



U.S. Department of Justice
Office of Justice Programs
Bureau of Justice Statistics



State and Federal Corrections Information Systems

*An Inventory of Data Elements and
an Assessment of Reporting
Capabilities*

A joint project:

**Association of State Correctional Administrators
Corrections Program Office, OJP
Bureau of Justice Statistics
National Institute of Justice**



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August 1998, NCJ 170016

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Reporting capabilities

Highlights

- The extent to which departments maintain all 207 offender-based data elements electronically for a large majority of offenders ranges from 85% to 16%. Thirty-two departments rate at or above 50% for all data elements on this rating of data availability.
- Seven departments rate above 70% of full availability for the data elements in the profiling offenders stage. Twelve do so in the committing offenders stage, as do 10 departments in the managing offenders stage and 9 departments in the supervising offenders stage.
- Departments' ability to provide statistical information about released offenders varies. All departments maintain the records of released offenders, and about half can electronically link and retrieve archived records of these offenders when they return to prison.
- Only 40 departments maintain data about the behaviors of offenders under supervision in the community; and only 38 maintain data on the crimes they commit while under supervision.
- Departments rate staffing and software problems as the most severe problems they must overcome in providing statistical information about offenders. Thirty of the 46 that rate staffing as a serious problem also rate software or data availability as a serious problem.

Thus far, the report has focused on whether, and how, corrections information systems maintain data elements. This chapter shifts the focus of the report to how departments use data elements and to the obstacles and barriers they confront in providing statistical information about offenders, and sharing data electronically.

Forms of statistical information provided by departments

Statistical information describes outcomes, activities, or events pertaining to groups of offenders or to a corrections system as a whole. Such information may be used for many purposes—such as profiling the composition of offender populations; developing management and budget plans; responding to inquiries from the press, academics, or law makers; and developing corrections performance indicators. Questions such as, “How many offenders are in prison for robbery at yearend?” are commonly requested pieces of statistical information that profile offender populations. Answers to questions such as, “How many offenders who were released from prison during 1995 returned to the prison from which they were released within one year of their release?” are often used

for evaluative purposes, either implicit or explicit. Queries about “the proportion of all offenders who remained drug-free during the past year,” or “the proportion of eligible offenders who were involved in prison work or training programs during the past year” often are asked as indicators of the degree to which a corrections system achieved a particular goal.

Information officials report that departments receive many different types of requests for statistical information. The most common are for summary statistics about specific groups of offenders. In addition to internal departmental requests for information from corrections managers, departments also regularly provide statistical information to governors, legislators, and officials in other State agencies (e.g., State auditors, departments of education, mental health, or labor). Such summary information is used for a variety of purposes: for scheduling (courts), assessing suitability of offenders for placement (halfway houses), sentencing and criminal investigations (district attorney’s offices), locating “dead-beat dads” (social service agencies), forecasting prison population (State planning agencies), and verifying benefits (Social Security Administration).

Federal agencies request summary statistical information regularly from corrections departments. The Bureau of Justice Statistics requests summary data on several surveys of corrections populations: The National Prisoner Statistics (summary data on prison admissions, releases, and stocks), the Parole Data Survey (summary statistics on offenders on parole and other forms of post-incarceration supervision), and the Probation Data Survey (summary statistics on offenders on probation). For these particular surveys, departments are required to provide statistical information that is based on external standards or definitions. Thirty-eight departments, for example, provide data to the Bureau of Justice Statistics’ National Corrections Reporting Program, which requires them to meet BJS definitional standards for counting offenders admitted into or released from prison, their form of admission, sentences imposed, and method of release. Most departments that submit data extracts to the BJS reporting program are able to meet these definitional standards. Departments that are unable to meet the definitions provide reasons why they cannot do so.

Departments also respond to requests for data extracts that requesters of the extracts intend to analyze for their own purposes. Such requesters include researchers, newspapers, commercial banking systems and other private companies. Data extracts are provided on diskette, tape, or other medium, or via File Transfer Protocol. (For example, in Oregon, several companies purchase data tape from corrections departments and resell them to other entities looking into criminal histories of potential employees.)

Availability of data

Information systems cannot easily fulfill requests for information if the data are not readily available for analysis or for sharing with other jurisdictions. Maintaining data elements electronically for all (or most) offenders allows for greater data availability and facilitates responding to statistical inquiries. The Inventory rates data availability using an index that measures the extent to which departments maintain data elements electronically for a majority of offenders (more than 75%). The availability index ranges from 0% to 100%. A rating of 100% means that a department maintains all data elements in electronic form for the majority of offenders (full availability), while a rating of 0% indicates that a department does not collect any of the data elements being rated.

