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ABSTRACT

This report examines how Juvenile Detention Alternatives Initiative (JDAI) sites used data to plan reforms and assess reform success, noting where and how they gathered data. Chapter 1, "The Need for Data," discusses: assessing data utilization, using data to enhance communication, and using this report to support reform. Chapter 2, "Guiding Principles," presents five principles: system reform is about decisions; focus on issues that can be changed; good programs and policies need good data; a computer is a tool; and an information system is never finished. Chapter 3, "Using Data for Planning and Assessment: Examples," describes how one JDAI site answered questions such as: "Who is coming into the juvenile justice system?" "Who is in detention?" "How long does it take to process cases?" "How are minorities and nonminorities treated?" and "What results can be expected from reform?" Chapter 4, "Supporting Day-to-Day Operations with Technology: Examples," discusses interim steps and longer-term solutions. Chapter 5, "Lessons Learned," explains how essential good data are to planning processes. Chapter 6, "Getting Started," discusses data for planning and assessment and information systems supporting day-to-day work. (Contains 11 resources.) (SM)

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PATHWAYS TO JUVENILE DETENTION REFORM

BY THE NUMBERS

the role of data and information
in detention reform

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SERIES PREFACE

Many years ago, Jim Casey, a founder and long-time CEO of the United Parcel Service, observed that his least prepared and least effective employees were those unfortunate individuals who, for various reasons, had spent much of their youth in institutions, or who had been passed through multiple foster care placements. When his success in business enabled him and his siblings to establish a philanthropy (named in honor of their mother, Annie E. Casey), Mr. Casey focused his charitable work on improving the circumstances of disadvantaged children, in particular by increasing their chances of being raised in stable, nurturing family settings. His insight about what kids need to become healthy, productive citizens helps to explain the Casey Foundation's historical commitment to juvenile justice reform. Over the past two decades, we have organized and funded a series of projects aimed at safely minimizing populations in juvenile correctional facilities through fairer, better informed system policies and practices and the use of effective community-based alternatives.

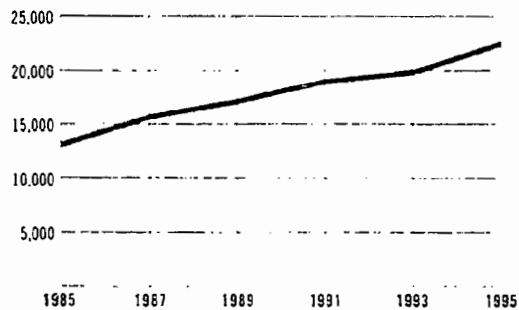
In December 1992, the Annie E. Casey Foundation launched a multi-year, multi-site project known as the Juvenile Detention Alternatives Initiative (JDAI). JDAI's purpose was straightforward: to demonstrate that jurisdictions can establish more effective and efficient systems to accomplish the purposes of juvenile detention. The initiative was inspired by work that we had previously funded in Broward County, Florida, where an extremely crowded, dangerous, and costly detention operation had been radically transformed. Broward County's experience demonstrated that interagency collaboration and data-driven policies and programs could reduce the numbers of kids behind bars without sacrificing public safety or court appearance rates.

Our decision to invest millions of dollars and vast amounts of staff time in JDAI was not solely the result of Broward County's successful pilot endeavors, however. It was also stimulated by data that revealed a rapidly emerging national crisis in juvenile detention. From 1985 to 1995, the number of youth held in secure detention nationwide increased by 72 percent (*see Figure A*). This increase

might be understandable if the youth in custody were primarily violent offenders for whom no reasonable alternative could be found. But other data (see Figure B) reveal that less than one-third of the youth in secure custody (in a one-day snapshot in 1995) were charged with violent acts. In fact, far more kids in this one-day count were held for status offenses (and related court order violations) and failures to comply with conditions of supervision than for dangerous delinquent behavior. Disturbingly, the increases in the numbers of juveniles held in secure detention facilities were severely disproportionate across races. In 1985, approximately 56 percent of youth in detention on a given day were white, while 44 percent were minority youth. By 1995, those numbers were reversed (see Figure C), a consequence of greatly increased detention rates for African-American and Hispanic youth over this 10-year period.¹

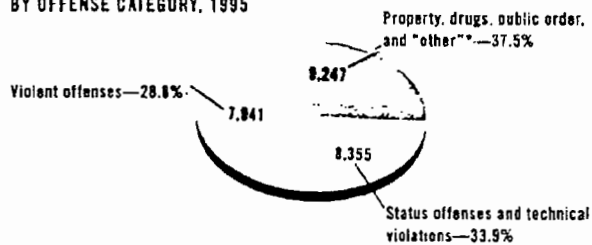
As juvenile detention utilization escalated nationally, crowded facilities became the norm rather than the exception. The number of facilities

FIGURE A
AVERAGE DAILY POPULATION OF JUVENILES IN
U.S. PUBLIC DETENTION CENTERS,
1985-1995



Source: Census of Public and Private Juvenile Detention, Correctional and Shelter Facilities, 1985-1995

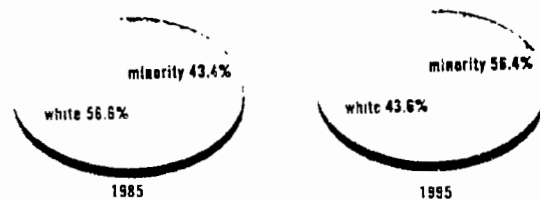
FIGURE B
ONE-DAY COUNTS IN DETENTION FACILITIES
BY OFFENSE CATEGORY, 1995



*Examples of "other" include alcohol and technical violations.

Source: Census of Public and Private Juvenile Detention, Correctional and Shelter Facilities, 1985-1995

FIGURE C
JUVENILES IN PUBLIC DETENTION CENTERS
BY MINORITY STATUS, 1985-1995



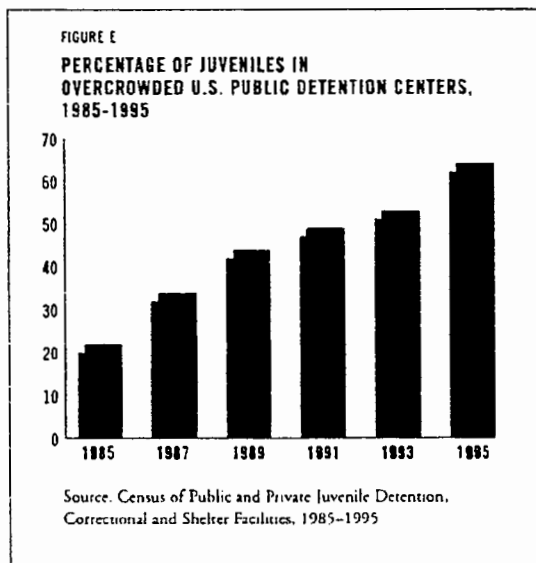
Source: Census of Public and Private Juvenile Detention, Correctional and Shelter Facilities, 1985-1995

operating above their rated capacities rose by 642 percent, from 24 to 178, between 1985 and 1995 (see Figure D), and the percentage of youth held in over-



crowded detention centers rose from 20 percent to 62 percent during the same decade (see Figure E). In 1994, almost 320,000 juveniles entered overcrowded facilities compared to 61,000 a decade earlier.

Crowding is not a housekeeping problem that simply requires facility administrators to put extra mattresses in day rooms when it's time for lights out. Years of research and court cases have concluded that overcrowding produces unsafe, unhealthy conditions for both detainees and staff. A recently published report by staff of the National Juvenile Detention Association and the Youth Law Center summarizes crowding's impact:



Crowding affects every aspect of institutional life, from the provision of basic services such as food and bathroom access to programming, recreation, and education. It stretches existing medical and mental health resources and, at the same time, produces more mental health and medical crises. Crowding places additional stress on the physical plant (heating, plumbing, air circulation) and makes it more difficult to maintain cleaning, laundry, and meal preparation. When staffing ratios fail to keep pace with population, the incidence of violence and suicidal behavior rises. In crowded facilities, staff invariably resort to increased control measures such as lockdowns and mechanical restraints.²

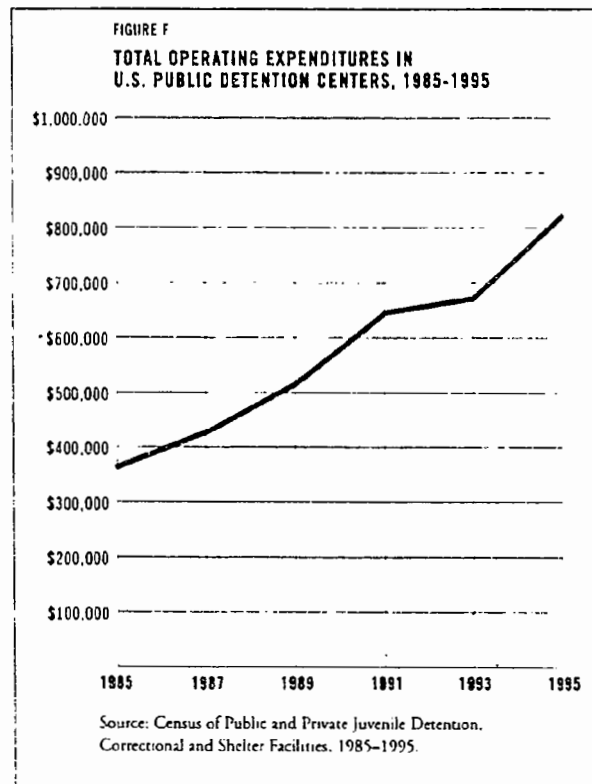
Crowding also puts additional financial pressure on an already expensive public service. Operating costs for public detention centers more than doubled between 1985 and 1995, from \$362 million to almost \$820 million (see Figure F).

Some of these increased operating expenses are no doubt due to emergencies, overtime, and other unbudgeted costs that result from crowding.

JDAI was developed as an alternative to these trends, as a demonstration that jurisdictions could control their detention destinies. The initiative had four objectives:

- to eliminate the inappropriate or unnecessary use of secure detention;
- to minimize failures to appear and the incidence of delinquent behavior;
- to redirect public finances from building new facility capacity to responsible alternative strategies; and
- to improve conditions in secure detention facilities.

