data entry/Report
How many outside doctor visits were required?	Number of transports to other providers/Dates/Times	Data entry/Report
Transportation		
How many inmates were transported outside the facilities, by category?	No. of inmates transported/Transportation types/Dates	Report driven
How many inmates were transported to court?	No. of inmates transported/Transportation types/Dates	Report driven
Were there any security issues with transports?	Event information	Report driven
Who transported personnel?	Transport company information and Dates/Times	Report driven
Court Information		
Who is going to court?	Inmate names/Judge names/Court type	Interface with courts
How long is their court process taking?	Dates of admission/Dates of hearings/Dates of sentences	Report driven
Who is eligible for different types of releases?	Charge levels/Community ties information/Substance abuse information	Report driven
Who was released from court?	Inmate names/Release reasons/Dates	Report driven

LEVEL 3: INFORMATION ON DAY-TO-DAY OPERATIONS DECISIONMAKING

Questions to answer	Information to collect	Technique to use
Corrections Staffing		
How many staff are scheduled, and where?	No. of staff scheduled to work/Where	Report driven
How many staff report to work?	No. of staff who report to work	Report driven
How many staff are on leave?	Types of leave taken	Report driven
What are the absence patterns of staff?	Staff leave/Dates	Report driven
What are the scheduling patterns?	Changes made in scheduling	Report driven
How many new staff were hired?	No. of staff hired/When/Job titles	Report driven
How many staff retired or were terminated?	No. of staff retired/terminated/When/Job titles	Report driven
What was the amount of overtime used, and why?	Hours of overtime used/Who/When/Why/Job titles	Calculation
What was the payroll amount and breakdown?	Staff rates of pay/No. of hours	Calculation
Resources		
How was the budget spent?	Dollar figure of items ordered/received	Calculation/Report
How many products of each category were purchased?	No. of items purchased/Categories of items	Calculation/ Purchase orders
How many products of each category were used?	No. of items in warehouse or in stock	Inventory on hand
How much was spent on products by each housing unit/facility/agency?	No. of items bought/Dollars spent by each housing unit/facility/agency	Calculation
Who were the vendors, and what types?	Names of vendors/Types	Purchase orders/ Report
How much was spent per vendor?	Vendor purchase order totals	Purchase orders/ Report
Maintenance		
What were the types of maintenance issues? What is outstanding?	Maintenance categories/Current status	Maintenance tracking
What were reasons for maintenance issues?	Causes of maintenance issues	Data entry/Report
How much was required for repairs?	Cost of materials	Data entry/Report
What were the areas requiring facility repairs?	Locations of maintenance issues	Data entry/Report
How many cells were out of service?	Cell designations	Data entry/Report
How many locks were out of service?	Door designations	Data entry/Report
What is the equipment inventory?	All current equipment over \$XXX	Data entry/Report
What is the purchase history of the equipment?	Dates of equipment purchase	Data entry/Report
Preventative maintenance schedules	Service requirements/Dates performed	Data entry/Report
Fleet Maintenance		
What types of vehicles are in the fleet?	Makes/Models/Descriptions of vehicles	Purchase orders
What is their state of repair?	Status of vehicles in use	Maintenance requests
How many miles were traveled per vehicle?	Mileage per vehicle	Observation/Report

Questions to answer	Information to collect	Technique to use
Inspections		
What were the types and numbers of inspections completed?	Numbers/types of inspection	Report driven
How many and what type of health inspections were completed?	Numbers/types of inspection	Report driven
How many violations were received?	Numbers/types of violations/Dates	Report driven
Where did violations occur?	Locations of violations	Report driven
How long before violations were corrected?	Dates violations were corrected	Report driven
Quality Control and Compliance		
What data were incorrectly entered, when, and by whom?	Incorrect information entered and validated/Dates/ Data-entry staff	Report driven
When were data corrected, how, and why?	Dates correct information entered and validated/ Data-entry staff	Report driven
What reports were generated, and who requested them?	Dates reports generated/Staff who requested reports	Report driven
How many reports were generated past the required timeframe, and by whom?	Dates reports generated late/Types/Staff who corrected	Report driven
How many reports had to be returned for correction, what types, and by whom?	No. of reports returned/Types/Writer/Supervisor	Report driven
How many strip searches were done?	No. of strip searches	Report driven
How many headcounts were conducted?	No. of headcounts	Report driven

LEVEL 4: INFORMATION ON PUBLIC ACCESS AND SERVICES

Questions to answer	Information to collect	Technique to use	When
Public Information			
Who is in jail?	Name/Race/Sex/Date of birth	Query Level 1 data	Real time
	Inmate charges	Query Level 1 data	Real time
	Bond amounts	Query Level 1 data	Real time
How do I get them out on bond?	Content: Procedures for release and bond	Query Level 1 data/ Content online	Static data
What is the process for going to court?	Content: Process for court procedures	Content online	Static data
What happens while they are in jail?	Content: Summary of what happens to person in custody	Content online	Static data
How do I visit?	Content: Visitation schedule and process	Link to events online	Real time
How do I provide funds?	Content: Money and mail procedures	Content online	Static data
	Online money deposits	Content online	Real time

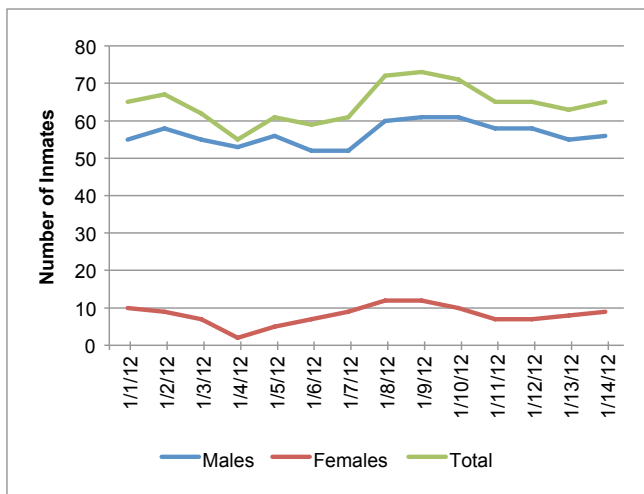
Questions to answer	Information to collect	Technique to use	When
Jail Information			
How many people are in jail and what types of jail?	No. of inmates in jail/Type of jail	Report on Level 1 data	Real time
How many people are booked in?	No. of people booked	Report on Level 1 data	Real time
How many people are released?	No. of people released	Report on Level 1 data	Real time
How many people go to state prison?	No. of people to state prison	Report on Level 1 data	Real time
Victim Information			
How are victims of inmates referred for help?	Content: Information on referrals for victims of inmates	Link to VINES online	Real time
Crime Stoppers			
How can crimes be reported?	Content: How to report information	Application	Real time

APPENDIX B

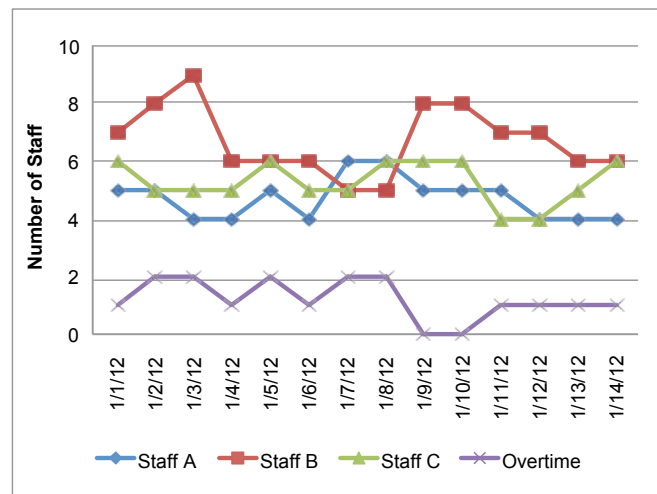
SAMPLE OF A DATA DASHBOARD

WHIMSEY COUNTY JAIL

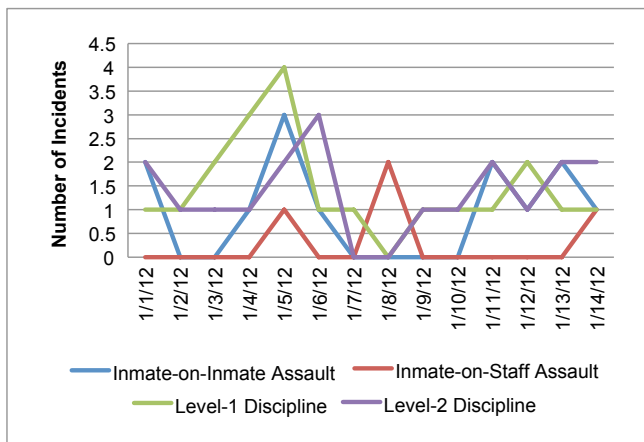
Average Daily Population in 2-Week Timeframe



