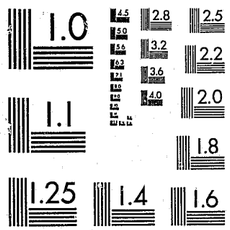

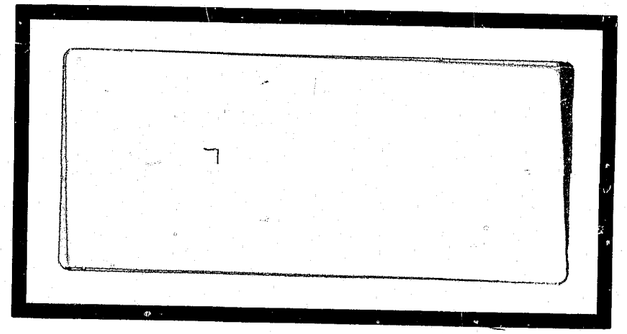

WESTAT
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NATIONAL EVALUATION PROGRAM
PHASE I FINAL REPORT
PROSECUTION MANAGEMENT INFORMATION SYSTEMS

Volume III. Feasibility Tests

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September 1980

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I. INTRODUCTION

A. Background

Prosecution management information systems (PMIS's) were selected by LEAA for a two-phased assessment conducted under the National Evaluation Program (NEP). The NEP Phase I study was divided into two segments:

- The first segment was a 12-month study to determine what is currently known about the topic area (the nature and extent of projects involved and issues concerning costs, benefits and problems), and to determine if data are available for in-depth evaluations;

- The second segment of Phase I was a six-month study to determine the feasibility of Phase II in-depth evaluations.

The NEP Phase II study is to be an intensive assessment of the effectiveness of PMIS projects.

This NEP Phase I study was conducted by Westat, Incorporated, in affiliation with the Center for Management and Policy Research, Incorporated (CMPR). Results of the first segment effort are presented in Volume I of this report; this volume reports the results of the second segment.

During the first segment, information was developed on approximately 75 operational PMIS projects of various sizes and types, and about 100 PMIS projects that are in the planning stage. Telephone surveys and site visits resulted in additional information on about 30 operational projects of special interest. This information was sufficient to characterize the jurisdictional and project environments, intended uses, problems, and expectations of many of these projects. Some development and operational cost information was reported for a subset of the operational projects.

The data have been useful in preparing judgmental assessments of the state-of-the-art and the state of general knowledge about PMIS projects. These data have also been useful in assessing the extent to which prosecutors, courts, and other criminal justice agencies participate in PMIS projects and the extent to which prosecutors share information from criminal justice information systems.

It was found that PMIS projects are usually designed to handle such applications as case and defendant status monitoring (tracking), caseload reporting, calendar management, and disposition reporting. Some projects include case aging, witness notification, and crime specific statistical analysis applications. A variety of other applications were also identified during site visits.

Some prosecution managers were using PMIS generated statistical data to manage workloads and to alter office policies and priorities. In no instance

reported to us, however, was the PMIS impact on the prosecution process being measured, although data to do so appeared to be available within the PMIS projects.

Prosecutors exercise wide discretion in their criminal justice role. As the interface between the police and courts, their decisions influence the course of all arrests made by the police. Increasing criminal caseloads coupled with limited resources have motivated many prosecutors to consider automation as a means of improving management and operations. Indeed, over 175 of the larger prosecution offices surveyed having more than 25 employees, either have an operating PMIS or are in the process of planning such a system.

Based on the survey data collected during the first segment of Phase I, it is estimated that in excess of $30 million has been spent in the last decade developing various types of automated MIS's serving prosecutors and over $20 million is spent each year on the operation of such systems. Until quite recently, the outlook was for substantial expenditures to continue due to increasing interest of prosecutors in automation, the current funding policies of LEAA, and interest in criminal justice research. In light of diminishing criminal justice budgets, it is expected that the results of a Phase II evaluation of prosecution MIS's will be useful to Federal officials and state planning agencies in assessing MIS funding policies, reviewing grant applications, and allocating funds among competing projects. Prosecutors, courts, other criminal justice agencies, and state and local government data processing service organizations should find evaluation measurements useful in identifying elements of PMIS's, and their associated implementation projects, that have been successful and effective in improving prosecution and court performance. Prosecutors, judges, and prosecution/court administrators will gain insights into factors contributing to PMIS success and failure, methods of measuring performance, and approaches to improving PMIS projects and prosecution/court performance. Phase II evaluative information should also assist in determining changes or additions to make PMIS projects more effective.