To accomplish these objectives, participating sites pursued a set of strategies to change detention policies and practices. The first strategy was *collaboration*, the coming together of disparate juvenile justice system stakeholders and other potential partners (like schools, community groups, the mental health system) to confer, share information, develop system-wide policies, and to promote accountability. Collaboration was also essential for sites to build a consensus about the limited purposes of secure detention. Consistent with professional standards and most statutes, they agreed that secure detention should be used only to ensure that alleged delinquents appear in court at the proper times and to protect the community by minimizing serious delinquent acts while their cases are being processed.



Armed with a clearer sense of purpose, the sites then examined their systems' operations, using objective data to clarify problems and dilemmas, and to suggest solutions. They changed how admissions decisions were made (to ensure that only high-risk youth were held), how cases were processed (particularly to reduce lengths of stay in secure detention), and created new alternatives to detention programs (so that the system had more options). Each site's detention facility was carefully inspected and deficiencies were corrected so that confined youth were held in constitutionally required conditions. Efforts to reduce disproportionate minority confinement, and to handle "special" detention cases (e.g., probation violations or warrants), were also undertaken.

In practice, these reforms proved far more difficult to implement than they are now to write about. We began JDAI with five sites: Cook County, IL; Milwaukee County, WI; Multnomah County, OR; New York City; and Sacramento County, CA. Just about when implementation activities were to begin, a dramatic shift occurred in the nation's juvenile justice policy environment. High-profile cases, such as the killing of several tourists in Florida, coupled with reports of significantly increased juvenile violence, spurred both media coverage and new legislation antithetical to JDAI's notion that some youth might be "inappropriately or unnecessarily" detained. This shift in public opinion complicated matters in virtually all of the sites. Political will for the reform strategies diminished as candidates tried to prove they were tougher on juvenile crime than their opponents. Administrators became reluctant to introduce changes that might be perceived as "soft" on delinquents. Legislation was enacted that drove detention use up in several places. Still, most of the sites persevered.

At the end of 1998, three of the original sites—Cook, Multnomah, and Sacramento Counties—remained JDAI participants. Each had implemented a complex array of detention system strategies. Each could claim that they had fundamentally transformed their system. Their experiences, in general, and the particular strategies that they implemented to make their detention systems smarter, fairer, more efficient, and more effective, offer a unique learning laboratory for policymakers and practitioners who want to improve this critical component of

the juvenile justice system. To capture their innovations and the lessons they learned, we have produced this series of publications—*Pathways to Juvenile Detention Reform*. The series includes 13 monographs, all but two of which cover a key component of detention reform. (As for the other two monographs, one is a journalist's account of the initiative, while the other describes Florida's efforts to replicate Broward County's reforms statewide.) A complete list of the titles in the *Pathways* series is provided at the end of this publication.

By the end of 1999, JDAI's evaluators, the National Council on Crime and Delinquency, will have completed their analyses of the project, including quantitative evidence that will clarify whether the sites reduced reliance on secure detention without increasing rearrest or failure-to-appear rates. Data already available, some of which was used by the authors of these monographs, indicate that they did, in spite of the harsh policy environment that drove detention utilization up nationally.

For taking on these difficult challenges, and for sharing both their successes and their failures, the participants in the JDAI sites deserve sincere thanks. At a time when kids are often disproportionately blamed for many of society's problems, these individuals were willing to demonstrate that adults should and could make important changes in their own behavior to respond more effectively to juvenile crime.

Bart Lubow
Senior Associate and Initiative Manager
The Annie E. Casey Foundation

Notes

¹ In 1985, white youth were detained at the rate of 45 per 100,000, while African-American and Hispanic rates were 114 and 73, respectively. By 1995, rates for whites had decreased by 13 percent, while the rates for African-Americans (180 percent increase) and Hispanics (140 percent increase) had skyrocketed. Wordes, Madeline and Sharon M. Jones. 1998. "Trends in Juvenile Detention and Steps Toward Reform." *Crime and Delinquency*, 44(4):544-560.

² Burrell, Sue, et. al., *Crowding in Juvenile Detention Centers: A Problem-Solving Manual*, National Juvenile Detention Association and Youth Law Center, Richmond, KY, prepared for the U.S. Department of Justice, Department of Justice Programs, Office of Juvenile Justice and Delinquency Prevention (December 1998), at 5-6.

Chapter 1

THE NEED FOR DATA

A. Assessing How Data Is Used

In 1995, the population of Sacramento's Juvenile Hall was going up. A quick review of the data confirmed that lengths of stay for youths tried as adults greatly exceeded lengths of stay for other groups. Was the population surge caused by an increase in "fitness filings," petitions for waiver to adult court, since the District Attorney had implemented a policy in late 1993 forbidding the withdrawal of any of these petitions once they were filed? If so, what would happen if the new District Attorney tightened the policy on fitness petitions still further? And what would happen when new legislation that increased the number of youths eligible for fitness motions kicked in later in the year? Finally, if fitness motions were affecting the Juvenile Hall population, what could be done about it?

Sacramento went to the data to find that the number of fitness petitions had jumped from 30 in 1993 to 55 in 1994. Moreover, if 1995 referrals mirrored 1994 referrals, the legislative changes would mean some 50 more in 1995 even if the District Attorney's policy was not tightened. Three interesting facts emerged from further analysis of the data. First, although the Rules of Court directed that the fitness hearing of a youth in custody be held within 15 judicial days from filing of the petition, continuances were common, and the actual average time from filing to completion of the court proceeding was 75 days. Second, only 60 percent of fitness motions were granted; in the other 40 percent, disposition was through juvenile court after all. Third, most of the cases that did go to adult court were either dismissed or pled down.

The data thus revealed that court and prosecutorial resources, not just detention center beds, were being expended on marginal cases. When the Criminal Justice Cabinet discussed ways to use scarce resources better, the District Attorney was quick to see the need to file fitness petitions more selectively. The number of such motions (as well as the Juvenile Hall population and the fitness hearing backlog) began to go down.

Most juvenile justice jurisdictions have computer information systems that collect data about youths referred to the system. And most of those jurisdictions are accustomed to looking at management reports that count caseloads, or list upcoming court hearings, or show who is in detention. Many also report on the numbers of youth coming into the system by gender or age or

ethnicity. But many of these jurisdictions base policy on anecdote rather than on data. The exceptional case attracts the most attention and, without balancing factual information, tends to drive policy. When a few horrific instances of juvenile crime saturate the headlines, for example, draconian new laws may be passed, even though juvenile crime as a whole is declining and equally horrific crimes have been committed by juveniles throughout history.

Sacramento, by contrast, had learned to look carefully at data showing what groups of juveniles were taking up how much bed space. They were able to see that a small number of waiver cases was taking up a large number of beds because each case took so long, which led to questions about outcomes in both juvenile court and adult court. They had already gathered all the data except adult court outcomes in electronic form, and the missing adult court outcomes were easy to collect by hand for such a small group of youth. Using data to support policy-making, in short, had become an accepted way of doing business.

**Many jurisdictions
base policy on anecdote
rather than on data.**

How did Sacramento and the other JDAI sites learn to look for opportunities for system change and to apply what they learned to their planning? What type of data helped them both plan their reforms and assess the success of those reforms? Where did they get the data? What did they do if the data were not available electronically? What can other sites embarking on reform learn about using data for planning from the JDAI experience? This *Pathways* addresses all these questions.

B. Using Data to Enhance Communication

Although data to support planning need not be available in electronic form, especially at first, most jurisdictions, like the JDAI sites, will want data that can be analyzed easily on a computer. Again like the JDAI sites, most jurisdictions already have some type of information system that provides at least "rap sheets" on youth coming into the system, data that can become a nucleus of a planning data set. But there is a broader area where the JDAI sites began to recognize the benefits of information technology: support for the line staff who will implement policy and program changes from day to day. For instance, if the case file with all the relevant background material is locked away in a probation officer's desk when a youth is

brought to the detention center, the intake officer will make the detention decision in a vacuum. If the information is stored electronically, it is always available to those who need it.

The story will also be told here of the JDAI sites' journey from older department-specific information systems that no longer fit their needs toward systems that put technology in the hands of line staff and that facilitate day-to-day communication, which in juvenile justice often means communication among different departments. In those stories we will see that modern juvenile justice information systems that bring all appropriate information to each decisionmaker in the arrest-to-disposition cycle, regardless of the decisionmaker's role or home department or agency, depend upon the interagency collaboration that is at the heart of juvenile justice reform.

C. Using This Report to Support Reform

This *Pathways* will list some guiding principles to frame the discussion of ways data and information technology can support planning reform and carrying it out. Examples from the JDAI sites, with actual reports, will be presented, and the data required to produce the reports will be described. These examples will show that there were always obstacles, and the specific obstacle usually depended on the site's particular circumstances. For instance, where the probation department runs the detention center, as in Multnomah County and Sacramento County, a single information system will usually support both. Where the detention center is run by a separate department, as in Cook County and New York City, there will probably be two separate systems, which will complicate efforts to gather data for planning and to support line staff.

Throughout, this report will distinguish between *gathering and using data for planning and assessment* and *developing information systems that support daily operations*. Each of these subjects has its own problems and solutions. The example from Sacramento at the start of this chapter, for example, shows that one site was able to collect data for planning fairly quickly, sometimes from paper sources, when the need was perceived. In a similar example, Cook County found that its new screening instrument, developed when there was little data on the detention population, was not reducing admissions to the Juvenile Temporary Detention

Center as expected. A crash data collection and analysis effort helped the collaborative better understand the makeup of its detention population and successfully revise, as well as monitor, the instrument.

On the other hand, the comprehensive change required to fully support daily operations can take years in an area like juvenile justice, where different agencies with different (and often adversarial) roles are involved. Here the focus will be on how smaller interim steps can provide significant benefits quickly and relatively inexpensively.

Finally, this report will summarize the lessons from JDAI, as the sites learned to use data for planning and assessment and as they began to modernize their information systems to better support line staff. A final section will describe how others can get started on the same road.

Chapter 2

GUIDING PRINCIPLES

A. System Reform Is About Decisions

Many management reports are somewhat static: How many cases do we have, and are there more than last year? How big are individual case loads? Who needs to be in court today? System reform, though, means looking for opportunities for change and improvement, which means, in turn, looking at *decisions* such as those listed in Table 1, and looking at them systemically: Could a change in the way a particular decision affects a particular group improve the system?