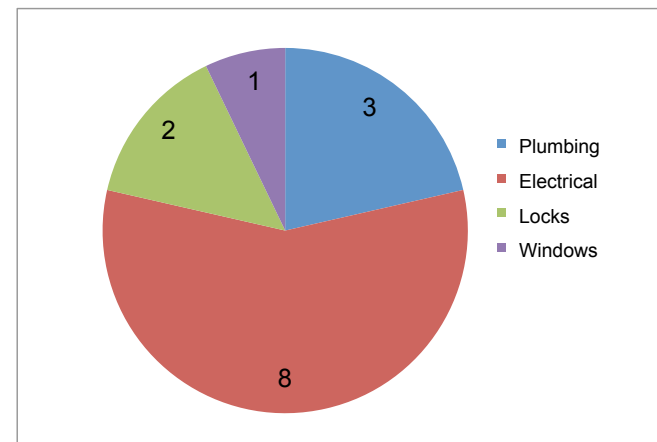
Staff Overtime in 2-Week Timeframe



Incidents in 2-Week Timeframe



Outstanding Maintenance Issues as of January 14, 2012



APPENDIX C

OVERCOMING THE HURDLES OF JAIL INFORMATION SYSTEMS

Frequently, inadequacies of the existing jail information system or lack of a jail data system are catalysts, along with other factors such as changes in technology, for the development of a new or replacement jail system. When identifying the new or enhanced data collection methods, the following hurdles intrinsic to information systems—automated or manual—need to be addressed.

Limited and Missing Functionality

One of the major user complaints about existing legacy jail systems¹ is that such systems often fail to address one or more of the critical business functions of the jail. Earlier generation jail systems tended to focus solely on core processes such as inmates' booking, release, and movements. To meet the comprehensive needs of the jail in today's environment, the jail system may require unique major functions.

Misused and Unused Functionality

Another problem with a jail system's current functionality is when it is available but not used. The system may only address part of what is needed and therefore may require a combination of automated and manual processes to complete the job. In other instances, a lack of training, particularly when using the system requires a high degree of training or there is a high degree of turnover for a specific job, both of which contribute to misused and unused functionality.

Poor Data Quality

The current jail system may fail to meet many of the agency's information needs, particularly at the management level, because of the poor quality of data and inadequate access to it. If the system allows important data elements to be optional rather than mandatory, the usefulness of the captured data for decisionmaking, at both the individual and aggregate levels, may be significantly diminished. For example, on the individual level, if special handling requirements and alerts are not captured, information important to the corrections officers on any subsequent arrests may not be readily available. On the aggregate level, any analysis or assessment of the jail population will be limited and less useful if the volume of missing data is significant.

In addition to missing data, there are data quality issues related to poorly coded data elements. If a data element lacks a list of values that address most possibilities, users may revert to code values such

¹ In information technology, a *legacy* system is one that is no longer supported, cannot be changed or updated, and usually is not Web-based.

as “other” an inordinate amount of the time. Another aspect of poor data quality is the use of free-form text fields rather than coded values. This not only makes it difficult to aggregate and analyze data but it is also an inefficient way to capture data. For example, a data element, such as the reason for release, can consist of a series of values that can be selected from a drop-down list of a free-form text field.

Poor User Interface

Many systems still in use have a poor user interface. The user interface consists of the screen displays that the user sees when navigating through the system. Current systems are designed with a graphical user interface (GUI), which provides users with a much more intuitive, easy-to-use system. Because of the wide acceptance and exposure to Web-based Internet applications, the learning curve for new jail staff is shortened significantly with current GUI interfaces of jail systems, in particular, those systems that allow the ordering of screens to match the workflow of the end user.

Lack of Capabilities for Ad Hoc Queries and Reports

A common complaint of both line staff and management is their inability to quickly retrieve the needed information from the jail database in a useful format. Although routine periodic reports, such as the court list or the daily booking list, can be predefined and generated in a useful format when required, other reporting requirements simply cannot be predicted in terms of frequency of use or specific data that are needed in detailed summary formats.

These types of ad hoc queries and reports have traditionally been difficult to build into jail systems. However, current systems with relational databases and more extensive tools for data retrieval have made it feasible to offer ad hoc report capabilities, which provide a more flexible approach to the generation of reports.

Poor Integration of Data-Capture Technologies

A common deficiency with existing jail systems is the failure to take advantage of current data-capture technologies. Scanning of wristbands for booking numbers (rather than keyboard entry), capture and presentation of inmates’ photos on inquiry screens, and the use of a single fingerprint at the time of release to match with the stored fingerprint database are examples of features now available in jail systems but missing from most legacy systems. Newer jail systems are built with an open architecture to support evolving data-capture technologies.

Limited Capabilities for Data Sharing and Data Exchange

Another common deficiency of older jail systems is the limited ability to interface and exchange data with other systems that support law enforcement, prosecutors, courts, other justice agencies, and treatment providers. The lack of interfaces with external systems results in inefficiencies that result from

redundant entry of data previously captured in another system, less timely updates with manual data entry than in a system-to-system data exchange, and reduced data quality when the same data are entered multiple times in different systems. The goal should be the entry of data only once by the originating agency and a data-exchange process to share data of interest with other departments.

Newer systems conform to the national justice data-exchange standards to facilitate the exchange of data with the jail's business partners at the local, state, and federal levels. Bidirectional interfaces are those that include the transmission of data to and from external agencies. Newer jail systems are designed and implemented with interfaces on a near-real-time or scheduled basis (which is unavailable in older systems); this results in improved workflow processes within the justice community.

APPENDIX D

CASE EXAMPLE: CONTRA COSTA JAIL, MARTINEZ, CA

Interview with Capt. Sean Fawell, Technical Services; David Pascoe, Field Operations Commander; Dave Spinelli, CAD/RMS/JMS Manager, Technical Services Division; and Sgt. Steve Borbely, Custody Services Bureau

Please provide a brief narrative history of your MIS planning and acquisition process. In 1999, the Contra Costa jail went live with its previous JMS system. This system and the vendor support proved to be very costly. There also were significant Y2K problems that would be costly to fix. Even the smallest of change requests (e.g., functional and report outputs) were too costly on an ongoing basis. As a result, the jail began to consider replacement of this system with one that was more cost effective and with customer support that was more flexible and affordable. It was also noted that the skills of the correctional staff did not fit well with the user interface demands of the JMS software. The jail began the planning process, which resulted in the development and release of an RFP. Subsequent to the RFP release, five JMS vendors responded. Just as the RFP responses were coming in, a local software provider, which had previously provided iris recognition software to the department, approached the jail with an offer to design and build a new JMS. The downside, as stated by the jail, was that this vendor had no previous experience with JMS systems. The significant upside was that the vendor offered to build a system, including software, hardware, and database with no up-front cost, and that no payment would be due until the new system went live. It was further determined that the new system could be paid for by simply using the annual software maintenance and support monies required from their current vendor's contract. Furthermore, the vendor agreed to place software developers inside the jail's work units to help them understand the functional requirements of the system and to demonstrate proof of concept. Although this process had its merits, perhaps its biggest downside was that it fostered a significant creep in the project's scope; that is, the functional requirements kept evolving as the process unfolded, even though general requirements were listed in the RFP document. The project unfolded over a 4-year timeframe from 2005 to 2008, when the system went live.

Note: The original vendor who offered to build the JMS system was motivated by the desire to enter the JMS market and leverage Department of Homeland Security monies that they believed would be available in the future. During the project, this company was bought by a much larger, international, identity-solutions company that ushered in new priorities and commitments and chose not to focus on continuing in the JMS market. However, the company did finish its commitment to Contra Costa.