To obtain a department's score on the availability index, each data element in a set of elements is given a value of 3, 2, 1, or 0, depending on how the department maintains the data element. High-availability data elements (maintained electronically for more than 75% of offenders) are given a value of 3. Medium-availability data elements (maintained electronically for less than 75% of offenders) are given a value of 2. Low-availability data elements (maintained in paper form only) receive a value of 1. Finally, no-availability data elements (a department does not collect the element) are given a zero.¹ After each element is scored, the sum of the values for a group of elements is computed. This sum, also known as a department's availability rating, is divided by the total number of points that would be obtained if all data elements were maintained as high-availability data elements and then multiplied by 100%.

For example, for the 207 data offender-based data elements, Colorado receives an availability index of 83% of full availability. Colorado receives a total of 518 points as its availability rating out of a possible 621 points, if it maintained all data elements as high-availability data elements. The rating of 518 is obtained from: 168 high-availability elements (168 x 3 points = 504 points), 7 medium-availability data elements (7 x 2 points = 14 points), and 32 no-availability data elements (32 x 0 points = 0 points). The sum of the points, 504 + 14, equals Colorado's score of 518. Finally, 518 divided by the 621 possible points yields the availability index of 83% when multiplied by 100%.

Ten departments receive a full-availability rating above 70% (table 6.1) for the entire set of 207 offender-based data elements. Nine of these departments are among the 40 that maintain data elements for all 4 stages. One of them is among the 12 that maintain data on 3 of 4 stages. Twenty departments are rated at less than 50% of full availability.

Generally, a department's availability rating increases with the number of data elements collected. For example, Iowa collects all but 5 data elements and

¹This scoring system is described on pages 10-12 in the "Introduction" to this report.

rates at 80% of full availability, and Arizona, which rates at 85%, has all but 19 data elements (table 6.1). Many of the departments that rate below 50% of full availability collect less than half of the data elements. The two lowest rated departments, Alaska and the District of Columbia, do not collect a substantial number of data elements (157 and 156, respectively).

Within the four stages of corrections processing, the availability of data among departments varies. While no department in any stage is rated at 100% of availability, some stages have greater availability than others. Within the profiling offenders stage the availability index ranges from 80% to 30% (table 6.2). Seven departments have full-availability ratings above 70% and 22 departments are at less than 50% of full availability. The committing offenders stage ranges from 92% (Iowa) to 16% (Alaska) of full availability, with 12 departments rating above 70%. One half of the departments are at 60% or more of full availability. Only 11 departments rate less than 50% of availability. In the managing offenders stage, there are ten departments rated at above 70% of full availability; while 20 operate at 50% of full availability. The full-availability ratings for managing offenders data range from 94% (Missouri) to 11% (Alaska). Twelve departments in the supervising offenders stage do not maintain in the information systems data about released offenders, and 14 do not maintain data about new crimes committed by offenders under supervision (including the victims of these crimes). For the 40 departments that do collect data about either or both of these areas, the full-availability ratings for this stage range from 93% (Arizona) to 7% (District of Columbia). Only two departments receive a rating of 90% or more of full availability. Less than a third have full-availability ratings of more than 50%.

Not only does the availability of data among stages vary, but the number of data elements maintained in high-availability form also differs. In the profiling offenders stage, no department has the capability to provide all 29 data elements in a high-availability form (Appendix G). Most departments maintain some data in electronic form. Thirteen States and the Federal Bureau of Prisons (BOP) have the capacity to provide all 11 data elements on demographic characteristics in a high- or medium-availability form (not shown in a table). Most departments maintain very few of the elements on socio-economic status of offenders in electronic form. Two departments (Georgia and the BOP) maintain all five data elements about family relationships in electronic form.

Most of the departments with relatively high-availability ratings in the committing offenders stage maintain a large number of data elements in high-availability form (Appendix G). However, some of these departments also maintain many data elements in a medium-availability form. For example, Ohio and Tennessee rate above 65% of full-availability, and each maintains a relatively large number of data elements in medium availability.