Decision	Possible Outcome	Decisionmaker
Intake	Dismiss, divert, send to District Attorney	Probation
Detention screening	Detain, alternative to detention, release	Detention Intake
Petition	File, don't file	District Attorney
Detention hearing	Secure detention, other conditions, no conditions	Juvenile Court Judge
Arraignment	Dismiss, go forward	Juvenile Court Judge
Weaver	To adult court, remain in Juvenile Court	Juvenile Court Judge
Fact find	Sustain, dismiss	Juvenile Court Judge
Disposition	Commit, community service, etc., probation, no conditions	Juvenile Court Judge

To look at decision points, a jurisdiction planning reform will need to answer some basic questions. For this particular jurisdiction, what are the decision points, what are the possible decisions that can be made at each, and who has the authority to make those decisions? This process is not as simple as it sounds, because the decision

structure of most juvenile justice jurisdictions is much more complicated than the simplistic view in Table 1.

Only when the decision points and possible outcomes are identified can the jurisdiction begin to gather the necessary baseline data on how the decision process affects groups of youth. Some questions the baseline information should answer are discussed in detail below.

B. Focus on Issues That Can Be Changed

When a jurisdiction begins to see the power of data, a tendency to investigate everything arises, whether or not the reform team has the authority to change it. JDAI sites were not immune to this tendency. Where juvenile justice agencies studied areas outside their jurisdiction, such as poverty or education, the sites had difficulty focusing on reforms they could make.

C. Good Programs and Policies Need Good Data

Although data can reveal areas of concern, policies to address those areas of concern are developed and implemented by people. There is, and should be, a healthy give-and-take that develops a consensus and a politically feasible solution based on the facts revealed by the data.

As described above, in Cook County the screening instrument was developed with little underlying data. Instead, the collaborative reached consensus on what groups could be screened out of detention and what groups could not. When the results proved inadequate, data were collected and analyzed, and the instrument was revised.

Multnomah County, in contrast, had some data to describe the detention population and concentrated on developing an instrument that would keep particular target groups out of detention. When the risk instrument was implemented, though, it was not used as planned. Overrides were common. Only after some changes to the instrument and some discussion with counselors and judges did the number of overrides go down and the instrument begin to work as planned.

In Cook County, the initial lack of data affected the policy about which consensus was reached, but in Multnomah the initial reliance on data perhaps helped obscure some lack of consensus. At both sites, the problem was resolved after the missing element was supplied.

D. A Computer Is a Tool

The unit heads of a (non-JDAI) government department met to identify problems, especially communications bottlenecks, that might be resolved through computer technology. They found that their existing information system, although not very "user friendly," answered most of their needs, but only if users received more training and support. A broader use of e-mail would be particularly effective. Several other problems could be resolved with a few new PCs and a small extension to the existing information system.

The department then received an offer it could not refuse: For a substantial discount in price, all line staff could have portable PCs in their cars to access the information system (presumably everything would be easier to use on new equipment and in a car). Several years later, however, the department is still waiting for funding and still facing the same bottlenecks.

Billions of dollars have been wasted over the past 20 years on technology that was not selected to solve a particular problem.

Modern technology is flashy, fun, useful, and increasingly less expensive. But many billions of dollars have been wasted over the past 20 years on technology that was not selected to solve a particular problem. Juvenile justice, in fact, is an area where computers can make, and have made, a big difference by replacing ever-expanding paperwork with fast and accurate electronic communication—if the computer tools are the right ones to solve a problem, and if those who will use the tools are adequately trained and supported.

E. An Information System Is Never Really Finished

In Multnomah, the Department of Juvenile Justice (DJJ, later reorganized as the Department of Adult and Juvenile Community Justice) operated the detention center and also provided probation functions. DJJ had its own operational information system that supported all these functions and its own technical staff, who were installing PC networks to expand access to the information system. But the system itself was over 20 years old, and there had never before been resources to change it as DJJ's needs changed. By 1992, it was obvious that the only solution was to replace the system altogether, but the project had never quite made the list of those to be funded.

In New York City, the DJJ (which runs the detention center), the juvenile division of Probation, and the division of the City's Corporation Counsel that prosecutes juvenile delinquency cases each had its own information system. As in Multnomah, time and money had been inadequate to keep these systems current with departmental needs. Training and support were a continuing problem that affected data quality. Moreover, all three systems ran on hardware whose vendor had filed for Chapter 11 bankruptcy. Again, only a massive project (or three massive projects) could resolve the problems, and in the early 1990s New York City could ill afford massive projects.

These systems are examples of the standard approach to information technology projects at the time they were developed: budget for a single, large project, with minimal ongoing support. Over time, these systems have become dinosaurs, because no one anticipated the amount of change that would occur, and the systems no longer meet their users' needs. In juvenile justice, for example, the

designers of older information systems did not anticipate risk instruments or the proliferation of alternatives to detention.

A new approach to information systems has therefore evolved. This approach recognizes that users' needs will continue to change, and that the information system will therefore never be "finished." As a result, developing an information system is an evolutionary process, done in many small steps and always responsive to changes in the business environment. To draw an analogy from astronomy, "big bang" has been replaced by "expanding universe."

Chapter 3

USING DATA FOR PLANNING AND ASSESSMENT: EXAMPLES

The specific data required for planning and monitoring reform depends upon the goals of the reform. For JDAI, the focus was on the use or misuse of secure detention. Some pertinent questions that had to be answered, and how one site answered each, are described below.

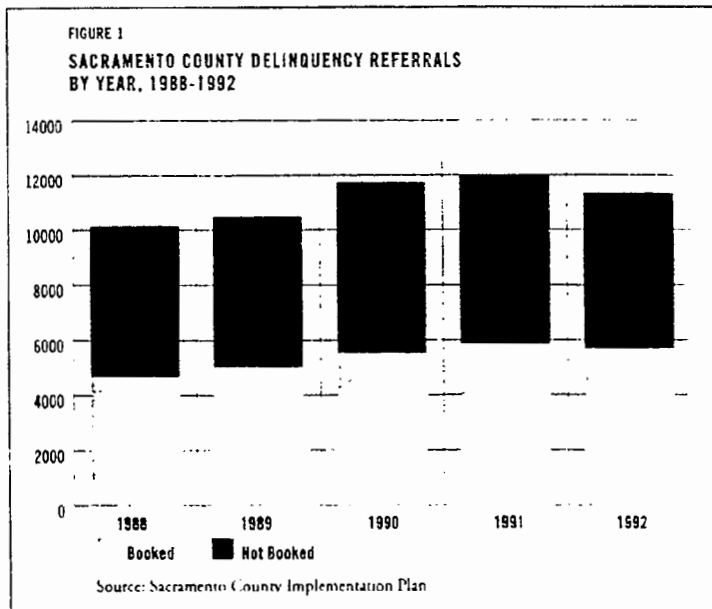
A. Who Is Coming into the Juvenile Justice System?

In Sacramento, as in most jurisdictions, the police make an initial decision on whether or not a youth is arrested and whether or not an arrested youth is delivered to the detention center. For youth brought to Juvenile Hall, the Probation Department makes the initial decision on whether or not to detain.

As part of its initial planning, Sacramento needed to know whether arrest trends were fairly stable, how arrests were handled, and how youth were referred to the juvenile justice system. Data was gathered and analyzed, showing that juvenile arrests in general and juvenile felony arrests in particular had increased between 1985 and 1991—but also that in Sacramento almost 99 percent of juvenile

arrests were referred to Probation, whereas the rate for California as a whole was about 73 percent. It also noted, as shown in Figure 1, that a high and increasing percentage of referrals were "booked," or taken to Juvenile Hall for screening, rather than cited for later appearance; one-third of these youths were released after screening.

The data prompted several follow-up questions. Why did the police so often book the juveniles rather than releasing them? Would the police accept a change whereby more were released at intake? If



Unlike case-level data, however, summary statistics cannot be manipulated in different ways. For instance, summary statistics showing total referrals for each age and total referrals for each category of alleged offenses cannot be used to look at referrals for each alleged offense category for each age. Summary statistics can, though, provide essential baselines for planning.

B. Who Is in Detention?

The planning collaboratives at all the JDAI sites were aware of national detention figures showing that some one-third of the youth in secure detention were detained for technical violations and status offenses. But when faced with a bed space chart like the one shown in Figure 2, developed by the National Council on Crime and Delinquency from Cook County data, the problem suddenly became very real. One judge's reaction to such a bed space chart was, in effect, "Do you mean to tell me that my own system uses a third of its beds for minor offenses?"

FIGURE 2
COOK COUNTY DETENTION FACILITY BED SPACE CHART
ADMISSIONS, LENGTH OF STAY, AND BEDS OCCUPIED BY OFFENSE TYPE, 1995

Offense Type	Number of Admissions	Percent of Admissions	Average LOS (Days)	Beds Needed for Admissions (ADP)
Automatic Transfer	386	4%	131.9	139
Violent	1,989	20%	28.6	156
Property	1,317	13%	16.4	59
Weapons	833	8%	17.4	40
Drugs	1,409	14%	14.2	55
Warrant/Probation Violation and New Offense	1,071	11%	24	70
Warrant/Probation Violation	2,483	25%	16.4	112
Public Order	37	0%	12.7	1
Other	59	1%	12	2
Department of Correction Hold	39	0%	2.3	0
Unknown	289	3%	22.7	18
TOTAL	9,912	100%	24	652

Source: National Council on Crime and Delinquency.

Interpreting the data. Whereas the numbers in Figure 1 provide an important overview of who comes into the system and how, the bed space chart (Figure 2) is a critical planning tool for a reform effort that focuses on reducing the detention

not, how should Sacramento proceed? Further discussion revealed that long delays between arrest and intake for non-booked youth were a problem for the police that would be exacerbated by the new detention policy. After some negotiation, an early citation program was instituted whereby youth who were no longer booked were seen by Probation within a few days.

Interpreting the data. Figure 1 was an essential planning tool. When supplemented by a table (not shown here) that broke down booked and non-booked referrals by type of alleged offense, it answered three key questions: how many referrals enter the system and whether the number is increasing, whether the referrals enter via the detention center or via regular intake, and why the referral was made. Seeing the arrest trend, Sacramento could plan for increasing numbers. Seeing how many referrals were to Juvenile Hall, Sacramento could see the need for objective detention criteria and a risk assessment instrument—and a need to explore joint solutions with the police.

Getting the data. The data requirements for Figure 1 are simple. The date of the referral, the intake type (where intake occurred), and the top alleged offense need to be noted for each referral over a long period. Yet at the beginning of the JDAI planning period, even this basic information was available electronically, at the case level, only in Multnomah County, where a single information system supported probation, intake, and admission and release functions, with programming assistance to gather the raw data for analysis. In the other sites, either the system did not distinguish between the two types of intake, or each was carried out by a different department with a different information system and different ways to identify a youth and a referral, making it difficult to look at both together.