Planning for Your New Jail MIS

1. What was your planning process? Although there was no formal goal or vision statement developed by the jail, the primary objective was to acquire a more efficient and cost-effective JMS system. The jail did not adopt a formal planning process for the design and implementation of a new JMS. The impetus for the change mainly came from middle management in the technology and custody services

divisions. The internal project work teams were not established until after the decision was made to work with the identity-solutions vendor that offered to build a custom system.

2. How did you engage stakeholders (both internal and external to the agency) in the planning process, and who were they? The primary approach was to examine the various workflows in the jail, starting with booking and then moving from there out to other inmate processing functions. As the major functions were identified, work groups representing staff from each unit were identified to work with the software developers. Work groups included clerical, civilian, line, and supervisory staff. Middle management took the lead in the project and was held accountable for the project's success. No formal, high-level steering committee was developed. Higher-level administration was not significantly involved in the project nor did it contribute to identification of their JMS needs. Some effort was made to engage the courts in the design process but with little success, as there was no big-picture vision for the project and thus no perceived stake in it by external agencies. Thus, no other external stakeholders were involved in the project.

3. Did you have or engage the appropriate political support (e.g., sheriff, county commissioners, courts) both internal and external to the agency? There was very little political support for this project as it was primarily engineered and managed by mid-level management (e.g., captains from technical support, custody services, and central identification departments and their support staffs).

4. How did you identify your data/information needs? The systems data needs were principally identified by the software developers who worked directly with each unit (e.g., booking, medical, classification, property) of the jail. Data needs were driven by the work processes of each unit and by the reports each unit perceived they needed.

5. How did you identify your functional requirements? Technical and custody services management met with the internal work groups before the meetings with the vendor to discuss the limitations of the current JMS system and the desired improvements. Management did not want the work groups to simply re-engineer the functionality of the current system and just replicate current practices. They discussed more flexible software navigation and user interfaces, and identified old processes that could be dropped from the new system. The software vendor then met with the work groups to develop the functional requirements. They then reviewed the requirements with the technical and custody services management. PowerPoint slides of workflows and screen mock-ups were used to facilitate the process.

6. What happened during the planning phase that you did not expect? Working with little or no money allocated to the project and adapting to the lack of interest and participation from outside stakeholders were the biggest issues. They were "kind of winging it" through the planning process, so there were consequently not a lot of initial expectations. Upper administration did not engage in the process either positively or negatively.

7. What planning processes were most useful? On their own initiative, the vendor researched state legal requirements that pertain to the jail and its reporting, and assisted in bringing that information to the design discussions. It also was noted by the mid-management project team that "the facility is not the backbone of corrections operations; it is the JMS system."

8. What were the pitfalls in the planning process? In addition to those previously mentioned, perhaps the biggest pitfall, ironically, was the fact that the JMS system was being developed and offered at no cost (paying for it after going live, with software maintenance and support monies already allocated

to the previous vendor). The fact that there was no cost allowed the top administration and other stakeholders to be less engaged in the process. Because no new money was allocated, it became difficult to implement system change requests and to grow the system further after going live.

9. How did you deal with the obstacles? Issues were dealt with as they arose by the management team. Fortunately, the administration and other jail stakeholders outside the process did not dig in their heels on any issues. The funding obstacle was addressed by timing the new JMS to go live at the end of the old system's maintenance contract year, so no new money had to be allocated. Members of the work groups and the mid-management project team changed over time as people moved to new positions. These changes meant that the experience and knowledge of those members left the project.

10. What would you have done differently? The project team identified several things that they would have done differently with the project:

- a. Appoint a high-level steering committee that involved the sheriff and other key stakeholders both inside and outside the agency.
- b. Engage a system integrator to pull together all of the related MIS vendors for information sharing.
- c. Involve the jail administration more in the process, and have them take some ownership of the project.
- d. Establish a dedicated JMS transition team, and keep core user groups intact through the completion of the project.
- e. Involve the county administration in the process to pull together external stakeholders (despite concerns of the risk of their getting too involved in the process).
- f. Educate the county police departments before the project to get their buy-in for the remote booking functionality built into the system; it had not been used by the arresting officers.
- g. Institute better controls over the change process so development could proceed more effectively.

11. What has been gained with the new system? The new system provides a more accurate inmate identification/confirmation process that uses iris-scanning for booking and release. The workflow processes and components can be modified to accommodate change better, especially in the area of booking. Most of the processes can be performed inhouse and without the cost or delay of going through the vendor. The JMS user interface is more intuitive and easier to learn than the previous system. The system provides an easier reporting process and our data are more accessible. Cost savings included no individual user license costs, no Oracle database maintenance, reduced system maintenance, and increased stability of the SQL server.

12. List examples of data outputs and their impact on the jail and stakeholders. The new Contra Costa JMS system offers both canned reports and an ad hoc report feature that uses Crystal Reports software. However, the ad hoc reporting feature is only used by the technical services staff when custom reports are requested. System users can change a limited number of report select-and-sort parameters (e.g., date ranges, facility, gender) on the ad hoc reporting screen. Rosters must be exported to Excel or Acrobat to get row and column totals.

The system offers numerous routine reports for event scheduling activities (e.g., court actions, transportation, pending classifications, visitation, due date for release, temporary release, and inmates still in the booking station after X hours). The system produces various facility counts, including a current

population head count, number of inmates booked, released, and so on. It offers various inmate notices, including fee agreements, property receipts, program status reports, required counseling notices, and participant rights letters. Other reports include work assignments, rosters, schedules, and arrests/charges rosters. Accounting reports include financial transactions, account balances, check registers, and inmate cash authorizations. Some of the aggregate historical reports offered by the system include arrest by agency in the past month/year, bookings in the past month/year, classification scores, ICE/Fed holds in the past month/year, Taser use, incidents of battery in the past week, and population demographics in the past year.

Exemplary Use of Technology in the Jail Environment: The Contra Costa County Sheriff

The Contra Costa County Sheriff has been using a system referred to as ARIES (Automated Regional Information Exchange System) since 2003. The system shares jail data with all agencies in Contra Costa County. It represents the innovative use of information technology in several respects; more than 5,000 users and 61 agencies participate in the system. Although several features and functions could be cited, the electronic Probable Cause Declaration (PCD) system is described here. The electronic PCD system is a good example of interagency data and document exchange as well as the use of a data dashboard in the jail. This module has been in operation since April 2007.

The system enables law enforcement officers to create draft PCDs and submit them electronically and concurrently to both the duty judge and the jail. The jail is informed, on a close-to-real-time basis, of the current status of the PCD process for recent bookings. The judge reviews the draft PCD submitted electronically and can approve, deny, or return the PCD to the law enforcement agency for more information. Each PCD is logged into the system and its current status is maintained throughout the process. The judge can access the PCDs from home during off-hours by using an encrypted Internet connection. The documents can then be e-signed and transmitted electronically.

The status of the PCD is available to the jail for relevant information on inmates at any time through a regularly refreshed dashboard. A ticking clock informs all three involved parties, including the originating law enforcement agency, the judge, and the jail, of the amount of time remaining for a PCD to be issued before the inmate is released from jail custody. If an approved PCD is not available within the statutory time limits (typically 48 hours), the jail intake staff will release the inmate at that time, based on the status displayed on the online dashboard.

This implementation of technology meets a business need for several justice agencies from both a functional and a technical perspective. Documents and data are exchanged electronically in an efficient manner and with timely notification to the jail by using a data dashboard.

APPENDIX E

CASE EXAMPLE: KENT COUNTY JAIL, GRAND RAPIDS, MI

Interview with Capt. Randy Demory

Please provide a brief narrative history of your MIS planning and acquisition process. We started planning and analyzing our needs in March 2001. The RFP went out, and we selected our vendor by the end of the year. Development work started in 2002 and go-live implementation was in June 2004.

Planning for Your New Jail MIS

1. What was your planning process? We had an implementation team with representatives from several divisions from the jail, courts, and IT. We probably should have solicited more involvement from detectives and investigators because they are big users of the data.