Table 6.1. Availability ratings for all offender-based data elements

Department	Percent of full availability	Number of data elements					
		In electronic format for—		In paper format	Not collected	Missing	Unknown
		More than 75% of offenders	Less than 75% of offenders				
Data about released offenders are within the scope of the information system							
Arizona	85%	157	2	13	19	0	0
Colorado	83	168	7	0	32	0	0
Missouri	82	164	1	17	25	0	0
Iowa	80	147	0	55	5	0	0
North Carolina	78	151	16	0	40	0	0
Florida	77	141	2	15	32	1	0
Tennessee	75	126	39	7	35	0	0
Texas	74	137	1	12	41	0	0
Alabama	72	137	5	28	37	0	0
Utah	68	110	11	70	10	6	0
South Carolina	62	107	33	1	66	0	0
Indiana	62	102	3	75	27	0	0
South Dakota	62	118	1	0	56	16	0
Montana	61	115	3	25	52	12	0
Illinois	59	104	12	28	63	0	0
Ohio	58	59	92	0	49	5	2
Oklahoma	58	99	12	41	55	0	0
Kentucky	56	74	2	93	22	0	0
New York	55	108	6	7	83	3	0
Massachusetts	53	66	48	38	55	0	0
Louisiana	52	84	14	41	67	0	1
Wisconsin	52	90	16	18	81	1	1
Oregon	50	96	7	8	96	0	0
Mississippi	50	60	23	58	14	35	1
Michigan	50	102	1	0	96	8	0
Washington	49	80	18	6	87	0	0
Arkansas	49	75	27	1	87	1	0
North Dakota	48	94	0	19	83	11	0
Virginia	48	68	7	81	47	4	0
California	48	72	2	77	54	1	1
Kansas	47	89	11	1	106	0	0
Wyoming	46	61	1	98	46	1	0
Delaware	40	49	1	101	50	6	0
Vermont	37	46	14	63	83	1	0
Minnesota	36	69	5	7	126	0	0
Nebraska	36	69	4	9	125	0	0
Idaho	36	50	20	33	104	0	0
New Mexico	31	59	6	1	138	3	0
District of Columbia	24	49	2	0	156	0	0
Alaska	16	16	21	1	157	5	7
Data about released offenders are outside the scope of the information system							
Federal Bureau of Prisons	71%	103	0	72	3	0	0
New Jersey	65	84	8	49	21	0	0
Georgia	64	91	13	11	47	0	0
Maine	59	74	10	70	22	1	1
Pennsylvania	57	83	3	51	25	0	0
New Hampshire	55	69	5	77	27	0	0
Rhode Island	55	96	0	6	75	1	0
Nevada	48	60	25	2	64	11	0
Maryland	46	49	6	87	36	0	0
Connecticut	43	60	17	16	85	0	0
West Virginia	43	59	16	0	87	0	0
Hawaii	33	45	12	0	105	0	0

Table 6.2. Percent of full availability for each stage of corrections processing

Department	Stage of corrections processing			
	Profiling offenders	Committing offenders	Managing offenders	Supervising offenders
Data about released offenders are within the scope of the information system				
Alabama	71%	70%	81%	63%
Alaska	31	16	11	12
Arizona	75	80	92	93
Arkansas	38	54	52	39
California	44	56	39	50
Colorado	80	83	92	73
Delaware	46	40	43	33
District of Columbia	41	35	17	7
Florida	69	80	78	75
Idaho	45	37	34	31
Illinois	47	55	66	61
Indiana	48	67	66	59
Iowa	75	92	72	75
Kansas	59	56	41	33
Kentucky	40	62	50	67
Louisiana	46	64	43	49
Massachusetts	57	56	69	25
Michigan	41	51	63	33
Minnesota	39	40	37	28
Mississippi	39	55	50	48
Missouri	72	82	94	73
Montana	59	63	42	84
Nebraska	54	37	32	29
New Mexico	52	34	14	35
New York	53	51	56	61
North Carolina	63	81	93	61
North Dakota	76	60	25	46
Ohio	41	66	63	52
Oklahoma	56	55	65	56
Oregon	34	63	52	37
South Carolina	66	66	84	26
South Dakota	68	67	63	41
Tennessee	60	76	68	90
Texas	48	69	85	89
Utah	64	73	60	73
Vermont	30	49	41	18
Virginia	55	60	34	45
Washington	53	58	44	36
Wisconsin	36	58	56	46
Wyoming	61	49	45	32
Data about released offenders are outside the scope of the information system				
Federal Bureau of Prisons	75%	74%	72%	Not applicable
Connecticut	37	56	38	Not applicable
Georgia	60	70	58	Not applicable
Hawaii	38	47	14	Not applicable
Maine	59	57	60	Not applicable
Maryland	37	53	51	Not applicable
Nevada	40	58	40	Not applicable
New Hampshire	62	61	51	Not applicable
New Jersey	57	71	62	Not applicable
Pennsylvania	68	60	63	Not applicable
Rhode Island	59	62	56	Not applicable
West Virginia	53	36	46	Not applicable

In general, departments maintain conviction, sentencing, and commitment data with high availability. In the area of sentencing information, departments generally have much higher capacities to produce all elements in electronic format. Nine departments (Alabama, Colorado, Florida, Georgia, Missouri, North Carolina, Washington, Oregon, and South Carolina) maintain all 13 data elements electronically on sentencing information, and 26 departments have all three data elements on type of commitment in high-availability form (not shown in a table). No department maintains in high-availability form all of the 14 data elements about the criminal incident.

In the managing offenders stage, seventeen departments maintain a third or more of the data elements in paper, or low-availability form (Appendix G). In general, these data describe program participation and outcomes, drug testing, medical treatment, and misconduct and infractions. Data elements that measure the form of release, good time and other adjustments to sentencing, post-commitment movements and offender registry are maintained in high-availability form. Data about post-commitment transfers, and methods of release from prison are maintained by all 52 departments, and a majority of departments have a high availability for data about movements, good-time adjustments, and victim notification requirements.