Although it is sometimes feasible to collect case-level data by hand from case files, the numbers involved at initial referral are so large that hand collection is only feasible for a sample, and identifying the sample itself requires much perusal of case files. Fortunately, summary statistics are almost always available on paper reports, as they were at the JDAI sites. Sacramento's statistics, for example, came from Probation Department and Juvenile Hall statistics accumulated over the years and from state sources like the California Bureau of Criminal Statistics.

population and on making admissions to secure detention more rational. A bed space chart shows two things: how many alleged offenders in each broad offense category are coming into detention over a given time period and how many beds those offenders occupy—a very different number, derived from both the number admitted and the time they stay in detention. The more beds a group occupies, the more impact a policy will have that keeps some of them out of detention in the first place or that reduces the time they spend in detention.

To illustrate the differences between admissions and occupancy, consider a detention center with 10 beds, or $10 \times 365 = 3,650$ annual bed-days of available space. If one youth is admitted in an offense category whose members tend to stay for a year, he takes up 365, or 10 percent of those bed-days. If 3,285 other youths are admitted in a second offense category whose members tend to stay for only a day, they take up the remaining 3,285, or 90 percent, of the bed-days. But the youth in the first category, while taking up 10 percent of the bed space, is only one of 3,286, or less than 0.05 percent, of those admitted during the year.

In Figure 2, the two left columns show the number and percent of admissions in each broad offense category over a one-year period: who is coming into the facility. The right column, which shows beds needed for each group, is derived by calculating the average days of detention of the members of each group who were released over a period of time, multiplying the results by the number of admissions to find the total bed-days required, and then translating total bed-days into a daily bed requirement.

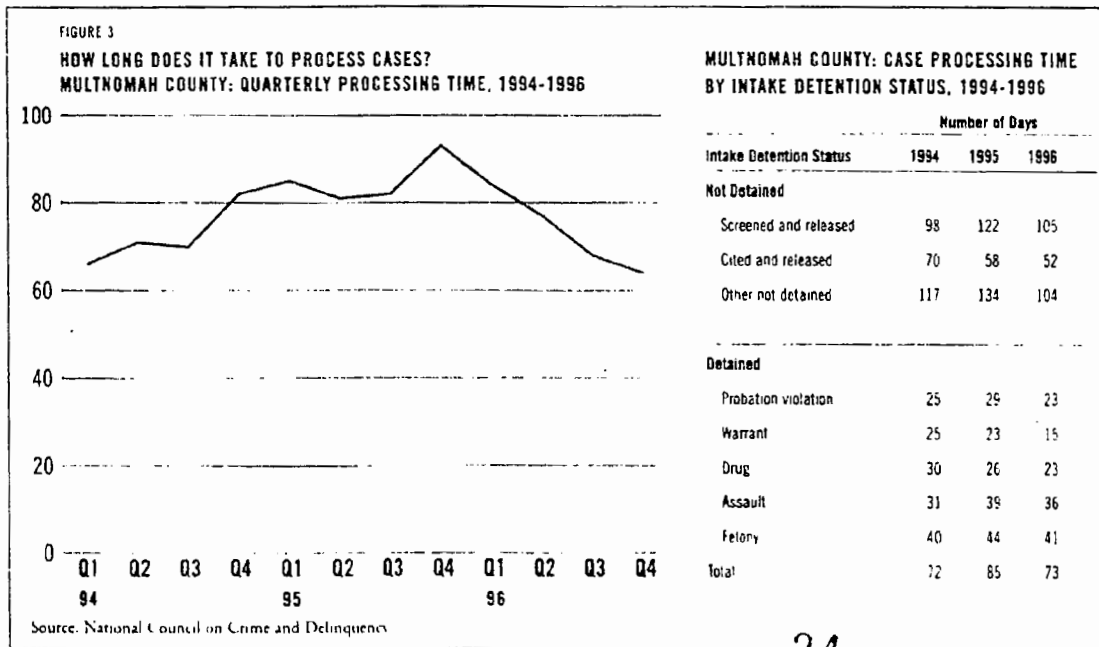
It can clearly be seen that most detention beds are occupied by the first seven offense categories. The collaborative must decide whether some members of some of these groups can be placed in alternatives or released outright. A properly designed alternative for the group with violations and no new offenses, for example, might have a significant effect on bed space without endangering public safety. Although it is probably neither desirable nor politically feasible simply to release the automatic transfer (automatically tried as adults) and violent groups, their members stay in detention the longest while their cases are being resolved. It may make sense to try to reduce those times by expediting case processing.

Getting the data. The data requirements of the bed chart are these: for a given time period, such as a year, the date of each admission to and release from secure detention, as well as the reason for admission (either the top allegation or the type of violation). Where the reason for admission is a warrant or a probation violation, it is a good idea also to include the top allegation, if any. Later, if one is looking at technical violations in more detail, it may be important to know whether or not there was a new offense and, if so, how serious it was.

Because both admissions and releases are handled by the same department, any detention information system will track both events. But not all the JDAI sites had computerized this information by 1993. Cook County had just installed a new information system to support the Juvenile Temporary Detention Center, and no historical data were available. (This was one reason Cook County had trouble designing its risk assessment procedures, as described above.) Sacramento County's Juvenile Hall was not automated until the following year. In both counties, information on prior admissions had to be gathered by hand from case files.

C. How Long Does It Take to Process Cases?

As noted in the *Pathways* on case processing, *Reducing Unnecessary Delay*, delays in processing can affect the use of detention bed space directly by increasing lengths



of stay, and indirectly by increasing failures to appear (FTAs) and subsequent admissions to secure detention on bench warrants. Although case processing times were not a significant issue in Multnomah County, Figure 3, generated by the National Council on Crime and Delinquency from Multnomah County data, is an effective way to show total case processing times and whether they are a problem. The graph makes the overall trend clear, and the supplementary table fleshes out the details.

Interpreting the data. During the three-year period shown, case processing times for the detained population were quite low and in fact decreased somewhat. In such a site it is unlikely that attempts to reduce those times still more would be particularly fruitful. On the other hand, non-detained cases take relatively long to complete. If further analysis distinguishing between FTA and non-FTA warrants as a reason for admission were to show that FTAs take up a significant number of beds, reducing the time it takes to process non-detained youth might have an indirect effect by reducing FTAs.

Getting the data. A report like Figure 3 requires the data in Table 2, below. At the start of JDAI, only Multnomah County could extract case-level data containing all this information from a single information system. In addition to deficiencies noted above, finding how and when the referral was completed, which involved decisions by probation, prosecution, and the court, was particularly difficult. In New York City, the worst case, the information resided on several systems that in 1993 took so much manual labor to merge that the process was not repeated until 1997.

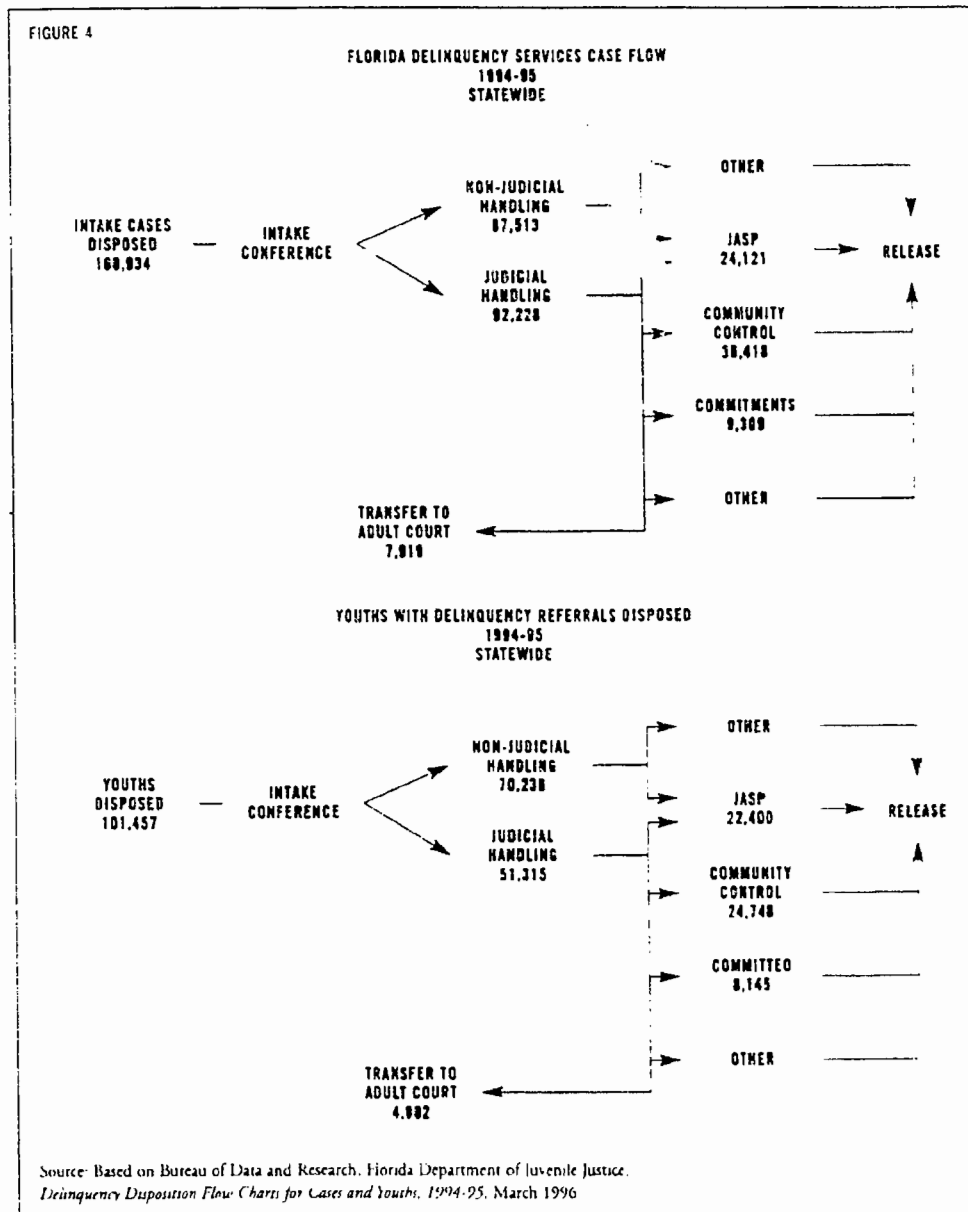
TABLE 2
DATA FOR CASE PROCESSING ANALYSES

Intake	Detention	Disposition
Intake date	Reason for detention (if any)	Date of disposition, whether dismissed, not filed, not sustained, or progresses to disposition hearing
Intake location (detention center, cited for later appearance)		
Detention decision if at detention center (here, cited and released, screened and released, or detained)		

D. What Happens to the Kids Who Enter the System?

A juvenile court judge, presented with a chart that showed the numbers of admissions to secure detention and commitments in a given year, asked a good question: If so few of the kids admitted to secure detention were committed at the end of the process, why were they being detained in the first place?