2. How did you engage stakeholders (both internal and external to the agency) in the planning process, and who were they? The County had already formed a stakeholder group around the topic of criminal justice system computer integration, and they had already been meeting for a while by the time the sheriff's department got the money to move forward with the jail MIS project. The jail MIS project was made a recurring agenda item for those regular meetings, and our issues were added at the subcommittee level as well. The committee had members from the circuit court, some district courts, community corrections, county administration, IT, the prosecutor's office, juvenile detention, and law enforcement. Within the jail, we had a newsletter, updated monthly, that kept people informed and solicited input. The jail's project manager also met frequently with the concerned parties, including the Office of the Sheriff.

3. Did you have or engage the appropriate political support (e.g., sheriff, county commissioners, courts) both internal and external to the agency? Yes, we had their full support.

4. How did you identify your data/information needs and functional requirements? Our jail had been automated, at least in part, since 1985, with older mainframe technology. We were able to build on that when we decided to move to a client server solution. We surveyed a number of other large jails to see what they had and were happy with, and what they wish they had. We went to conferences and looked at JMS display booths. We got our own users together and created detailed descriptions of the functionality they desired. I would mention that one problem we discovered with surveying other jails is that the person I would call would be the administrator because I am an administrator. The administrator frequently tended to put the best possible face on their JMS and would claim to be happy with it unless it was just a wreck. One of our lower level staff would talk to lower level staff in that same jail and get a totally different story. We found out that we had to drill down to the lower levels to discover how the JMS was really working. (You might want to keep that in mind as you read the responses to these questions.)

5. What happened during the planning phase that you did not expect? I was not quite prepared for the amount of time that it took to accomplish, partly because we went into such great detail and the JMS developers were willing to make many of the changes we requested. Our planned interface between the JMS and the court records system was never successfully developed, and I did not expect that. The main thing that I did not expect, although it was not part of the planning phase, is that immediately after we went live, the parent company laid off the project manager that we had worked closely with for more than 3 years. Ownership of our JMS has changed hands twice since then.

6. What planning processes were most useful? Actually, it was the very laborious process of documenting every single aspect of our previous system. We went through every single field, each field length, every code, every user profile, the details of each table in the old database, and more. We looked at data, tried to find where the bad data were, and what could be done in the next system to clean it up and prevent the same thing from happening with the new system. It all was very detail-oriented but gave us a very solid foundation to build on.

7. What were the pitfalls in the planning process? The amount of staff time required in the whole planning and implementation process was phenomenal. It was difficult to get everyone involved who probably needed to be involved because we all had other jobs and responsibilities as well. Another pitfall was working through the unrealistic expectations of some of our staff people for the new JMS system. The vendor or the project team would meet with users and ask them what they would like to see in the new system. Many people essentially wanted a computer that would read their minds when they came into the room and do all of their work for them, and then turn itself off at the end of the day. In many instances, I, the project manager for the jail, had to come back in after a meeting with accounting, or medical, or court security and bring them back down to the real world. Part of this, too, was around the topic of “automated versus manual,” which I discuss in more detail in the concluding paragraphs.

8. How did you deal with the obstacles? It all boils down to time. Many of the technical obstacles or difficulties could be resolved once everyone in the decisionmaking process was educated on the topic until they finally understood what the technicians were talking about. That takes time, but it is needed. Some people in positions of power or influence would attempt to block something or push something through without having a good understanding of what that meant. Once we were able to educate them so they actually understood the technology, the human obstacles went away. As it relates to technology or hardware, we were beaten by some obstacles simply because we did not have the money, in the end, to buy everything we would have liked. For example, we wanted to greatly expand our delivery system for jail reports (i.e., Crystal Reports and otherwise) and make them available at the desktop level in the prosecutor’s office, courts, community corrections, and so on. We also wanted some of the data dashboard features that were just coming out in 2003–2004. We identified a Crystal enterprise solution but, in the end, we had to throw in the towel after it turned out to be just too expensive.

9. What would you have done differently? Given the scale of the project and the fact that it included software, hardware, a network, and about 12 interfaces, we probably should have given more serious consideration to hiring an outside project manager to guide us through the process.

10. Did you upgrade/enhance your present system or purchase a new one? We purchased a new one.

11. How are you using the system (line staff, middle management, administrators, and other stakeholders)? We have modules for booking, classification, visitation, basic medical, a housing unit floor

log, case notes, charge tracking, visitation, work release, report writing (and hearings and administrative approval), and property. We have a little functionality for programs but not much. Line staff and middle-managers use the JMS every day for almost all functions in their jobs. We do not have much functionality specifically for the top administrators. Outside of the courts and community corrections, our main outside users are detectives, and their main access point is through a Web interface.

12. What has been gained with the new system? One big thing is the advantages in the report writing. For example, with the new system, we went through and attached code tables to every conceivable field that we could, so the uniformity of data entry would help with our selection and query processes. The whole system approach was built with a view toward getting the data back out—when and how we wanted it. The second big thing we gained, paradoxically, was an expansion of free-text fields that allow us to put in as much narrative detail as we want. The case notes are an example of this, and the staff now love to enter case notes for all kinds of interesting details. In many cases, we will have both a code table and a free-text narrative field for the same thing. For example, for classification overrides, the classification staff can select a code that describes the reason for the override and can add an expanded free-text narrative to provide more detail. We enter data in the same way for inmates' tattoos, floor log entries, moves, and so on. This combination of codes only, free-text narratives only, and using code and/or free text has come to mean a lot for our data abilities.

Data Capacity and Data Use

Analytical capacity

1. How did you specify a report generation procedure for the vendor? We gave the JMS vendor a stack of reports from our previous JMS system that we wanted replaced and improved upon. We went over the vendor's proposed reports and made improvements. They created some Crystal Reports for us. We trained a number of our people in Crystal Reports, and then the new JMS vendor provided us with some training in writing Crystal Reports, using our own database table structure. The tables are pretty complicated so, in some instances, our vendor created views to simplify the Crystal Report Generator. They also enabled us to send almost every report or query result to a file or to Excel, so that helps. In a few instances, we have used Microsoft Access as the tool to query our database, and that works very well for the staff people who know how to use it. The new JMS does not have its own report generator tool.

2. Who was involved in specifying performance requirements for report generation? We had a JMS implementation team made up of people with different responsibilities in the jail.

3. Did the report generator live up to your requirements? We are happy with using Crystal Reports and Excel, and we do fine with that, along with the vendor's JMS canned reports. Now that we have used it for a while, I would like to see if we could get some more views of the database to simplify some things for us, but ownership of the parent company of our JMS has changed hands twice and the new owners are not as good to work with.

4. What staff in the jail have the competency to set up/build ad hoc reports? We started with three corrections staff—one in community corrections and two IT staff—but now, 6 years later, because of promotions, job changes, and layoffs, we are down to one in corrections, one in community corrections, and one in IT.

Routine monitoring procedures

- 1. Can the MIS produce charts to monitor key outcomes (e.g., disciplinary rates per month) across time?** The JMS does have limited ability to produce charts, but we export to Microsoft Excel for all of our charts and graphs.
- 2. Does the MIS offer procedures to monitor trends in the jail?** The JMS does not have this ability beyond allowing us to select by date range, but we generally export to Excel and go from there. For the more detailed trend analysis, our community corrections guy uses SPSS.
- 3. Does the MIS offer procedures to monitor classification percentages (e.g., maximum, medium, and minimum security) across time?** Again, only to the extent it allows us to select data by date range. We take daily snapshots and export to Excel instead of relying on the JMS to recreate a historical build of data. The JMS does store its own snapshots, but we would still want to get it into Excel to do any work.

Coding in the MIS

- 1. Who sets up your coding configuration for new factors to be monitored (e.g., sexual assaults, grievance coding)?** The JMS administrator at the jail.
- 2. Who set up your original canned/out-of-the-box coding configurations?** The JMS implementation team.

Canned reports

- 1. Who set up your initial set of canned reports?** We had our JMS implementation team, made up of people with different responsibilities in the jail.
- 2. Are the canned reports meeting the information needs of key stakeholders in the jail?** Generally, as supplemented by the ad hoc reports.
 - a. Security monitoring?** Yes.
 - b. Drug use in the jail?** Yes.
 - c. Identification and coding of security incidents?** Yes.
 - d. Safety of inmates?** Yes.
 - e. Safety of staff?** Yes.
 - f. Disciplinary order (e.g., misconduct rates/types, grievances, staff use of force)?** Yes.
 - g. Services and treatments provided?** No.
 - h. Program activities of inmates?** No.