No department in the supervising offenders stage maintains all the data elements in high-availability form (Appendix G). Many of the departments either do not collect sizable numbers of these data elements, or maintain data in low-availability form. For example, the District of Columbia does not collect 42 out of 45 data elements; Wyoming maintains 43 out of 45 data elements in paper form. The data with the highest availability are those that describe offenders' behavior on release and the response by corrections to violations of conditions of supervision. Few departments maintain high-availability data about victims of crimes committed by released offenders.

Departments are not rated on a full-availability measure for facility-based data elements such as program management, medical services, staffing, and facility costs. Rather, their ability to maintain these data elements electronically is distinguished from their ability to maintain them on paper. Fourteen departments maintain more than half of the 15 facility-based data elements electronically (Appendix G). But, 26 other departments did not have at least 10 of the data elements. Many departments report that they do not maintain data electronically on program management, medical services and staffing, and costs of facilities.

Capacities to link and share data

To answer many statistical queries, departments need to link data from several databases or files, or to databases maintained by other sources. For questions related to offenders' histories, for example, departments need to link current records with the records of past behaviors. This may involve extracting archived records from tapes or other media and linking them to the existing case-management database. For questions about offenders' behaviors when they are outside the jurisdiction of correctional institutions—such as when they are released into the community—departments may have to link their records with those in an information system outside corrections, such as that maintained by a parole agency. This requires corrections departments to link parole records (which many do not record) to those in their database, and process the combined information to produce the desired statistic.

Respondents expressed mixed views about the need to link data across jurisdictions. Some maintain that information on inmate movements after release (such as the police arrest data) is the only area of interest for sharing information across jurisdictions. Others either see no need to share information across jurisdictions, or think the task is virtually impossible without a really thorough understanding of the definitions and content of the information. Still others are more expansive in their views about the need to share information with departments in other States and the need to conduct comparisons across States. “We get tons and tons of questions from other States about the number of offenders who have some characteristic, and having data from those States would facilitate comparisons” is an example of this perspective.

The types of linkages most frequently cited were those to their counterparts in other corrections departments. While one official noted that electronic linkages to share data would be valuable, he stressed that direct connections with the human resources of information systems were most crucial for him. He would like to have e-mail and telephone contacts with other information systems officials so that he could ask simple but very important questions about creating statistical information. Having contacts in other departments to discuss questions such as: “What do you do?” or “How do you create that measure?” or “What data are in that other data base?” or “Who is the best person to talk with in your system?” are extremely valuable in his view and the view of some other respondents.

Corrections departments link databases in a variety of ways. The most advanced types of linkages occur when different agencies share data systems. Some departments are decentralized, but have some form of communication system to link systems across facilities. These links are generally through advanced communications systems such as LANs or WANs. But in some cases the connections among facilities involve sharing the most recent updates on

diskettes or by fax. In few departments, databases are linked by giving users from other departments query-only access.

The primary links in the departments' information systems are for users at workstations in the system (correctional officers, counselors, and personnel in the business offices). These officials are given routine access to the database tracking offenders. A considerable number of departments (23) have no links to other agencies outside of the corrections system (secondary links). But a majority (28) have connections to at least some parts of other agencies' database, typically on a query-only basis (not shown in a table). For example, beginning in 1993, the New Jersey Department of Law and Public Safety, together with the Office of Telecommunications and Information Systems (OTIS), the Administrative Office of Courts (AOC), and the Department of Corrections (DOC) implemented a plan to improve overall offender tracking whereby each could access the other's independent systems and routinely update selected parts of records. Most links to agencies, however, are not through electronic means but through hard copy reports or extracts of tapes.

The importance of working toward a goal of integrating data from all criminal justice agencies—including corrections, probation and parole offices, the courts, and the police—into one comprehensive information system for users in all these agencies was stressed by many corrections information officials. Officials also made many other recommendations for improving corrections information systems capacities to respond to statistical queries. These include: creating common definitions, unique identifiers, and other standard formats for linking records across agencies; converting systems currently on mainframe (especially state-wide systems) into client-server, stand-alone systems; transforming departmental systems into more tightly-centralized operations; and integrating all in-facility computer functions using one server or platform.

Respondents stressed that existing systems have a good history of service. But they also think information systems need to be much more flexible if they are to respond adequately and efficiently to the volume of requests for data and information. Many asserted that corrections information systems are in overall need of improvements, and better linkages, to meet the challenges of corrections change and to keep pace with technological change.