Interpreting the data. Figure 4, taken from a report prepared by the Florida DJJ, is an effective way to illustrate how a particular group of referrals (top section), and the youth who were referred (bottom section) moved through the system. Of almost 169,000 referrals, more than half were diverted and did not



reach court, and only about 10 percent led to either commitments or transfer to adult court. The bottom section of the report consolidates the information by youth, so that a youth with two referrals, for example, is counted twice in the top section and only once below. Because they are more likely to be detained and to proceed into judicial handling, and are therefore less likely to return through failed diversions or reoffenses, the committed/adult court group makes up a slightly larger percentage of youths than referrals.

Getting the data. The data required for Figure 4 are essentially the same as the data required for Figure 3, or would be if the Florida example included the detention decision and reason for it. In Florida, DJJ's information system provided all of the necessary data. As noted above, that was not the case for the JDAI sites.

The ability to follow a group of referrals (and youths) through the system requires case-level data that may be scattered through multiple information systems and may therefore be difficult to obtain. On the other hand, Figure 4, unlike Figure 3, can be approximated from summary statistics kept by the individual departments. In such an approximation, the numbers will not add up, because the referrals received during a particular year will not be the same referrals as the group that is, say, completed by a disposition hearing during the same year.

E. How Are Minorities and Non-Minorities Treated?

At the start of JDAI, a Disproportionate Minority Confinement Subcommittee was formed in New York City. The subcommittee sought to encourage discussion of this difficult topic through an analysis by the New York City Criminal Justice Agency, using 1992 data, of the decisions at key juvenile justice decision points. The results for juvenile court cases are shown in Figure 5 and explained further below.

Although Figure 5 shows statistically significant differences at several key decision

FIGURE 5
JUVENILE COURT

Decisions	White vs. Minorities		Black vs. Hispanic	
	Bivariate	Multivariate	Bivariate	Multivariate
1. Referral for petition	■	■	■	●
2. Filing the petition	—	—	—	—
3. Arraignment release	■	■	—	—
4. Fact finding	—	—	▲	—
5. Incarcerative sentence	■	■	■	—
Penetration	■	■	■	—

KEY
 ■ statistically significant
 ● marginally statistically significant
 ▲ marginally statistically significant in the opposite direction of other effects

Source: New York City Criminal Justice Agency, *Minority Over-Representation Among Juveniles in New York City's Adult and Juvenile Court Systems During Fiscal Year 1992*, February 1996

points, factual information is never enough with an issue of this kind. Discussions about race and ethnicity remained difficult. On the other hand, the analysis allowed the committee to focus on the decision points where differences were found and to consider how the gross disproportion in arrests (not shown in Figure 5) might be addressed. (The subcommittee's work is discussed in Ideas and Ideals to Reduce Disproportionate Detention of Minority Youth in this series.)

Interpreting the data. In Figure 5, the decision points are self-explanatory. "Penetration" refers to how far into the system the arrest penetrated (not referred, no petition filed, dismissed). Data were analyzed in two ways: comparisons of white vs. minority and black vs. Hispanic. The bivariate analysis considered only the decision taken at the decision point and race or ethnicity. The multivariate analysis considered the decision taken and race or ethnicity when other factors (age, arrest borough, offense, victim's age, and several measures of past offense and warrant history) were held constant. As the figure shows, the effect of race or ethnicity on the decision, when comparing white to minority youth, was statistically significant for both the bivariate and the multivariate analyses in several key decisions.

Getting the data. Figure 5, like Figure 3, requires data from decisions made by different departments, including detention decisions (in New York City, the prosecutor files a different type of petition if detention is sought). It also requires additional data for the information held constant in the multivariate analysis—demographic information about the youth, the top alleged offense, the youth's warrant and offense history, and the victim's age. In New York, as already described, tracking a single referral through multiple decision points required a complex merging of data from a number of systems. Fortunately, each system had enough detail to provide the necessary additional data.

F. What Results Can Be Expected from Reform?

Cook County, like the other sites, focused initially on developing and then on monitoring and adjusting a screening instrument to control the "front door" to detention. As other populations were reduced, attention shifted to how probation violators' use of detention beds could be reduced.

Two possible strategies were under consideration: divert warrant cases (juveniles arrested for FTA) released by the court at the detention hearing, or lower the length of stay for all violation cases. Cook County asked the National Council on Crime and Delinquency to analyze the underlying data and help decide which strategy would be more effective.

The analysis found that the warrant group that would be released at the detention hearing stayed in detention for only some 1.5 days. They therefore occupied few beds. Moreover, this group did not seem to share any special set of characteristics that would make them easy to identify ahead of time. On the other hand, as Figure 6 shows, lowering length of stay (by reducing case processing times) either for the entire probation violation group or just for the warrant group would have a significant effect. With these numbers, Cook County focused on length of stay; detention time preceding the actual probation violation hearing has been reduced from 15 days to less than a week for many youth.

Looking further at the probation violation group, Cook County went back to the data to explore another idea: a graded response to violations, ranging from administrative sanctions for minor violations to court-ordered detention for serious repeat violations. A "step-down" system for probation violators was introduced, with court approval, authorizing probation staff to release certain violations to less restrictive alternatives as soon as such a nonsecure option was available.

Interpreting the data. The analysis shown in Figure 6 first classifies probation violators into three subgroups that might logically be treated differently: all violation of probation (VOP) admissions except those with violent felonies or those being tried as adults, all VOPs except those with any kind of felony offense, and all VOPs with no new offense. (Because these groups overlap, the numbers do not

FIGURE 6
ESTIMATED IMPACT OF DECREASING VIOLATORS OF PROBATION
LENGTH OF STAY IN DETENTION IN COOK COUNTY

	Average VOP Per Month	Average LOS (Days)	Average Daily Beds Used	Average Daily Beds Saved
a) VOP excluding those with violent felonies or automatic transfers				
Present LOS	152	25	125	—
Decreased 7 Days	152	18	90	35
Decreased 14 Days	152	11	55	70
b) VOP with no new offenses or with new misdemeanor				
Present LOS	73	24	58	—
Decreased 7 Days	73	17	41	17
Decreased 14 Days	73	10	24	34
c) VOP with no new offenses (warrant cases)				
Present LOS	60	24	47	—
Decreased 7 Days	60	17	34	13
Decreased 14 Days	60	10	20	27
All violators of probation				
Present LOS	171	28	157.5	—
Decreased 7 Days	171	21	118	39.5
Decreased 14 Days	171	14	79	78.5

Source: National Council on Crime and Delinquency

add up to the numbers in the last group, all VOPs.) For each group, and for all VOPs, the number of beds is then calculated based on current lengths of stay. Finally, the number of beds that would be used and the savings in beds are estimated if the length of stay were reduced by seven days and by 14 days.

Looking just at the bed savings if length of stay is reduced by seven days, where the estimated savings for all VOPs is 39.5 and the estimated savings for each subgroup are 35, 17, and 13, it can be seen that Cook County's solution of shortening the time before the violation hearing for all VOPs achieved the greatest expected impact. Exploring the different types of warrant case was an extension of this analysis, resulting in a further refinement of policy.

Another important benefit of this analysis was that its estimate of the impact of a planned policy change on the detention population provided a quantified goal against which progress could be measured. Without such a goal, it can be difficult to determine how successful the policy change is once it is implemented.

Getting the data. The data requirements for Figure 6 are the same as for Figure 2 (the bed chart), with the addition of the top charge, if any, for those admitted to detention because of a VOP. As indicated above, Cook County did not have this data until it first installed an interim data collection system that gathered screening information, as described above, and then combined the screening information with admission and release dates from a separate information system. On the other hand, it was not until the screening instrument was working smoothly that Cook County was ready to move on to other major policy changes affecting VOPs.

Cook County's data does not distinguish among types of warrant at admission. Although not significant here, this inability to distinguish among bench warrants for FTAs at the initial hearing, bench warrants for FTAs at subsequent hearings, and warrants for noncompliance with the terms of probation was common across the JDAI sites' information systems. It became a problem for sites that wanted to explore the consequences of treating types of warrants differently. For instance, although Multnomah County was able to add a new code to its information system to distinguish bench warrants from noncompliance warrants, it could not analyze past case-level data to help estimate the impact of a revised bench warrant policy.

G. Do Results Match Expectations?

In Sacramento, the juvenile detention reform collaborative initiated an early resolution (ER) process for noncustody cases that was later extended to custody cases (detention early resolution, or DER). (How these reforms came about is discussed in some detail in Reducing Unnecessary Delay, in this series.) The Probation Department expected a substantial reduction in the Juvenile Hall population as lengths of stay were reduced.

Figure 7, created by the National Council for Crime and Delinquency for its interim evaluation report, shows what happened: Whereas cases resolved through DER took about 40 percent less time than cases resolved through normal procedures, as shown at the table at the top, their stay in detention, shown at the bottom, was only 20 percent less. Reduced lengths of stay in most admission categories are canceled out by the large numbers and long lengths of stay for the "post-disposition program failures" category, which were unaffected by the case processing reform.

Interpreting the data. This example from Sacramento illustrates that as reforms are implemented, it is vital to keep looking at the effects of those reforms, as reflected in quantitative data, to see whether goals are being met. Usually, it takes time for a reform to begin to work smoothly, as was the case with the Cook County and Multnomah County risk assessment instruments. Without knowing what effect is expected and monitoring whether that effect is being achieved, as Sacramento did, the reform team is operating in the dark.