Information needs of specific divisions and managers

Which departments in the jail monitor the following information categories?

- 1. Work demands across time.** Jail administrators and senior administrators in the Office of the Sheriff.
- 2. Work done (daily, weekly, monthly).** Sergeants, classification officers, medical and mental health staff, and video court staff.

3. Work quality (quality indexes). Intake sergeants monitor errors made in check-in and booking. The records supervisor monitors errors made in entering court paperwork. In these two cases, the supervisors are not typically using any computer-aided search to conduct quality checks; they are simply responding to reported errors. The classification supervisor does conduct a monthly audit that is guided by a number of reports that reflect quality, such as override rate, housing plan compliance, and AFIS verifications.

4. Work outcomes (meeting your goals, achieving selected outcomes). The jail sergeants and lieutenants use the JMS to make sure the deputies are meeting security outcomes like block/housing checks. We have a set of performance measures that we report to the Office of the Sheriff quarterly, and the JMS assists with the collection of those data. The Jail Population Management committee uses JMS data to make sure we stay on track with our jail population projections.

Ad hoc policy queries

1. Do senior administrators make ad hoc queries regarding management/policy problems? I am a senior administrator and I do, but I am the only one. Other administrators with the sheriff's office occasionally request data from me, and outside entities such as county administration frequently do.

2. What happens when a senior administrator needs answers for an ad hoc public policy issue? I take care of it.

3. Does the jail have staff to routinely conduct ad hoc policy queries? We did until the county started going through budget cuts and we started laying people off.

4. How do you feel about the analytical and reporting capacity of the JMS/MIS system? Overall, I would give it about 80 percent. The table structure is very complicated, and that limits one's ability to extract things sometimes unless one is very skilled with query writing.

Data quality assurance and error detection

Does your system have built-in data quality, omission, or error-detection features? We have the ability to set any field as a required field, so that takes care of some, but not all, of the omission problems. We do not have any true error-detection features beyond input masks to require date/time fields to be correct. For some things, we decided to allow staff to have some leeway or freedom when it comes to data entry, but it may not have been the best move. For example, with scars, marks, and tattoos, we have code table fields for location, type, color, and a couple of other things, and also a narrative notes field to describe the tattoo. None of the fields are required, so the booking people are free to fill all, part, or none of the fields that describe the tattoos. It seems like they do not want to be bothered by it, and if we make one of those fields required, they just skip the whole thing.

Other Jail MIS Issues

One of the things that we probably made a wrong choice on, in the beginning, was to not link our address fields with dispatch's database of true or correct addresses in the county. When dispatch types in an address, the database will alert them if it is not a "true" address. At the time, we thought it would

complicate our lives because a certain number of people are from out of town, but in retrospect, I wish we would have done it, so at least we would have confidence in a certain number of addresses.

That brings up another thought—that is, I have discovered that the single biggest users of our jail data (besides us) are the detectives in our agency and the surrounding agencies. There may have been some things we would have done slightly differently if I had known that, going into the project, to the degree that I know it now. We do not give the outlying agencies direct access to our JMS, but we did provide a Web interface that allows them access to nearly everything they want, and it is very popular with them.

Another thing that I did not think through, to the degree I wish I had, is this whole thing of “primary charge” or “driving charge.” If an inmate has five charges, how do you decide which is the charge that is the one principally holding an inmate? Or, for reporting purposes, people always want to know how many inmates are in jail for drugs or assault. We built in a logic model to calculate and flag the top charge for “in-custody inmates” based on severity, bond, and so on, and I am happy with that. The part I failed to comprehend was how frequently the primary charge changed upon release, and the last active charge at the final moment before release might be a minor civil charge instead of the serious violent charge that actually was the principal charge holding the inmate for several months. So, our JMS did not store what the primary charge was after release for the majority of the time the inmate was here in jail. The vendor wrote us an “expression” that we can include when we write Crystal Report queries, and it works pretty well, but it greatly increases processing time, as it has to recalculate the primary charges all over again.

In a similar vein, I wish we would have had a canned report that would allow us to search by charge a bit more easily, particularly for inmates out of custody. There is a way to do it in our new JMS, but it is not as clean as I would like. We have a Crystal Report that I use, but it is not widely available to everyone.

One area that was underdeveloped in our initial launch is a module for inmate programs. There is very minimal functionality in there now, and we always thought we would come back and enhance it, and we just never did. Now that we are doing much more inmate program work and getting very active in the whole inmate reentry initiative, we are missing it and having to turn to outside third-party solutions to meet this need. I would much rather have all of this functionality in our JMS.

Another philosophical issue that informed our team’s development discussions back in 2003, but still pops up from time to time, is the discussion between automatic data entries versus manual entries. What do you want the computer to fill in automatically, and what do you want a human to fill in, even though the computer could do it if you told it to? For example, our housing unit floor log is called the Daily Journal. We want the housing unit officer to know what is going on in their housing unit and be accountable for everyone who is off the floor, so we thought it would be best if the housing unit officer was required to make a journal entry when an inmate left the floor for a visit, went to court, or something else. After a few years of doing that, we decided that it was tying officers to the computer too much and we would rather free them up to be with the inmates, so we opted for an automatic entry. Our one concession was to leave the ending date/time entry up to the officer, so now the computer automatically logs the event and the starting time, but the officer is required to enter the end time in the computer by hand when the inmate returns to the housing unit. That was our compromise. That same automatic versus manual discussion comes up from time to time in the context of many other modules, including classification.

APPENDIX F

EVALUATING YOUR JMS SYSTEM SUPPORT AND USABILITY FEATURES

Introduction

The following information is intended to assist in the evaluation of features in both the jail management information system (JMS) currently in use and in the JMS system(s) to be considered when replacing the current one. The first involves evaluating the comprehensiveness, functionality, and usability of your agency's current JMS components, and identifying areas for improvement to support the running of an intelligent jail. The second goal of this section is to provide a guide for assessing the comprehensiveness, functionality, and usability of new JMS systems to be designed or considered for purchase. The various functions and outputs of the JMS, listed in the evaluation instruments, also may be useful in developing system specifications for Requests for Proposals (RFPs) of new JMS systems.

Note: The functions, outputs, and reports listed in the assessment guide are examples and are not intended to be all-inclusive. *You may wish to add additional functions and outputs to the guide's assessment list.*

Using the Self-Assessment and Inventory Instruments

In preparing to use the JMS Self-Assessment and Inventory Guide that follows, select a group of 6–10 system users and stakeholders who represent various units and organizational levels within the jail, including information technology staff. These staff may handle inmate processing in the following areas:

- Booking/intake.
- Medical/mental health.
- Classification.
- Housing.
- Transportation.
- Scheduling.
- Work or program assignment.
- Release.

Staff to represent the organization may include the following:

- Line staff.
- Shift supervisor.
- Administration.
- Planners and staff responsible for budgets.
- Outside stakeholders (e.g., courts).

For each system, collect hard copies of input and output documents and screens, navigation screens, relevant manuals, data dictionaries, and code tables. Hold assessment sessions, using the System Assessment and Inventory Guide (see exhibit F.1). Each member of the assessment group scores the appropriate sections of the assessment instruments separately. The group discusses the reasons for any poor assessments and any differences in scores.

Instrument-Scoring Guidelines for JMS Features

Using the assessment guide that follows (see exhibit F.1), this section describes how to score your assessment of the JMS system's data support, functionality, timely access, data quality (integrity), and ease of the user interface.

EXHIBIT F.1 DATA SUPPORT INPUTS, FUNCTIONALITY, TIMELINESS, AND USER INTERFACE

Score	Level	Definition
Data Support Inputs		
		To what extent do the data inputs designed in the system adequately support the information needs and processes of the jail? Are there data holes in the system (data gaps that the system does not capture)? To what extent are data complete (provision in the system to capture the data but data are missing)?
3	Comprehensive	Data inputs are comprehensive and meet all or most expectations/requirements.
2	Adequate	Data inputs are adequate: they do not impair effectiveness of system.
1	Insufficient	Data inputs are inadequate: they seriously impair effectiveness of the system.
Functionality		
		To what extent are the data inputted and stored in the system organized in an efficient and useful manner to support inmate management and agency decisions? Do routine automated system edits prevent missing data? Do the edits use available automated information, coded fields, logic matrices, etc., to prevent errors?
3	Good	System organizes case-processing and decision support data in an efficient, effective manner and readily displays data as needed by the user. System edits prevent missing data and prevent as many inaccurate entries as possible, based on coded fields and automated logic.
2	Fair	Some data are organized in an efficient and effective manner, and some decision support data are readily displayed. This prevents most missing data and prevents some erroneous data entry.
1	Poor	Keyed data are not efficiently organized and presented to the user in support of decisions. There are little or no checks for missing data or erroneous data entry.