Internal capacities to extract and link archival records

The number of times that groups of offenders behaved in certain ways is often an important focus of statistical questions. For example, questions about the number of infractions committed by offenders having certain characteristics may

²New Jersey Department of Corrections. Computerized law enforcement systems in the Department of Corrections. (Trenton, NJ: Department of Corrections, Office of Policy and Planning, 1994).

involve extracting historical records and linking them to the current case-management records. “What is the average number of disciplinary infractions committed during the first year of imprisonment for offenders who entered during 1990 and stayed at least one year, and how does that compare to the same statistic for offenders who entered during 1995, after a new reform was implemented?” is a concrete example. Information systems may be structured so that individual records of disciplinary actions are stored separately from the records related to current information. Before the averages can be computed to answer this question, the information about past disciplinary infractions for offenders who had more than one infraction needs to be extracted from the historical record and linked to the current records.

A large number of important corrections events have relevant histories. Several of them include offenders’ commitments into correction facilities, movements within a jurisdiction or transfers between jurisdictions, behaviors constituting misconduct or infractions, and behaviors on release in the community. Behaviors of offenders on release in the community are particularly important for impacts of corrections policy on public safety.

Departments vary in their capacities to store, retrieve, and link data about these events. Many keep all information about these repeatable events on-line for offenders currently under correctional authority. Others also store these data and have the capability to retrieve and link this information electronically. In general—for information about prison commitments, behavior in prison, and prison releases—most departments either store on-line histories of these repeatable events or have the capacity to link archived records of these events.

Forty-six departments maintain an on-line history of an offender’s commitments into prison. Thirty-one archive commitment histories, and of these, 28 departments have the capability to retrieve and link electronically the archived records (table 6.3). With respect to information about an offender’s post-commitment movements, almost all departments (49) maintain this information on-line, while about half of these also archive this information, and 22 of this group of 26 have the capacity to retrieve and link the archived data electronically. In other categories of repeatable events, many departments either store the information on-line or have the capacity to link archived records. All departments maintain records of previously released offenders, with the majority (44) keeping these data permanently available on-line.

On data about behavior on release, 40 departments maintain data elements on the reasons for termination of supervision, and 38 departments obtain information about the new crimes committed by offenders who were released in the community. Of these 38, most (28) obtain this information about new crimes only after the offender returned to prison.

Table 6.3. Capacity of departments' information systems to retrieve and link historical data	
	Number of departments
Individual offender's record of commitments to prison	
Maintain records of an offender's commitment history on-line	46
Archive records of an offender's commitment history	31
Capability to retrieve electronically archived records	28
Individual offender's post-commitment movement history	
Maintain records of movements on-line	49
Archive records of movements	26
Capability to retrieve and link electronically archived records	22
Individual offender's record of behavior in custody	
Maintain records of an offender's misconduct/infraction history on-line	40
Archive records of misconduct/infractions	25
Capability to retrieve and link electronically archived records	20
Individual offender's record of release from custody	
Maintain records of a previously released offender	52
These records are permanently available on-line	44
Archive records of a previously released offender	28
Capability to retrieve archived records	24
Capability to link electronically archived records	22
Individual offender's record of behavior on release	
Maintain records of an offender's behavior after release from prison	40
Maintain records for all offenders released into the community	27
Maintain records for an offender returned to prison for parole violations	40
Individual offender's record of new crimes committed on release	
Collect data on crimes committed by an offender under supervision	38
Data are collected upon offender's:	
Arrest	10
Conviction	18
Return to prison	28
Other	11

The capacity of corrections information systems to store, retrieve, and link data on the supervising offenders stage may be related to the organization of corrections in particular states. Of the 12 departments that do not record information about crimes of offenders on release in the community, many are “prison only” systems.³ Other departments may be integrated corrections systems that utilized an information system other than the corrections information system to record information about offenders on release in the community. For example, in the State of Maryland, corrections is a division within the Department of Public Safety and Correctional Services. The corrections division maintains data elements on offenders in Maryland’s prisons, while the Division of Parole and Probation maintains data elements on offenders released into the community.

³Vital Statistics, American Correctional Association, 1994.

Capacities to provide statistical information

In general, the overall ability of a corrections department to provide statistical information depends upon the capabilities of each of several components of its information system. These capabilities are organized into five categories:

- *Legislative and institutional*
 - legal restrictions on access or use of data
 - legislative reforms that affect operation of the information system
 - institutional requirements
- *Hardware*, meaning the computer system that maintains software and data
 - storage capacity
 - capacity to process data
 - ability to access historical data
 - reliability (amount of downtime)
- *Software*, meaning programs that operate on the data (whether these were developed from standard programming languages, purchased off the shelf, or specific routines designed for specific tasks)
 - capability of existing software
 - capability of existing query language
 - ability to integrate data from separate files
 - ability to integrate data from separate databases
 - ability to structure data files
- *Staffing*, from data entry to management staff
 - number of current programming staff
 - lack of in-house programming staff
 - experience level of programming staff
 - ability to provide adequate training for staff
 - availability of funding to upgrade systems
- *Data*, including collection of data elements and the data stored on each
 - completeness of coverage for each data element
 - accuracy of data for each element
 - timeliness of data.⁴

Problems that arise in any one of these areas can affect the capabilities of information systems to provide statistical information. Conversely, strengths in one component of an information system may be used to overcome deficiencies in another.