FIGURE 7

AVERAGE CASE PROCESSING TIME FOR DER AND NON-DER CASES FOR DETAINED YOUTHS ONLY, APRIL 1996-March 1997

	Non-DER		DER	
	Mean CPT* (Days)	Number	Mean CPT* (Days)	Number
707 Offense	75.3	68	—	0
Violence	51.1	332	31.8	134
Weapons	29.4	35	32.6	63
Drug laws	70.1	50	40.3	70
Property	40.4	201	27.2	249
Vehicle theft	41.7	106	23.1	160
Other felony	43.9	62	24.4	53
Other misdemeanor	27.8	69	30.0	48
Probation violation/warrant/ program failure & new charge	32.4	92	26.4	131
TOTAL	46.1	1,015	28.4	908

*Case processing time is the number of days from intake to final disposition hearing.

AVERAGE LENGTH OF STAY FOR DER AND NON-DER CASES FOR DETAINED YOUTHS ONLY, APRIL 1996-March 1997

	Non-DER		DER	
	Mean LOS (Days)	Number	Mean LOS (Days)	Number
707 offense	127.5	61	—	0
Violence	29.2	361	21.0	137
Weapons	37.4	38	19.1	63
Drug laws	15.1	59	18.6	72
Property	15.9	235	18.7	257
Vehicle theft	24.3	123	22.6	161
Other felony	28.9	75	18.8	53
Other misdemeanor	11.1	98	19.9	48
Probation violation/warrant/ Program failure & new charge	20.6	96	15.8	131
Predisposition program failure	16.5	118	11.5	10
Postdisposition program failure	21.1	410	37.3	175
Probation violation	15.6	325	15.9	117
Warrant	13.0	146	14.6	140
Remand/court hold	15.6	308	10.8	33
Transfer in	25.1	34	16.1	15
TOTAL	25.5	2,487	20.6	1,412

Source: National Council for Crime and Delinquency.

It should also be noted that turning raw data into illustrations of areas of potential concern is a complicated process in itself. In Figure 7, for instance, an initially puzzling result (case processing time fell much more than length of stay) was explored by looking at the data in other ways. When the Probation Violation/Warrant/Program Failure and New Charge group was broken apart into the separate predisposition program failures and postdisposition program failures groups, the reason for the discrepancy was revealed: a high number of post-disposition failures.

Turning raw data into illustrations of areas of potential concern is a complicated process in itself.

Sacramento has been able to call on an outside consultant knowledgeable about the local justice system to help formulate questions, analyze raw data, and interpret answers. Sacramento's raw data is also very accessible, and reports are easy to generate. But turning raw data into a focused presentation of summarized statistics takes time and usually requires a broad knowledge of the jurisdiction's processes and goals. With limited access to the outside consultant, and with limited in-house resources for data analysis and presentation, Sacramento's new reliance on data-driven solutions has created a new backlog: keeping up with requests for data.

Getting the data. Figure 7 needs the same data as Figures 2 (the bed chart) and 3 (case processing times), with one added variable to identify whether or not the case is ER/DER. In 1992, Sacramento created a stand-alone computer application in which data covering each decision point from intake through disposition for each "booking" and most noncustody petition cases were entered manually. This resource allowed Sacramento to analyze its detention population and case processing times. But Sacramento did not allocate resources to add new features to its "interim" data collection system as new programs like ER and DER were added. Until an outside consultant added new fields in late 1997, it was difficult to identify ER and DER cases and hearings.

H. Are There New Issues to Address?

The problem of placement failures in the preceding example was one Sacramento had been aware of, as the data showed that placement failures overall (not just for DER) were taking an increasing number of beds. This growth was negating the effect of other reforms on the Juvenile Hall population. When the detention reform collaboratives met in early 1997 to identify and assign priorities to major system gaps, information like that in Figure 8 was presented to illustrate the placement problem. As a result, the placement problem was moved into the department's list of top 10 priorities.

This example underscores the fact that reform is a continuing process, because the local situation continues to change for reasons not anticipated when the reform began. Last year's priorities will not be this year's priorities, and the reform team must continue to go back to the data to see not only whether new policies are having the desired effect but also whether new trends must be addressed.

Interpreting the data. Figure 8 shows that although the number of placement dispositions ultimately returned home grew by 72 percent from 1990 to 1996, their percentage of total placement dispositions did not change very much. Placement failures were another story. Their numbers increased 284 percent over the same period, and their percentage of total placement dispositions grew from under 16 percent to over 42 percent.

Getting the data. The data for Figure 8 came largely from paper sources. Although placement dispositions and releases to placement from secure detention are available on the data collection data set, those data did not include years before 1994 and did not record placement outcomes. As JDAI progressed and as policies were refined, increasingly detailed data were required. The numbers, though, were usually small, as they are here, and were easy to gather by hand.

FIGURE 8
SACRAMENTO COUNTY OUT-OF-HOME PLACEMENT DISPOSITIONS, 1990-1996

Year	Placement Dispositions			
	Placement Failures		Wards Returned Home	
	Number	Percent*	Number	Percent*
1990	63	15.8%	61	15.2%
1991	94	17.7%	86	16.2%
1992	150	27.7%	117	21.6%
1993	268	45.8%	102	17.4%
1994	255	52.5%	97	19.9%
1995	252	51.9%	96	19.7%
1996	242	42.6%	105	18.5%
Yearly Average	189	36.8%	95	18.5%
% Change		284.1%		72.1%

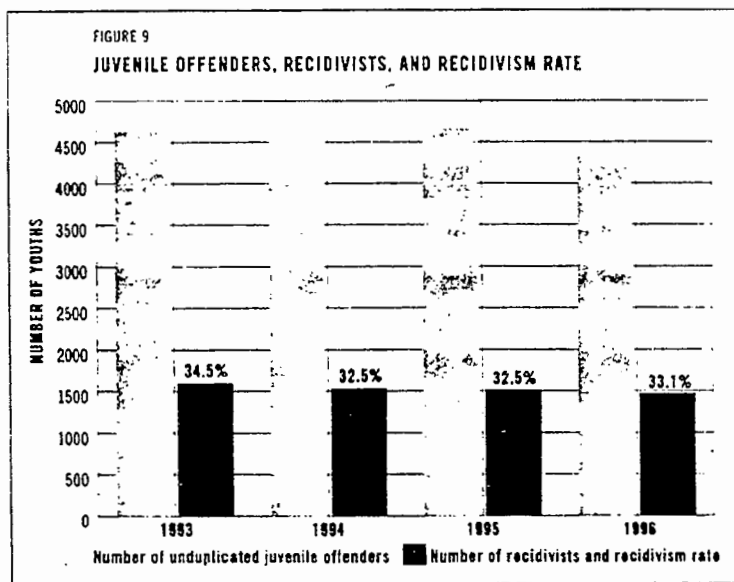
*Indicates % of total placement dispositions

Source: Sacramento County, Problem Identification and System Assessment, 1997

I. Is Public Safety Affected?

There are two accepted reasons to keep a youth in secure detention: to make sure that he or she appears in court and to make sure that there is no reoffense prior to disposition. The reoffense rate is a potential area of concern to a broad segment of the community. Multnomah County, like the other JDAI sites, knows how important it is to keep the reoffense rate from growing as the detention population is shrinking and how important it is to disseminate the data to concerned constituencies.

For instance, in the spring of 1998 the Department of Juvenile and Adult Community Justice compiled a presentation for a lay audience that included Figure 9, showing that the rate of recidivism (defined here as reoffense within 12 months, not as reoffense during the processing of a previous referral) for juvenile offenders with a felony or misdemeanor referral had remained stable over the JDAI years.



months, not as reoffense during the processing of a previous referral) for juvenile offenders with a felony or misdemeanor referral had remained stable over the JDAI years.

Getting the data. To get data for this report, you must choose each juvenile with either a felony or a misdemeanor referral from 1993 through 1996 and then determine whether that youth had a previous felony or misdemeanor felony whose date was within a 12-month period of that referral.

These statistics are somewhat complicated for a computer to generate and require technical resources that the JDAI sites initially lacked. Once the value of data for planning became clear, they began to add the resources that they needed to take full advantage of their data.

SUPPORTING DAY-TO-DAY OPERATIONS WITH TECHNOLOGY: EXAMPLES

A. Some Interim Steps

At the start of JDAI, the grantees' information systems were fairly typical: separate departmental systems that no longer met needs, that relatively few people could access directly, that could not easily produce the type of reports required for planning, that did not support the day-to-day communications of staff, and that in several cases were based on technology that could no longer be maintained. JDAI reforms exacerbated the difficulties in two ways. First, as described above, these older systems could not support new high-profile programs like risk assessment instruments and alternatives to detention. Second, as staff began to communicate more at all levels they became increasingly aware of the lack of support for such communications in their existing information systems. Every site found ways to solve specific day-to-day operational problems quickly and relatively inexpensively with stand-alone PC applications, of which the following are typical.

Helping the expediter. To work with Juvenile Hall, court probation officers, alternative programs, and the courts to move youths to alternative locations as quickly as possible, Sacramento's new expediter needed to know every detainee's status with respect to the court case, where each was scheduled to move, and how long each had been detained. He needed to produce many court memoranda, transit orders, and other official forms to communicate with other agencies and the court. He needed to communicate with fellow probation officers about individuals in their caseloads and to report his activities and progress to management.

Unfortunately, no resources existed to expand the amount of data collected by the information system that supported day-to-day probation operations or to develop reports from the data. Having some background in computers, the expediter developed a simple PC database to record information about each detainee. From this database he can select cases based on specific criteria, such as pending placement. He can create forms with names, addresses, and other information automatically embedded. He can provide his managers and colleagues with counts of juveniles in secure detention and in alternative programs.

Although much of the data captured on the stand-alone computer application is already available on larger systems that support daily processes, the inconvenience of entering the data over again is a small price to pay when an application that supports a new process can be created so quickly.

Scoring the risk assessment instrument. Multnomah County, like several other JDAI sites, automated its risk assessment instrument. Intake officers now check off applicable criteria, risk assessment instrumental and a final score is calculated. A calculation that can be rather error-prone for humans is made simple and automatic. As this separate PC application includes the larger operational information system's juvenile identifier, the accumulated data can also be combined with data from the operational system for analysis.

Multnomah County's programming staff developed a series of stand-alone PC applications to support new programs and processes that cannot be accommodated on the information system that supports older programs and processes. Now that funding to replace that system has come through, the stand-alone applications are being folded into the larger replacement. In addition to providing immediate benefit, then, these applications served as prototypes for the future.

Managing a new alternative program. No JDAI site that created new alternative programs as part of the reform effort was able to add routines to manage those programs to the various "official" information systems designed in past years to support the procedures and programs of their time. New York City faced that problem when it opened its new expanded alternatives to detention (EATD) program. Its response, like that of several other sites, was to build a small, stand-alone PC application that tracks and reports on current enrollments (attendance lists, lists of those due in court) and generates enrollment summaries for management.