Timeliness		
		How timely is the information provided for the immediate task at hand? Examples include data-entry clerks keying in offense information instantly, classification staff accessing criminal history, prior classification history, disciplinary history to complete the classification instrument, etc. Assess the ease of accessing information from prior bookings. In some systems, data from prior bookings are just a click or two away, but in other systems you may have to back all the way out of screens, look up historical book numbers, copy and paste them into additional screens, etc.
3	Good	Meets all or most expectations and requirements.
2	Fair	Meets some requirements and does not seriously hamper the immediate task.
1	Poor	Much of the data are not provided in a timely manner, which seriously impairs the efficiency of the system.
User Interface		
		Are the data screens easily understood and do they follow the workflow? Is the system easy to navigate and move between systems and screens? Do the input screens automatically fill in all available data? Does the system minimize or eliminate redundant steps and data entry? Is the screen layout logical? Is the flow intuitive? Are there shortcuts that the experienced user can use that speed tasks up? Can the user add codes to the code table or drop-down lists without calling tech support? Can the user set a field as mandatory or add a default value without asking for an enhancement?
3	Good	System is easily understood, screens are well organized and navigable, system is well integrated with the workflow, and data fields are automatically populated where appropriate.
2	Fair	System is understandable and relatively easy to train to, follows workflow relatively well, some data fields are populated automatically, and system is relatively easy to navigate.
1	Poor	System is not very understandable and does not adequately follow the workflow. System is not very easy to navigate, and few if any fields are automatically populated.

Tabulating the Assessment Scores for JMS Features

Exhibit F.2 is a sample guide for a system assessment. This guide provides a format for the rating of the system reviewers' findings; the assigned numerical values are calculated to arrive at a single score for the system being assessed. To use the guide, total the scores in each column and row, and enter the results at the end of each column and row. Count the total number of assessment items scored in the column. If all of the items in the example are scored, the total is 64. The number of items scored should be the same for each column. Enter that total on the line, "total items scored," under each column. To compute the total average column score, divide the total of the column scores by the total number of items scored (the average column scores will be between 1 and 3). Row scores may also be totaled to provide insight into the adequacy of each system component; scores range from 5 (minimum) to 15 points (maximum). Total row scores of 10 to 15 indicate *adequate to good* system functions.

To compute the overall system assessment score, sum the total column scores and enter that total in the 'total column score' field under the total row score. 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 times 5; this will be 64 if all items in the example are scored). Divide the total of the column scores by the total number of items scored to get the overall JMS functions score (the overall score will be between 1 and 3). If all items in the assessment were not scored, this will need to be acknowledged during your final assessment of the system's comprehensiveness.

EXHIBIT F.2 SYSTEM ASSESSMENT AND INVENTORY GUIDE

JMS-Related Features (Note: Function examples below are not intended to be all-inclusive. Additional functionality to be assessed may be added as desired.)	Data Support Inputs 3 = Comprehensive, 2 = Adequate, 1 = Insufficient	Functionality (Information efficiently organized, edits prevent missing/erroneous data) 3 = Comprehensive, 2 = Adequate, 1 = Insufficient	Timeliness (Information for process at hand provided to user in timely manner) 3 = Comprehensive, 2 = Adequate, 1 = Insufficient	Data Integrity (Are data reliable and accurate?) 3 = Comprehensive, 2 = Adequate, 1 = Insufficient	User Interface (Are the screens easily understood, uncluttered, easy to navigate, coded fields?) 3 = Comprehensive, 2 = Adequate, 1 = Insufficient	Total Row Score
Intake: Positive Identification						
1. Master System ID Search						
2. Automated Fingerprint Match						
3. Physical Characteristics						
4. Automated NCIC/CCH Search						
Booking: Positive Identification						
1. Inmate Demographics (*auto-populate with existing static data)						
2. Background Data*						
3. Identify Keep-Separates*						
4. Identify Detainers/Warrants LEIN						
Initial Medical/Mental Screening						
1. Initial Medical Screening						
2. Initial MH & Suicide Risk Screening						
3. Previous MH Brought Forward						
4. Current MH Inventoried						
5. Medical Status Alerts						
6. Previous History Brought Forward						
7. Previous Suicide Assessments and Attempts Brought Forward						
8. Current History Inventoried						
9. MH Status Alerts						
Booking						
1. Inmate Demographics (*auto-populate with existing static data)						
2. Background Data*						
3. Offense Information						
4. Identify Keep-Separates*						
5. Identify Detainers/Warrants LEIN						

JMS-Related Features (Note: Function examples below are not intended to be all-inclusive. Additional functionality to be assessed may be added as desired.)	Data Support Inputs 3 = Comprehensive, 2 = Adequate, 1 = Insufficient	Functionality (Information efficiently organized, edits prevent missing/erroneous data) 3 = Comprehensive, 2 = Adequate, 1 = Insufficient	Timeliness (Information for process at hand provided to user in timely manner) 3 = Comprehensive, 2 = Adequate, 1 = Insufficient	Data Integrity (Are data reliable and accurate?) 3 = Comprehensive, 2 = Adequate, 1 = Insufficient	User Interface (Are the screens easily understood, uncluttered, easy to navigate, coded fields?) 3 = Comprehensive, 2 = Adequate, 1 = Insufficient	Total Row Score
Initial Medical/Mental Health Screening						
1. Initial Medical Screening						
2. Initial MH & Suicide Risk Screening						
3. Previous MH Brought Forward						
4. Current MH Inventoried						
5. Medical Status Alerts						
6. Previous History Brought Forward						
7. Previous Suicide Assessments and Attempts Brought Forward						
8. Current History Inventoried						
9. MH Status Alerts						
Time Computations						
1. Sentence Dates, Sentence Lengths, Concurrent/Consecutive, Statutory Minimum/Maximums						
2. Time Credits at Intake						
3. Automated Ongoing Time Credit Adjustments						
Security Classification						
1. Integrated Criminal History						
2. Inventories Current Offense Seriousness, Disciplinary History, Escape History, Gang Status, Age, Substance Abuse, and Previous Incident History						
3. Other Instrument Risk Factors						
4. Automated Recommended Classification Assignment						
5. Documents Override Assignment						
6. Automated Inmate Notice						
Alerts and Events Tracking						
1. Automated Alerts						
2. Manual Alerts Posted (e.g., gang member, special diet, hold/detainer)						

JMS-Related Features (Note: Function examples below are not intended to be all-inclusive. Additional functionality to be assessed may be added as desired.)	Data Support Inputs 3 = Comprehensive, 2 = Adequate, 1 = Insufficient	Functionality (Information efficiently organized, edits prevent missing/erroneous data) 3 = Comprehensive, 2 = Adequate, 1 = Insufficient	Timeliness (Information for process at hand provided to user in timely manner) 3 = Comprehensive, 2 = Adequate, 1 = Insufficient	Data Integrity (Are data reliable and accurate?) 3 = Comprehensive, 2 = Adequate, 1 = Insufficient	User Interface (Are the screens easily understood, uncluttered, easy to navigate, coded fields?) 3 = Comprehensive, 2 = Adequate, 1 = Insufficient	Total Row Score
3. Mis-housed						
4. Past Projected Release Date						
5. Due for Court						
6. Due for Classification/Review						
7. Sentenced						
8. Visitations, Sick Call, Pill Pass, etc.						
Program Needs Assessment						
1. Previous Assessed Needs and Treatment History Brought Forward						
2. PSI Information Brought Forward or Inventoried						
3. Criminal History (e.g., domestic abuse, drug/alcohol offenses) Inventoried						
4. Current Needs Assessment Inventoried						
Transport Assignments						
1. Automatically Matches Inmate to Appropriate Transportation List						
2. Alerts for Transport Issues (e.g., Medical Holds, Keep-Separates)						
3. Automatically Schedules Transport						
4. Documents Transport Activity						
Housing Assignments						
1. Automatically Inventories Appropriate Available Beds, Based on Housing Policies						
2. Automatically Warns of Keep-Separate						
3. Documents Housing Assignment and Any Housing Policy Override						
Program/Work Assignments						
1. Matches Programs to Assessed Needs						
2. Tracks Program Openings and Automatically Schedules Enrollment						