⁴A copy of the questionnaire is provided in Appendix B.

The Obstacles survey asked departments to rate each component on a scale ranging from 1 (not at all) to 5 (critical problem). The most severely rated obstacle to providing statistical information is the number of analysis and programming staff (table 6.4). Across the 52 reporting departments, it receives a mean score of 3.9 (on a scale of 1 to 5) and the least variation around its mean. Funding for systems upgrades, modifications, or staffing are the second most severe barrier. Departments tending to experience this obstacle in a relatively severe manner, as reflected in a mean ranking of 3.8 and relatively little variation around the mean. Other obstacles that rank as relatively severe problems by the departments include: lack of in-house programming staff, inability to provide adequate training for staff, inability to integrate data from separate databases, and the low experience level of programming and analysis staffing. Two additional obstacles—the accuracy of the data and integrating data from separate data files—present somewhat of a barrier.

Another eight obstacles present less severe barriers. These items receive mean ratings of between 2.5 and 2.9 and include: the data completeness, legislative reforms, the structure of data files, capability of the query language, data timeliness, statistical software capabilities, ability to access historical data, and institutional system requirements, and there was greater variability around the means.

Finally, four—legal restrictions on data, capacity to process data, storage capacity, and system downtime—present relatively minor barriers to departments, as reflected in their average rankings of 2.4 or less.

The grouping of individual items into the five major obstacle categories is shown in table 6.5 with the mean category score and severity ranking of each. The group averages range from 3.6 for staffing-related, the most serious group of obstacles, to 2.2 for hardware-related obstacles, the least serious set of obstacles. Software and data problems each average ratings of 2.9. Institutional arrangements—legislative reforms, requirements to use specific hardware, and legal restrictions of the use of data—are rated at 2.6, on average.

Staffing related issues present severe obstacles, as the 3.6 average score for these obstacles indicates. The individual items within the staffing group indicate that the number of staff (too few), ability to provide for their adequate training, and availability of funding for new staff all approach very severe levels for the departments. Software problems, such as the capacity of query languages or of statistical software, and data problems, such as the timeliness, completeness, and accuracy of data elements, also present relatively severe levels of barrier.

Table 6.4. Obstacles to providing statistical information: Individual item scores

Obstacle	Mean	Standard deviation	Coefficient of variation
Number of analysis/programming staff	3.92	0.95	0.24
Funding for system upgrades, modifications, or staffing requirements	3.85	1.11	0.29
Lack of in-house programming staff	3.52	1.28	0.36
Providing adequate training for staff	3.50	1.04	0.30
Integrating data from separate databases	3.12	1.32	0.42
Experience level of analysis/programming staff	3.10	1.07	0.35
Accuracy of data	3.04	0.97	0.32
Integrating data from separate files	3.00	1.27	0.42
Completeness of data	2.94	0.96	0.33
Legislative reforms/changes	2.92	0.90	0.31
Data file structure	2.94	1.14	0.39
Capability of the query language utility	2.85	1.14	0.40
Timeliness of data	2.71	1.02	0.38
Capability of statistical software package(s)	2.60	1.14	0.44
Ability to access historical data	2.62	1.09	0.42
Institutional system requirements	2.58	1.00	0.39
Legal restrictions on access or use of data	2.42	0.85	0.35
Capacity to process data	2.16	0.93	0.43
Storage capacity	1.92	0.96	0.50
System downtime	1.92	0.90	0.47

Note: One department returned a survey for each of its two information systems, and one department did not return the survey.

Staffing, software, and data are interrelated. Having access to sophisticated database software, query languages, and statistical packages is not enough if a department lacks staff trained in the use of these technologies. Staff that are knowledgeable in the use of these software tools but lacking access to them cannot use their skills to produce statistical information. And having sophisticated software and data entry procedures is not enough if staff are not adequately trained in data collection, data entry, and other data preparation tasks.

The reported deficiencies in the number of staff, lack of funding for system upgrades, modifications (software problems), and staffing skills combine to suggest that the primary obstacle to overcome is *lack of resources*. Additional resources will allow departments to overcome these deficiencies with staffing shortages, training deficiencies, and system inadequacies as they see fit—with maximum impact on their overall capacities to provide statistical information.