B. Evaluability of PMIS Projects

LEAA suggests three conditions which must be met for projects to be evaluable.* The conditions are:

- Users of evaluation results must agree on definitions of activities, the conditions to be changed, and the kinds of expected outcomes.
- The key project assumptions must be stated in terms which can be tested objectively.
- Program or project managers must clearly define at least one use for evaluation information in making a decision or in initiating administrative action.

*"Intensive Evaluation for Criminal Justice Planning Agencies," National Institute of Law Enforcement and Criminal Justice, July 1975.

Few projects surveyed in the first segment of Phase I had explicit statements of their goals and expected outcomes. However, there were enough models available through transfer projects and other well conceived PMIS projects to infer a set of implicit prosecution goals from interviews and the literature search. The evaluation framework, developed in the first segment of Phase I and discussed in Volume I, presents what we believe is a consensus, if not universal agreement, on definitions of activities, conditions to be changed, and kinds of expected outcomes.

Although the key project assumptions linking PMIS implementation to expected impacts were not explicitly stated in any project, the study enabled the research team to infer an implicit chain of assumptions. The evaluation framework also specifies both quantitative measurements and judgmental assessments by independent observers as a means of objective evaluation.

The final evaluability condition, identification of a clear use for the evaluation results, is the most significant factor. As stated earlier, large sums have been invested at the Federal, state and local levels in developing and operating PMIS projects. Interest in PMIS development is expected to continue. However, particularly in light of recent Federal budget uncertainty, Federal, state and local government decisionmakers must allocate increasingly scarce funds to competing program areas. In the past, many PMIS decisions have been made based on intuitive, emotional, or political motivations, rather than objective information. In the future, funding decisionmakers and prospective PMIS project managers and users will almost certainly require a more complete understanding of the characteristics of successful PMIS development and operation, the situational variables that encourage or hinder successful PMIS implementation, and the expected results, costs and impacts.

Analysis of the data collected during the first segment of Phase I indicated that all three conditions for evaluability appeared to be present and data required to measure performance/impact of PMIS projects appeared to be available. Thus, testing the feasibility of a Phase II evaluation design for PMIS projects was initiated.

C. Purpose of Feasibility Tests

Results of the first segment of Phase I indicated a need for in-depth evaluations of PMIS projects to provide managers at all levels of government with decisionmaking information. There were also indications that the conditions for evaluating projects could be met and that data were available to produce performance and impact measurements. Due to the large number of projects surveyed in the first segment of Phase I, only a limited amount of time could be spent on each. Even where site visits were made, the project team had to rely on available reports and documentation or information

gathered in interviews with a few key personnel on site. Thus, it was not possible to elicit detailed information considered crucial for a definitive evaluation of PMIS projects. One purpose of the feasibility tests, then, was to determine the actual availability of data needed for in-depth evaluations, and, where study team and/or PMIS project resources permitted, to collect that data for the purpose of testing evaluative methods.

Once data were collected in sufficient detail, tests were conducted to determine feasible methods of measuring and assessing PMIS impact on the prosecution and judicial processes, PMIS cost-effectiveness, and PMIS transfer potential, using the evaluation framework and approach discussed in the following paragraphs.

D. Evaluation Framework

PMIS evaluation is based on the notion that a prosecutor has defined, at least implicitly, goals for the operation of his or her office. These goals are normally defined in such terms as conviction rates, evenhandedness, delay, or other attributes of the criminal justice system.* The PMIS is developed and operated in the hope that it will assist in the achievement of goals, i.e., that it will have a positive impact. A logically structured impact evaluation must be carried out within a methodological framework that:

- Provides a general theory linking PMIS operation to impact on the criminal justice system.
- Defines prosecutor goals in terms of specific elements of PMIS impact.
- Defines indicators of success -- operational measures of these elements that can be used to quantify the extent to which PMIS operation has impacts that advance the prosecutor's goals.