In New York, which is replacing three older juvenile justice information systems (DJJ, Probation, and Corporation Counsel), this "interim" solution is likely to be in use for several years. Because the needs of EATD can be expected to change, it was important that the consultant be able to hand the application over to Department of Probation information system staff for ongoing support and maintenance.

B. Some Longer-Term Solutions

The goal: An ideal juvenile justice information system. An ideal information system to support juvenile justice reform provides technical tools to line staff that help bridge the fragmentation resulting from the pre-reform, precollaborative view of the system as a group of agencies with no common mission. It therefore focuses on facilitating the flow of information through the decision-making process. (There are, of course, many other ways that technology can help individual departments, such as incident-tracking for the detention center or witness-tracking for the prosecutor or purchasing, inventory, payroll, and budgeting for individual agencies.)

This ideal information system stores, presents, and passes on information currently stored in paper files and generates all necessary official forms. Every decisionmaker has ready access—the intake screener, the detention or detention alternative program admission staff, the prosecutor, the probation officer preparing the predispositional report, the clerk of the court who schedules hearings, the judge, and the probation officer who supervises the youth after disposition. Each sees a summary of each case requiring action and can look at the details behind each summary (previous history, risk instrument scores). When a new decision is recorded, official forms (if any) are generated, and the next decisionmaker in line is automatically alerted. Because staff at all levels in different agencies use the system and not everyone should see everything, confidentiality requirements are strictly enforced (and are seen to be enforced). The data captured during daily operations is used later for planning and assessment.

Obstacles and progress in reaching the goal. By the end of JDAI, all of the sites had made great progress toward implementing their own versions of the ideal system. That the road was not always easy is shown by the following example from Multnomah County.

Multnomah County is replacing the old DJJ information system and its separate PC-based applications with a new Juvenile Information Network (JIN) that will be directly accessed by professional staff. Planning has begun to enable this network to communicate electronically with the state's juvenile court information system.

At first, the new information system was a county-funded project; it was not clear when or whether the state courts would be able to work with the county on ways to share data. Then the Oregon legislature adopted a strategy of statewide systems to replace the many different county systems with similar functions. The DJJ information system was an early candidate.

For Multnomah County, this was a mixed blessing. Although working with the state court's information systems group would be easier at the state level and state programming resources would be available, the project would take longer, and Multnomah's requirements were more extensive than those of the smaller counties. It was decided that the state would build the base system and Multnomah would add its own special functions (primarily those covered by the new PC applications). But as the implementation deadline approached, changes in requirements, changes in the timing of basic modules, and differences in development strategies could not easily be reconciled. It is still not certain that Multnomah County and Oregon will have the same version of JIN.

In Multnomah County the obstacles are not technical; they have to do with conflicting objectives and plans and technical approaches. The same has been true elsewhere. In Sacramento, the different approaches and technologies are those of the court and probation. Under the auspices of reform, the two groups began to develop joint plans to link their separate information systems, but funding to do so has not been available. In New York City, where an integrated information system to support DJJ, Probation, and Corporation Counsel was planned and where such an approach is supported citywide, by the time funding came through the participating departments had begun to develop their own separate solutions, thus complicating the replacement system. Only in Cook County, where a strong judge became a champion of an integrated information system, did the different departments agree to develop a joint information system and secured the funding in a timely way. That system is now being implemented.

LESSONS LEARNED

The primary lesson from JDAI is how essential good data is to the planning process. Cook County, for example, believes that improvements in its information systems have helped the county adjust relevant policies and practices so as to have a marked impact on the detained population. Some more specific lessons learned about getting and using data for planning and assessment and about expanding or replacing operational information systems to support line staff and to better support JDAI reforms are described below.

A. Using Data for Planning and Assessment

Taking a systemic view is not easy. Most of the JDAI sites found it difficult, initially, to shift from thinking about individual cases and somewhat vague generalities to thinking about how real changes in decision making would affect real groups of youth. Taking a systems view required a shift in perspective for professionals trained to focus on individual situations of individual youths, often in an adversarial relationship with other reform participants. This shift in thinking was a gradual chicken-and-egg process in which data played a key role.

At each site, a breakthrough occurred. Sometimes, as in the judge's reaction to data on how few detainees were later committed, an outside consultant gathered and presented data that triggered a personal response in key participants in the reform. Sometimes, as with Cook County's risk assessment instrument, a new program did not have the intended result.

Sharing data isn't easy either. If reform requires a systemic view, and a systemic view requires data about the whole system, then in juvenile justice, where "the system" is a group of separate departments and agencies, it follows that information about each department's decision making must be shared. There is always concern about sharing confidential case-level data to generate aggregate statistics, and non-juvenile justice agencies like education and child welfare often have legal barriers to doing so that must be resolved through special agreements. There is also a natural tendency, to which JDAI sites were not immune, to keep details about

decision-making processes confidential as well. In JDAI, this initial reluctance to share began to die away as collaboration and trust grew and as the first attempts to share data did not, in fact, lead to finger-pointing.

Gathering data from community organizations whose information systems, if they exist, will be separate from county information systems in at least the near future, can be approached in several ways. In Cook County, requests for proposals from community partners who wished to develop alternative programs specified requirements for data to track program use. In Multnomah County, service providers have been included in the information system planning process.

Define reform goals clearly. For example, a clear definition of who will be placed in a new alternative to detention and how much the detention population should be reduced as a result will determine what data should be collected to monitor the program and how the data should be presented and interpreted. Cook County's analysis of the bed space devoted to probation violators and how their bed utilization should decrease with reductions in case processing time is an example of clear, quantifiable, measurable expectations.

Start small and stay focused. At the beginning, as sites first began to use data for planning, there was a tendency to look at everything at once, or to investigate areas the collaborative could not affect directly. The sites that were most successful in using data for planning learned to look at an area of concern, like specific detained populations, to identify possible problems; then to develop policies or programs to address those problems; and finally to monitor the success of the policies or programs, making mid-course corrections as required. The amount of data required was generally rather small, especially at first when the focus was on the front gates and was usually available on existing information systems or fairly easy to collect from paper files. Concentrating on the meaning and accuracy of a small amount of data also helped the sites get started on the learning curve.

Start with the data you have. It was not always possible to get planning data from existing information systems, either because it did not exist on those systems or because the collaborative had no access to the technical resources that could make it available. Thus in every case, additional data had to be collected from

paper files or reports. Where data from existing systems was used, however, fewer problems arose in reconciling different sets of statistics than where a parallel, and redundant, collection of data for reporting existed.

Develop routines to accumulate planning data. The harder it is to generate reports, the less useful an information system is to policymakers. New programs and policies must be monitored frequently, especially at first, to make sure they are being implemented correctly and are having the expected impact—which means keeping the planning data set relatively current. It should be possible to update planning data, preferably from data collected during daily operations, with a minimum of programming and manual preparation. And it should be possible to prepare a new report that aggregates the raw data into meaningful statistics in minutes.

Although every JDAI site had to devote time and resources to develop its first analytic data set, those that had to expend the same effort collecting the second or third or fourth such sets were unable to produce routine monthly reports and were thus less able to monitor reforms and make mid-point corrections. Chapter 6, “Getting Started,” describes a strategy for making data collected during routine daily operations readily accessible for planning and assessment.

Be prepared for problems. Whether the data source is an established information system or a special PC application, the first aggregate statistics will almost certainly be disappointing. Some data will be missing and other data will be incorrect. Those who gather the data will have to be alerted to the problems and perhaps retrained. The best defense is to begin looking at data as soon as possible, so the number of errors is minimized.

Technical help will be needed. In every case, the JDAI sites were hampered by a lack of technical help of the following kinds (see “Getting Started” for more detail):

- *Help from people who understood how existing information systems stored data, what the pertinent data fields actually contained, and how to extract the data for planning.* The more information systems involved, the more such help was needed. It goes without saying that where data must be drawn from different information systems, collaboration among agency MIS departments is also required. In

Multnomah County, both the DJJ technical staff and the county MIS staff (who maintained the DJJ information system) were involved in the planning for the initiative, which fostered an ability to work together throughout.

- *Help to develop ways to gather and store data that is not available on or accessible from existing information systems.* The JDAI sites found different ways to fill these needs. Multnomah County used its own technical staff to add stand-alone PC programs to gather data on new programs. Cook County, with no technical staff to draw on, acquired a data collection package from an outside consultant.
- *Help to analyze and present data.* Having a good information system does not automatically mean that the data is put to good use. Raw data must be transformed into graphs, tables and reports that clarify issues and suggest solutions. The JDAI sites have found consultants especially valuable, both to guide them in their initial forays into using data and to conduct special in-depth studies. Those that have added some local analytic capability, like Multnomah County, have also been better able to monitor change routinely and respond to questions that arise from day to day.

B. Supporting Day-to-Day Operations

Change takes time. Faced with the need to replace older systems or to automate areas not previously automated, like Sacramento's Juvenile Court, every JDAI site made significant progress. How much depended on where they began: their organizational structure, their existing technology, and their technical resources and funds. In every case, though, the process took much longer than expected.

Every site had a substantial amount of thinking to do about how new information systems should behave and what they should do. Although it would seem that Sacramento, automating all court functions for the first time, would take the longest, both Cook County and New York City had even more planning to do, because they were replacing departmental systems (that no longer matched even the individual departments' programs and procedures and priorities) with a single system.

Another complication was budget. In New York City, in particular, it took several years to find funds even to start the replacement process, by which time the

departmental systems had become virtually unusable and each department had begun to find its own solutions.

JDAI collaboration can facilitate change. Each agency has its own technologies and approaches, its own terminology, its own priorities, and its own technical staff. Confidentiality of data, too, is a very real concern, even where legal barriers to data sharing do not exist. Before a department can send data electronically to another department's information system, the receiving department must prove to the satisfaction of the sending department that its own systems will protect confidentiality.

Although many barriers still exist to interagency communication, JDAI sites found that the reform collaborative could be a catalyst for resolving the "people" issues of interagency cooperation, joint planning, and confidentiality for information systems projects. Even where departments and agencies must rewrite their own information systems before addressing the thornier issue of cross-agency data-sharing, discussions between departmental information systems staff have been initiated, and collaboration among these critical groups is developing.