Table 6.5. Obstacles to providing statistical information: Mean scores for each category of obstacles		
Obstacle category and items	Mean obstacle category score	Category ranking by severity
Legislative and institutional Legislative reforms/changes Institutional system requirements Legal restrictions on access or use of data	2.64	4
Hardware Ability to access historical data Capacity to process data Storage capacity System downtime	2.16	5
Software Integrating data from separate databases Integrating data from separate files Data file structure Capability of the query language utility Capability of statistical software package(s)	2.90	2
Staffing Number of analysis/programming staff Funding for system upgrades, modifications, or staffing requirements Lack of in-house programming staff Providing adequate training for staff Experience level of analysis/programming staff	3.58	1
Data Accuracy of data Completeness of data Timeliness of data	2.90	3
Note: One department returned a survey for each of its two information systems, and one department did not return the survey.		

Varying obstacles among departments

Departments vary in the severity of the obstacles they confront (tables 6.6 and 6.7). Individual staffing obstacles rate an average of 5, the critical level, by 8 departments. An additional 20 departments rate staffing obstacles between 4 and 5 on average, indicating a very severe obstacle. Only 6 departments rate staffing obstacles at 2 or less on average.

Software problems average slightly lower severity than staffing obstacles. Only two departments rate the 5 software obstacles at the critical level, and 12 departments rate them as very severe. An additional 20 departments rate them as a moderate obstacle.

Four departments rate the 3 data obstacles at a critical level, on average, and an additional 8 departments rate them as very severe. Eighteen departments rate the severity of data obstacles as being very little to none.

Legislative and institutional obstacles do not provide major barriers but they can not be ignored either. No department rates these problems as critical, but five departments rate legislative and institutional obstacles as very severe and 25 rate them as a moderate obstacle.

No department rates hardware problems at the critical level, and one has very severe hardware problems. Twenty-six of the responding departments rate hardware obstacles as having very little severity.

Staffing, software, and data problems tend to go together.⁵ For the 46 departments that rate staffing obstacles an average of 3 or higher, most also rated software and data problems at average severity levels above 2 (table 6.6). Of the same 46 departments, only 16 rate either software or data problems at an average of 2 or lower.

There are exceptions. In Florida and North Carolina, for example, staffing obstacles are reported to be more severe (averaging 3.6 and 3, respectively) than software, data, or hardware (2 or less on average). North Carolina recently completed a major redesign of its correctional information system to improve its capabilities. One of the models North Carolina used to redesign its system was the information system developed by the State of Florida. Both departments indicate that while staffing problems tend to be accompanied by software and data problems, information systems with the best designed software, good data, and advanced hardware can still confront major barriers in providing statistical information.

⁵The clustering of obstacles within groups of departments was addressed in more detail in a preliminary analysis based on factor and cluster analyses. The results from these analyses confirm the observations here that staffing, software, and data problems tend to cluster together, and that different groups of departments experienced different degrees of each cluster of obstacles.

Table 6.6. Mean category scores for each department

Department	Staffing	Software	Hardware	Data	Institutional/ legislative
Federal Bureau of Prisons	2.60	2.00	1.00	1.00	2.33
Alabama	3.60	2.00	3.00	2.00	2.33
Alaska	4.40	4.75	2.00	5.00	2.67
Arizona	3.20	2.20	1.00	2.33	3.33
Arkansas	3.20	3.00	2.00	1.67	2.00
California	3.80	2.00	2.00	2.00	2.00
Colorado	3.00	1.40	1.25	2.33	2.00
Connecticut	2.40	2.20	3.00	4.00	2.67
Delaware	3.60	3.25	2.25	3.00	1.33
District of Columbia	4.00	3.40	3.50	3.67	3.00
Florida	3.60	1.00	1.00	1.00	1.67
Georgia	3.20	3.40	2.25	2.00	2.67
Hawaii	3.80	3.20	3.25	4.00	3.33
Idaho	3.20	2.00	1.75	2.33	3.00
Illinois	2.40	2.00	1.75	2.00	3.33
Indiana	3.20	3.60	2.50	2.33	2.67
Iowa	5.00	4.60	3.25	3.00	3.33
Kansas	4.40	3.40	2.25	3.00	4.00
Kentucky	2.40	3.80	3.00	2.67	2.33
Maine	4.00	3.40	1.00	2.33	3.00
Maryland	3.80	3.00	1.75	2.67	2.67
Massachusetts	4.60	3.60	3.75	4.67	2.67
Michigan	3.00	2.60	2.25	3.00	3.00
Minnesota	4.20	3.40	3.00	3.33	3.67
Mississippi	3.00	2.80	2.75	2.67	2.33
Missouri	4.60	2.80	2.50	2.67	2.33
Montana	4.20	4.20	4.25	4.33	3.33
Nebraska	3.80	2.00	2.25	4.00	2.00
Nevada	2.60	1.60	2.50	2.00	1.67
New Hampshire	3.40	2.80	2.00	2.67	2.67
New Jersey CMIS	4.20	4.20	2.25	2.67	1.33
New Jersey OBCIS	4.00	2.80	1.25	2.67	2.67
New Mexico	4.20	4.20	2.50	4.67	2.67
New York	2.40	1.60	1.25	2.00	2.33
North Carolina	3.00	1.40	1.75	2.00	2.67
North Dakota	4.80	3.60	2.25	3.33	2.33
Ohio	1.80	1.20	1.50	3.67	3.33
Oklahoma	3.00	3.40	2.50	3.00	3.67
Oregon	1.80	1.20	1.25	2.33	1.33
Pennsylvania	3.20	2.60	1.25	2.67	3.00
Rhode Island	3.60	3.20	1.50	2.33	2.33
South Carolina	3.00	2.40	1.50	2.67	2.00
South Dakota	5.00	3.80	1.25	2.33	3.00
Tennessee	2.80	2.00	2.00	3.00	2.00
Texas	4.80	3.80	2.25	5.00	4.00
Utah	3.00	2.60	1.75	4.00	2.33
Vermont	4.40	3.00	2.25	3.67	2.00
Virginia	5.00	4.40	2.25	3.33	3.00
Washington	3.20	3.20	1.25	2.67	2.67
West Virginia	4.00	3.00	3.25	3.00	3.33
Wisconsin	5.00	4.00	2.00	3.00	2.33
Wyoming	3.60	4.20	3.25	3.00	3.67