Figure 1 summarizes a theory of how PMIS development and operation are linked to impact on the criminal justice system. Ideally, development of a PMIS takes place in four steps: requirements analysis, system design, system software development or transfer, and system implementation. Once the PMIS is operational, it may produce three categories of outputs: operational outputs, such as lists of witnesses, charging instruments, or subpoenas; records of operations and decisions such as in individual cases, attorney assignments, hearing dates or motions granted; and statistical displays in which these case-level operations are aggregated into such measures as dismissal rates, average delay, or case mix.

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*A discussion of prosecutor goals and policies is contained in Joan Jacoby, "The Prosecutor's Charging Decision: A Policy Perspective," Law Enforcement Assistance Administration, Jan. 1977: 16-19.

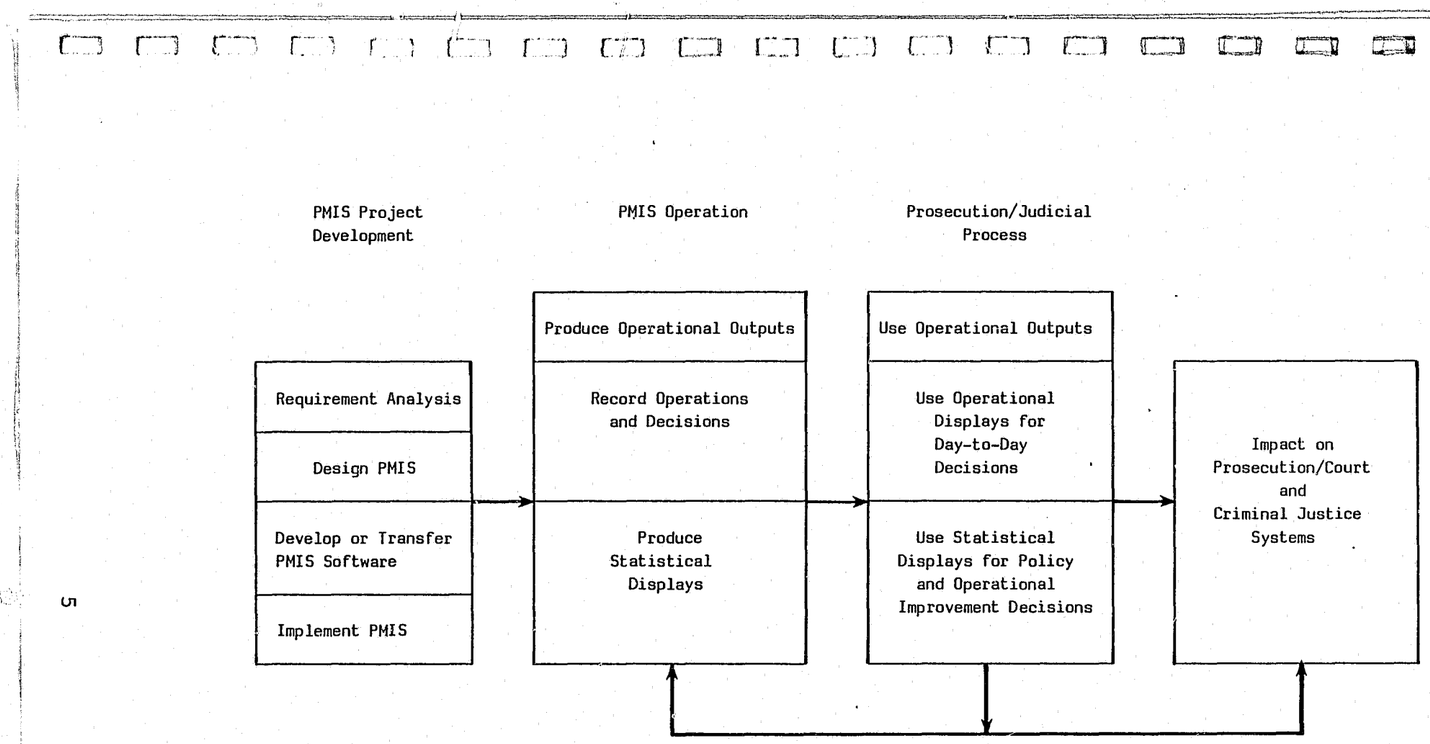


Figure 1. Assumptions Linking Prosecution MIS to Impact on Prosecution/Court Criminal Justice System