Plan for continuing change. Information system budgets tend to favor the traditional "big bang" projects that have caused so many older systems to become obsolete and forced jurisdictions to build costly replacements. Because needs will continue to evolve as laws and policies change, a new information system without resources to evolve with them will itself soon become outdated.

Chapter 6

GETTING STARTED

A. Data for Planning and Assessment

Planning and assessment require a set of planning data, a way to get at the data, and resources to do so. All are described here.

The data. The data required to plan and monitor specific reforms will, of course, vary by circumstances. However, a set of basic case-level data, summarized in Table 3, will help plan and monitor juvenile detention reform as a whole.

Luckily, a site can (and probably should) begin planning with only some of this data, such as intake and secure detention data.

Accessing the data. First, the data must, of course, be available in electronic form. If there are no information systems, or if, as is more likely, existing information systems have gaps, then a PC-based data collection application like those used by Sacramento and Cook County can be bought or built.

Information systems that support day-to-day operations design their data storage so that all the information about a person can easily be retrieved to answer questions about, say, a youth's referral history.

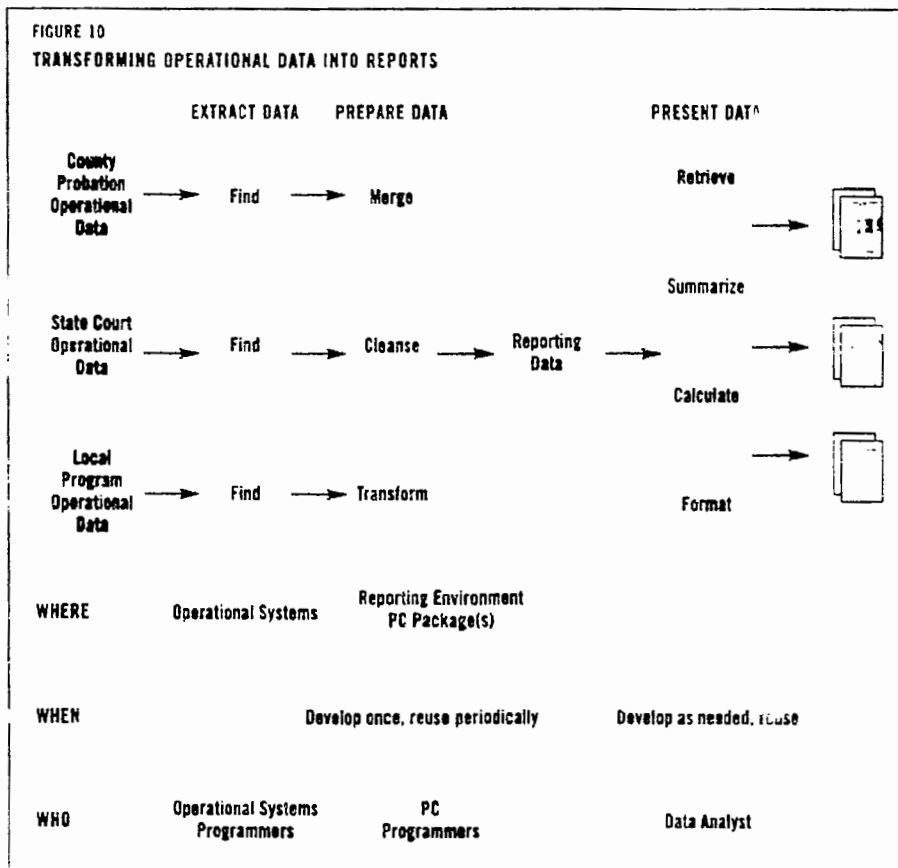
For planning, though, data about individual referral histories is summarized across key decision points either by time (for instance, how many admissions to secure detention occurred in March 1998, by race and also by top allegation) or by group (for instance, of the juveniles arrested in 1998, how many were admitted to secure

TABLE 3
DATA FOR PLANNING AND ASSESSMENT

Youth Variables	Court Variables	Detention Variables
Unique identifier	Arrest date	Condition type (secure detention, shelter, day report)
Date of birth	Arrest reason (top charge)	Admission date
Race/ethnicity	Intake date	Admission reason
Gender	Intake location (detention center, regular)	Release date
	Intake status (on probation, preadjudication.)	Release reason
	Intake decision (divert. send to District Attorney)	Release to
	District Attorney decision date	
	District Attorney decision (petition, no petition)	
	District Attorney top charge	
	Hearing date	
	Hearing type (major hearings only: detention, arraignment, fact find, disposition, violation)	
	Hearing outcome (including failure to appear, bench warrant)	
	Top charge sustained, if any	

detention, how many had petitions filed, and how many proceeded through the system to a disposition hearing).

It is difficult to aggregate person-specific data for reports, which is the main reason that it takes so much time and money to develop each new report. A far simpler solution is to reorganize the data into a format more suitable for reporting. Sometimes the results of this process are simply called "the PC I do my reports on." If data from a number of information systems is reorganized and then accessed by a variety of fairly sophisticated reporting tools, the results are sometimes called a "data warehouse" or a "data mart." Because the most important thing is to begin to look at and understand the available data, a jurisdiction should usually start with something small and simple even if it knows that more sophisticated reporting methods will eventually be needed.



The standard process for making operational data available for reports is shown in Figure 10, whether the result is a sophisticated data warehouse used by thousands of people or a simple PC-based application used by one person. The left circles show existing databases, each of which may reside on a different type of hardware. Programs developed once and reused when needed extract case-level data (about each referral or court case and about the youth involved) from these databases and, without changing the data, move it to another location, usually a PC. (For newer databases, data can be requested directly from the PC, so no programming is required.)

At the PC, other routines, developed with a standard commercial database tool, merge the extracts, identify and resolve data discrepancies, calculate and group variables (calculating age at admission or length of stay, for instance, or grouping offense codes into categories), and then store the data in a PC database that is organized for reporting. These PC programs, too, are written once and reused as needed. Finally, commercial reporting tools that are designed for non-programmers create tables and graphs as needed.

Necessary resources. To collect the planning data in Table 3 and prepare it for use as shown in Figure 10, the minimum resources needed are:

- An up-to-date PC with plenty of disk storage; commercial software like Microsoft Access to merge and reformat case-level data; reporting or statistical software like SPSS, Access, Excel, or Crystal Reports to generate reports; and a high-quality printer—about \$5,000 total.
- Programming help:

To gather existing data. Data stored in systems that support day-to-day operations may be pulled down through programs that run on the PC or extracted with programs that run on the same equipment as the operational system. You will need about a week of time for each data source from someone who understands the database and the data. A programmed extract requires perhaps another week from a programmer familiar with the operational database.

To merge, cleanse, and reformat raw operational data on a PC. This will take anywhere from a week to a month of analysis and programming and up to \$10,000—depending, again, on number and complexity of data sources. The routines will be rerun when the reporting data must be updated. Because requirements will change over time, though, it's a good idea to make sure whoever develops the routines can be called in again to make some changes. And it is imperative that you have control of all code needed to do so.

To collect data with a PC application. A simple table to collect a few items of information from an existing form can be developed in a few hours by a non-programmer with some familiarity with commercial software like Microsoft Excel (spreadsheet) or Microsoft Access (database). A more complex application that collects several kinds of information about a juvenile (such as one or more referrals and one or more admissions/releases) can take anywhere from a few weeks to a month and should be written by someone with prior experience developing similar applications. An experienced programmer will charge \$5,000 to \$10,000, again depending on complexity.

Remember, a new data collection application may require new forms or procedures, in which case those who will complete the forms and carry out the procedures must be trained.

To translate the collaborative's information requirements into easy-to-understand reports and to help interpret the results. Unlike the previous tasks, analyzing and presenting data is an ongoing but not necessarily a full-time task. Candidates range from a staff member who knows the juvenile justice system and has some interest and background in creating reports to an experienced researcher with a background in juvenile justice and statistics, recruited from a county or court research group, a local college or university, or a consulting organization. It can be effective to pair an interested staff member who knows the organization and who creates routine reports with an experienced researcher who knows juvenile justice in general and who carries out periodic analyses.

B. Information Systems Supporting Day-to-Day Work

It takes planning, time, money, and technical resources to develop the type of juvenile justice information system described above, particularly if data will be moved across departmental boundaries. How much of each is required depends on staff size, number of departments involved, and existing human and technological resources. If an existing information system can be expanded or made to transfer data to and from another information system, or if more line staff are given equipment to have access to it, significant gains can be achieved for relatively little. If an information system must be replaced or built from scratch, the costs will be significantly more.

This report is not the place to discuss the planning and implementation of large information systems. Suffice it to say that the reform collaborative must make sure that its needs are addressed during information systems planning. The collaborative should therefore include someone who can influence each department's information systems budget. It should also involve key information systems representatives from each department.

As new programs and policies are implemented, interim stand-alone applications will probably be necessary, either to support new programs and processes or to gather data for planning. Even if an outside consultant will develop these applications, the information systems staff should be consulted to make sure that there are no conflicts with information systems plans. Ideally, an interim application will serve as a prototype for changes to the larger information system.

RESOURCES

- For an excellent overview, see Lawrence P. Webster, *Automating Court Systems*, National Center for State Courts, 1993 (www.ncsc.dni.us).
- For information on court technology issues ranging from articles and vendor lists to links to other web sites, see the National Center for State Courts, www.ncsc.dni.us.
- For articles on technology in government, see the monthly publication *Government Technology*, or www.govtech.net.
- The best-known juvenile justice information system that supports multiple agencies through integration of common data is JOLTS (Juvenile On-Line Tracking System), developed by the Maricopa County, AZ, Juvenile Court and later adapted by several software vendors to fit the needs of other jurisdictions. Gortlieb & Wertz of Indianapolis, for instance, have adapted JOLTS for Broward County, FL, and for Indianapolis.
- For a discussion of ways to overcome legal barriers to data sharing, see Mark I. Soler, Alice C. Shotton, and James R. Bell, *Glass Walls: Confidentiality Provisions and Inter-Agency Collaborations*, Youth Law Center, 1993.
- For examples of tables and graphs that answer key juvenile detention reform questions, see National Council on Crime and Delinquency, *Juvenile Detention Alternatives Initiative Interim Summary Evaluation Report*, January, 1998.
- For details about the disproportionate minority representation study in New York City discussed above, see New York City Criminal Justice Agency, *Minority Over-Representation Among Juveniles in New York City's Adult and Juvenile Court Systems During Fiscal Year 1992*, February 1996; available through the Criminal Justice Agency, 52 Duane Street, New York, NY 10007.

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