Note: Louisiana did not return the survey.

Component	Number of departments* with problems described as--				
	Critical	Very severe	Moderate	Very little	None
Staffing	8	20	18	6	0
Data	4	8	22	16	2
Software	2	12	20	13	5
Legislative and institutional	0	5	25	19	3
Hardware	0	1	11	26	14

*One department returned a survey for each of its two information systems, and one department did not return the survey.

Summary

Officials in corrections information departments report that they routinely respond to requests for raw data and summary information on offenders. They also receive requests that require analysis and processing of data elements into specified formats to meet external definitions and standards. Departments use a variety of media to submit data, including hard copy, tape, diskettes, or file transfer protocols. In addition to corrections staff users, requesters of corrections data include Federal agencies, a wide range of State and local agencies, researchers, and private companies.

High-availability data varies widely among the departments and all of the four stages of corrections processing. No department has all the data elements in high-availability form, nor does any department have all of the elements that correspond to each stage of corrections processing. The stages related to committing offenders and managing offenders have the most departments with relatively high data availability index scores. Twelve departments rate at 70% or above for all 72 data elements in the committing offenders stage, and 10 departments in the managing offenders stage rate above 70%. The supervising offenders stage has nine departments that collect data about released offenders rated at above 70%, and seven departments in the profiling offenders stage scored higher than 70% on the index.

The information most available in high-availability form are data that describe offenders' demographic characteristics, conviction offenses, sentences imposed, current commitment, expected time to be served, risk assessment, classification and confinement decisions, post-commitment movements, good time and other sentence adjustments, releases from custody, reasons for terminating supervision, and the criminal justice response to supervision violations. In general, the information with the lowest level of high-availability are data describing offenders' socio-economic status, family characteristics, the criminal

incident, victim information, medical care, and employment and residence information about released offenders.

To answer statistical queries, departments frequently need to construct links among internal databases or between them and databases of other agencies. Commonly mentioned obstacles in creating links to other data systems include: existence of several platforms of different ages and data formats, which makes interfaces between them complex; lack of common definitions, unique identifiers, and other standard formats for linking records across agencies; and outdated systems that do not respond readily or flexibly to queries for information. Corrections staff also frequently noted the importance of working toward a goal of integrating all criminal justice agencies into one comprehensive information system that would be shared by all users.

A key issue for corrections information systems is the extent to which departments can record data on event histories. For example, can an information system record the number of times an offender commits an infraction, or the number of times an offender enters and exits prison during a single prison term? Data on such “repeatable events” may be required information for measuring corrections system performance. Departments generally reported that their highest capacities for storing, retrieving, and linking archived data on repeatable events for data elements related to commitments into prison, post-commitment movements, and releases from prison during a term.

Departments report that they do indeed confront several obstacles in producing statistical information. These range from the need to reformat their data to comply with standards and formats of the requester, through hardware limitations that restrict the capabilities for executing queries, and software limitations that require departments to create customized programs to generate reports and data, to shortages of experienced staff that prevent timely resolution of data requests.

Responses to the Obstacles survey confirm that the most serious obstacles encountered by corrections departments in producing statistical information are staffing-related obstacles—including the number of analysis and programming staff, their experience, and the resources to further train them. Staffing-related obstacles are closely related in severity to software applications and data constraints. Forty-six departments rated staffing obstacles as providing a serious barrier to their providing statistical information. All but 16 of these also rated either software or data as serious constraints. Relatively few departments rate either hardware or legislative and legal factors as serious barriers to producing statistical information.