JMS-Related Features (Note: Function examples below are not intended to be all-inclusive. Additional functionality to be assessed may be added as desired.)	Data Support Inputs 3 = Comprehensive, 2 = Adequate, 1 = Insufficient	Functionality (Information efficiently organized, edits prevent missing/erroneous data) 3 = Comprehensive, 2 = Adequate, 1 = Insufficient	Timeliness (Information for process at hand provided to user in timely manner) 3 = Comprehensive, 2 = Adequate, 1 = Insufficient	Data Integrity (Are data reliable and accurate?) 3 = Comprehensive, 2 = Adequate, 1 = Insufficient	User Interface (Are the screens easily understood, uncluttered, easy to navigate, coded fields?) 3 = Comprehensive, 2 = Adequate, 1 = Insufficient	Total Row Score
3. Tracks Program/Work Assignment Schedules						
4. Tracks Enrollments, Terminations, Termination Reasons						
5. Automatically Tracks and Posts Earned Good Time						
Reclassification						
1. New Mitigating/Aggravating Circumstances (e.g., Detainers, Disciplinary, New Needs, Program/Work Outcomes Inventoried)						
2. Automated Recommended Classification Assignment						
3. Documents Override Assignment						
4. Automated Inmate Notice						
Community Placement and Reentry						
1. Early Release/Pretrial Release Eligibility Determination						
2. Inventories Community Placement Risk Predictors (e.g., Criminal History, Escape, Probation/Parole Violations, Work/Education Histories; Substance Abuse Severity, Social Stability, Criminal Cognitions, Age)						
3. Risk and Needs Assessment						
4. Reentry Plan						
Release						
1. Release Date Confirmations						
2. Positive Identification						
3. Automated Victim Notification Registration Alert						
4. Automated Offender Sex Registration Alert						
5. Detainer/Holds Alert						
6. Release Date and Reason						

JMS-Related Features (Note: Function examples below are not intended to be all-inclusive. Additional functionality to be assessed may be added as desired.)	Data Support Inputs 3 = Comprehensive, 2 = Adequate, 1 = Insufficient	Functionality (Information efficiently organized, edits prevent missing/erroneous data) 3 = Comprehensive, 2 = Adequate, 1 = Insufficient	Timeliness (Information for process at hand provided to user in timely manner) 3 = Comprehensive, 2 = Adequate, 1 = Insufficient	Data Integrity (Are data reliable and accurate?) 3 = Comprehensive, 2 = Adequate, 1 = Insufficient	User Interface (Are the screens easily understood, uncluttered, easy to navigate, coded fields?) 3 = Comprehensive, 2 = Adequate, 1 = Insufficient	Total Row Score
Other						
1. Flexible Notes and Comments Throughout System						
2. Automated Checks for Data Quality/Missing Data						
3. Workload Driver						
TOTAL COLUMN SCORES						Total of Column Scores
TOTAL ITEMS						Total Cumulative Items
AVERAGE COLUMN SCORE (Total column score divided by total items scored)						Overall Score

To Compute Overall Score:

1. Add total column scores for inputs, functionality, timeliness, integrity and interface.
2. Then add total items together for each column.
3. Then divide the total column score by the total items to get the overall JMS features score.

Instrument-Scoring Guidelines for Outputs and Reports

Outputs and reports require considerations that are different from those of the overall systems and should be addressed separately using their own rating scale (see exhibit F.3). This exhibit shows a guide for output/report system assessment that is similar to the system assessment guide in exhibit F.1. The form provides a format for the reviewers' findings and provides a single score for the output/report system's capabilities and comprehensiveness. The following section describes how to assess the JMS system's reporting availability, user interface, comprehensiveness, timeliness, and data quality (integrity).

EXHIBIT F.3 AVAILABILITY, USER INTERFACE, COMPREHENSIVENESS, TIMELINESS, AND DATA INTEGRITY

Score	Level	Definition
Availability		
		Are these outputs or reports available with your system?
2	Yes	
1	No	
User Interface		
		Are the outputs or reports easy to generate? Can they be easily and quickly modified if needed? (e.g., change data items, reorder the report, change or select parameters/date ranges, change output format from counts to frequencies)
3	Good	The output and/or report is easy to generate, flexible, and offers the user the ability to select or change parameters, reorder data, change formats, or create supporting ad hoc queries quickly.
2	Fair	The output/report is moderately easy to generate and (if applicable) offers some flexibility in changing parameters, reordering data, supporting ad hoc queries, etc.
1	Poor	The output/report is not easily generated and offers no flexibility in modifying the content or format.
Comprehensiveness		
		Do the data captured in the system provide adequate coverage of the information needed for the output or report content? Is some necessary information for the output or report missing or not available?
3	Good	Complete coverage and content availability of all necessary information to produce an informative output/report is available and meets most user expectations.
2	Fair	Adequate coverage of most necessary information is available to produce an informative output/report and does not seriously degrade the comprehensiveness of the output/report.
1	Poor	Adequate information/data in the system is not available to produce an informative report; lack of comprehensiveness severely limits the usefulness of the output/report.
Timeliness		
		How timely is the output/report provided to the user for the immediate task at hand, e.g., Are outputs/reports on inmates who are due for court transfer immediately available when staff are ready to schedule the event? Is the appropriate output/report available for inmates due for classification/reclassification? Are management and strategic-planning reports produced in a timely manner?
3	Good	The output/report is provided in a timely manner and meets all or most of the time requirements of users.
2	Fair	The output/report timeliness meets some user requirements and does not seriously hamper the immediate task at hand.
1	Poor	The output/report is not provided in a timely manner and seriously impairs the efficiency or need for the task at hand.

Data Integrity		
		Are the data in the output/report accurate and reliable? Are they often missing? Are the data continuously kept current?
3	Good	High level of confidence in the quality, accuracy, and reliability of the data needed for the output/report.
2	Fair	Moderate level of confidence in the quality, accuracy, and reliability of the data needed for the output/report.
1	Poor	Low or suspect level of confidence in the quality, accuracy, and reliability of the data needed for the output/report.

Tabulation of the System Assessment Score for Outputs and Reports

Referring to exhibit F.4, for the first column, total the response scores (each rated 1 or 2) for the available items. Divide the total number of items (rows) assessed by the 'total column score' to determine the percentages of outputs and reports your system currently provides. For the remaining four self-assessment columns (user interface, comprehensiveness, timeliness, and data integrity), score only those items that were identified as available (having a score of 2). Add the total scores for each column and enter that score on the 'total column score' line under each column, including the 'total row score' column. Count the total number of assessment items scored in each column (74, if all items in the example are scored). The number of items scored should be the same for each column. Enter that total on the 'total items scored' line under 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 assessment score for the system's outputs and reports, add each of the four 'total column scores' and enter the total on the 'total column score' line under the 'total row score'. Enter the cumulative total of items scored in the assessment on the 'total items scored' line. (This should be the total items scored in each of the four columns, which is 74 if all items in the example are scored.) Divide the total of the four column scores by the total number of items scored to get the overall outputs/reports score (between 1 and 3). If all items in the assessment were not scored, this will need to be acknowledged in the final assessment of your system's comprehensiveness.

Row scores also may be totaled to provide insight into the adequacy of each system output or report relative to the interface, timeliness, data integrity, and comprehensiveness. Component scores will range from 12 (maximum) to 4 points (minimum). Total row scores between 9 and 12 indicate an *adequate to good* output or report.