In turn, these outputs may modify the prosecution or judicial process in a variety of ways. For example, witness lists, including accurate addressses and/or telephone numbers, may be used to administer the "on-call" feature of a witness assistance program to avoid unnecessary trips to the courthouse, only to learn that a hearing has been continued. Up-to-date and accurate records of attorney assignments and hearing dates may be used to reduce the incidence of schedule conflicts for individual assistant prosecutors. Statistical displays of case duration may be used to monitor compliance with a speedy trial law.

Such modifications of the process as these comprise the PMIS impact. In addition, by monitoring various indicators over time, the PMIS ideally provides feedback not only on its own impact, but on the impact of external changes in the criminal justice process.

With the background provided by this overview of the theoretical linkage between PMIS operation and criminal justice system impact, it is possible to define more specifically the elements of PMIS impacts on prosecution and to relate them to goals of prosecution. Figure 2 identifies two general goals assumed to be important to the prosecutor implementing a PMIS: to manage the PMIS project itself effectively, and to use the PMIS to improve office management and operation. The former general objective is broken down into four more concrete prosecution goals: improving information system outputs, improving data handling, controlling PMIS cost, and developing a research and evaluation capability. The latter objective is broken down into four operational goals: improving scheduling and control, maintaining an effective conviction rate, maintaining evenhandedness, and using resources efficiently.

As indicated above, the third function of an evaluation framework is to define indicators of PMIS success. In other words, the evaluator must define operational measures that can be used to quantify the extent to which the PMIS advances the prosecution goals identified in Figure 2. These indicators have been defined in Section II, Volume I of this report and are not repeated here.

E. Evaluation Approach

Within the context of the general evaluation framework outlined in the preceding section, the evaluator's specific approach will be conditioned by two factors beyond his control: the age of the PMIS being evaluated, and the resources available to conduct the evaluation. Therefore, the project team tested the feasibility of both a priori and a posteriori evaluation designs (to be applied, respectively, to relatively new and relatively old PMIS installations), and the feasibility of evaluation approaches involving both intensive and non-intensive data collection.