TABLE F.4 SYSTEM ASSESSMENT AND INVENTORY GUIDE

Outputs and Reports (Note: Output/report examples below are not intended to be all-inclusive. Additional outputs and reports may be added as desired.)	Available 2 = Yes 1 = No	User Interface (Outputs/reports easy to generate, easy to modify/create) 3 = Good, 2 = Fair, 1 = Poor	Timeliness (Outputs/reports provided to user in timely manner) 3 = Good, 2 = Fair, 1 = Poor	Data Integrity (Are data reliable, accurate?) 3 = Good, 2 = Fair 1 = Poor	Comprehensiveness (Information needs coverage) 3 = Good, 2 = Fair 1 = Poor	Total Row Score
Automated Internal/External MIS System Interfaces and Data Exchanges						
1. State/Local Courts						
2. Probation/Parole						
3. NCIC						
4. Triple I						
5. State CCH						
6. Local Law Enforcement						
7. INS						
Case Processing/Inmate Tracking						
1. Inmate labels (e.g., bar code IDs)						
2. Schedules/rosters of inmates for classification review, reclassification, court appearance, etc.						
3. Schedules of inmates to process for legislatively mandated initiatives, such as DNA, sex offender notification, victim notification						
4. Work logs for staff to complete, such as classification forms						
5. Rosters of program vacancies and inmates awaiting program assignments						
6. Preprinted fingerprint cards						
7. Rosters of inmates available for movement						
8. Housing alerts and vacancy reports						
9. Mis-housed and keep-separate rosters/reports						
10. Medical intake summary						
11. Pre-parole reports on inmate's institutional adjustment						
Operations Control						
1. Classifications overdue for review						
2. Inmates mis-housed today						
3. Distribution of classification workload and overrides, by classification officer and facility						
4. Relation of inmate program assessed needs as compared to program/work assignments						

Outputs and Reports (Note: Output/report examples below are not intended to be all-inclusive. Additional outputs and reports may be added as desired.)	Available 2 = Yes 1 = No	User Interface (Outputs/reports easy to generate, easy to modify/create) 3 = Good, 2 = Fair, 1 = Poor	Timeliness (Outputs/reports provided to user in timely manner) 3 = Good, 2 = Fair, 1 = Poor	Data Integrity (Are data reliable, accurate?) 3 = Good, 2 = Fair 1 = Poor	Comprehensiveness (Information needs coverage) 3 = Good, 2 = Fair 1 = Poor	Total Row Score
5. Use of program resources: program vacancies, program utilization						
6. Percentage of population with zero fund balance						
7. Inmate Management Plan Performance/Progress Reports						
8. Inmates in administrative segregation, by reason/days						
9. How many inmates in disciplinary segregation, by days and infraction type						
10. How many inmates in medical cell/unit, by days						
11. Exception reports, including: a. Data accuracy b. Data omissions c. Inmate releases without victim notification, sex offender notification, etc.						
12. Number of inmates assigned to special housing, by type and facility						
13. Security profile of the jail today, by gender						
14. Cells offline today, by reason and days offline						
Management Control						
1. Use of staff resources: caseloads and unit productivity						
2. Use of bed resources: patterns of bed vacancies, bed shortfalls, bed misuse, beds offline						
3. Use of transportation resources: transports, by type/week/month/year, patterns of empty seats						
4. Checked property lost in past quarter/past year						
5. Inmate fund deposits, debits, fund balance for past quarter/past year						
6. Total inmate processing fees collected in past quarter/past year						
7. Disciplinary infractions rates per 100 inmates in past month/year, by classification level						
8. Rates of inmate-on-inmate assaults in past month/past year, by classification level						
9. Rates of inmate-on-staff assaults in past month/past year, by classification level						
10. Total trust account revenues in past quarter/past year						

Outputs and Reports (Note: Output/report examples below are not intended to be all-inclusive. Additional outputs and reports may be added as desired.)	Available 2 = Yes 1 = No	User Interface (Outputs/reports easy to generate, easy to modify/create) 3 = Good, 2 = Fair, 1 = Poor	Timeliness (Outputs/reports provided to user in timely manner) 3 = Good, 2 = Fair, 1 = Poor	Data Integrity (Are data reliable, accurate?) 3 = Good, 2 = Fair 1 = Poor	Comprehensiveness (Information needs coverage) 3 = Good, 2 = Fair 1 = Poor	Total Row Score
11. Rates of sexual assaults on inmates in past month/post year, by classification level						
12. Aggregate medical/MH needs of population in past quarter/post year, by type						
13. Aggregate assessed program needs of population, by type						
14. Utilization of programs by assessed need/termination reasons, and month/year						
15. Work assignments versus program capacity, by month/year						
16. Facility capacity report: Actual capacity versus design capacity and lawful capacity						
17. Security profile of population, by month/year/gender						
18. Aggregate release reasons, by month/year						
19. Number of inmate and staff grievances, by month/year/reason						
20. Number of released inmates who are homeless, by month/year						
21. Cells offline, by month/year/reason/days offline						
22. Aggregate number detained past authorized release date, by days past due/reason/month/year						
23. Percentage of population for delayed release due to forfeiture of good-time status, by reason/days delayed/month/year						
24. Projections of resource needs: trends in stock and flow populations, by resource variables, e.g.: a. Trends in numbers and types of special needs inmates b. Trends in distribution of security classification types c. Trends in education levels						
25. Frequency of staff shortages, by reason/month/year						
26. Security profile of the jail, by week/month/year						
27. Inmates boarded for a fee in past month/post year, by type; total fees generated						
28. Recidivism rates of inmates booked in past month/post year						
29. INS/ICE holds not boarded for a fee, by month/year						

Outputs and Reports (Note: Output/report examples below are not intended to be all-inclusive. Additional outputs and reports may be added as desired.)	Available 2 = Yes 1 = No	User Interface (Outputs/reports easy to generate, easy to modify/create) 3 = Good, 2 = Fair, 1 = Poor	Timeliness (Outputs/reports provided to user in timely manner) 3 = Good, 2 = Fair, 1 = Poor	Data Integrity (Are data reliable, accurate?) 3 = Good, 2 = Fair 1 = Poor	Comprehensiveness (Information needs coverage) 3 = Good, 2 = Fair 1 = Poor	Total Row Score
Strategic Planning						
1. Total bookings and releases by month/year						
2. Average length of stay, by year						
3. Average daily population, by month/year/security level						
4. ADP housed less than 72 hours						
5. ADP greater than 72 hours						
6. Rates of mis-housings, by security levels/average days mis-housed/year						
7. Recidivism rates of inmate population, by assessed needs if available						
8. What are the inmate target populations for early release consideration?						
9. How many times did population exceed functional capacity or court-mandated capacity?						
10. Internal Policy Simulations (e.g., changes in classification variables)						
11. Population Forecasting						
12. Staffing Analysis/Projections						
13. Legislative Impact Analysis (e.g., mandatory sentences, determinate sentencing)						
TOTAL COLUMN SCORES						Total of Column Scores
TOTAL ITEMS SCORED						Total Cumulative Items
AVERAGE COLUMN SCORE (Total column score divided by total items scored)						Overall Score

To Compute Overall Score:

1. Add total column scores for interface, functionality, timeliness, integrity and comprehensiveness.
2. Then add total items together for each column (excluding the first column, "Available").
3. Then divide the total column score by the total items to get the overall outputs/reports score.

APPENDIX G

“MEASURING WHAT MATTERS” KENT COUNTY CORRECTIONAL FACILITY ANNUAL STATISTICAL REPORT

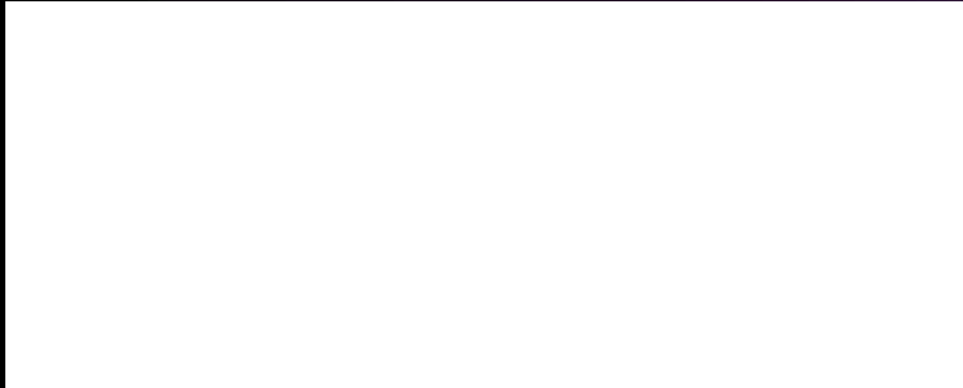
Access the report at <http://nicic.org/Library/027446>.

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