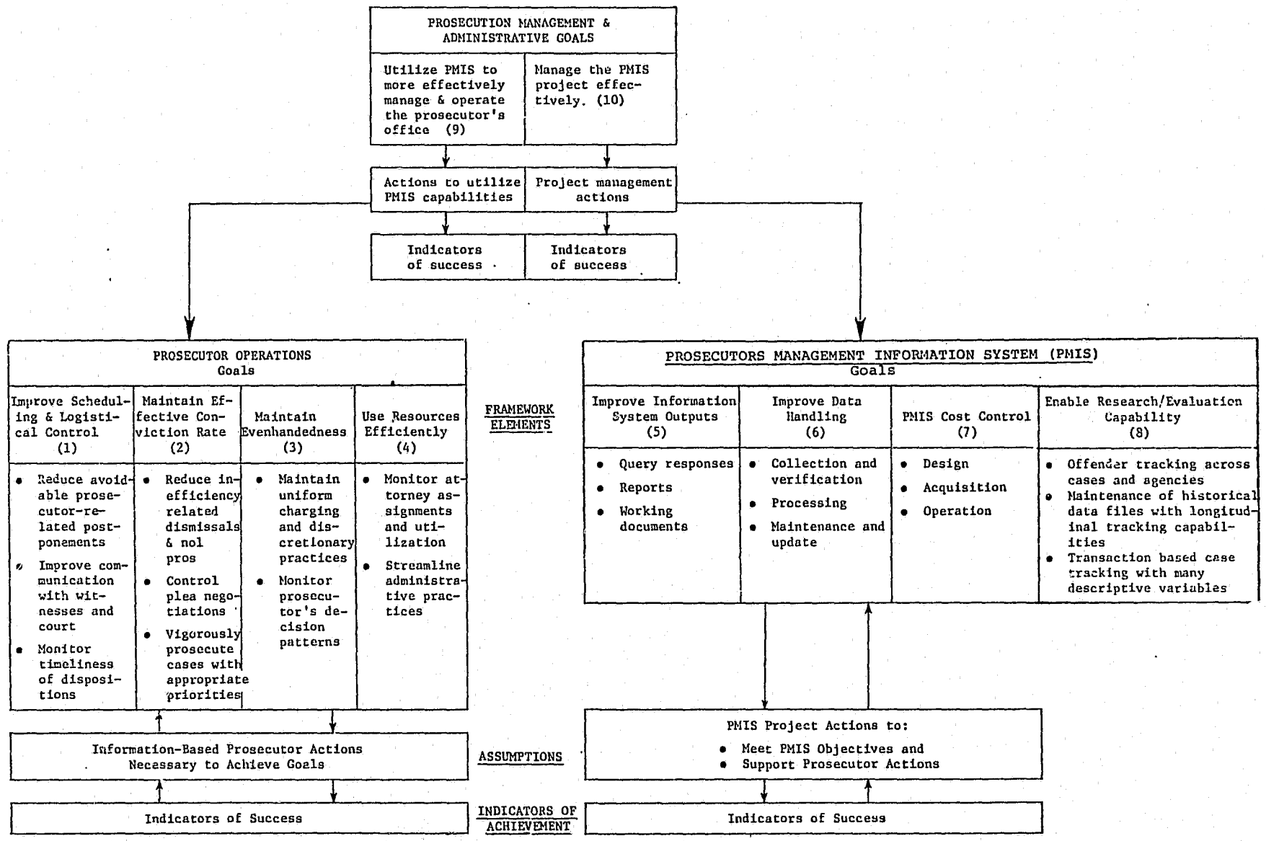


Figure 2. Evaluation Framework

For relatively new projects, the a priori design provides for thorough measurement of baseline conditions, and monitoring of changes in performance during the evaluation data collection period as measured by predefined indicators of success. For projects that have been operational two or more years, the a posteriori design focuses on the construction of a time-series from historical data files in a retrospective analysis of changes over time. At sites where system enhancement is occurring, these two approaches can be combined. For example, impact of operational support applications may be evaluated on an a posteriori basis while a newly introduced management/statistics capability may be evaluated on an a priori basis.

Each design perspective has advantages and disadvantages. On recently implemented projects, it is usually easier to reconstruct an accurate set of measurements of baseline conditions. Memories are fresher for interviews on situational variables; judgmental observations can be made, and manual records on court performance are more readily available. The disadvantage in a priori design is the limited time frame available for observing changes. For example, on newly implemented projects, only about six months of operation can be observed during the course of the feasibility study. Of course, this time frame will vary somewhat depending on the date the particular project became operational.

The a posteriori design has the advantage of providing about two years of data in a time series format. Such data are amenable to constructing more valid evaluative research designs to measure project impact. To the extent that gaps exist in the definition of baseline conditions, it is more difficult to reconstruct those from sources external to the PMIS itself because of failing memory, warehoused court records, etc. However, a properly constructed a posteriori design can yield the data necessary to measure project impacts.

Both the a priori and a posteriori approaches involve the use of both PMIS data and samples of manual records. Resource constraints on the feasibility study precluded intensive data collection and analysis at all evaluation sites. Therefore, both intensive and non-intensive data collection approaches were used.

The intensive approach, attempted in three sites, incorporated collection and analysis of PMIS-generated time-series data on indicators of success, as well as sampling and analysis of manual records to assess the quality of PMIS data. The non-intensive approach involved, instead, detailed assessment of the availability of PMIS time-series data to support impact evaluations and of the availability and comparability of manual records to support analysis of PMIS data quality. While use of the intensive approach at all sites would have been desirable, the non-intensive approach nonetheless generated valuable insights into the feasibility of PMIS evaluation.

II. TEST SITES

A. Selection Criteria

Six PMIS projects were used as test sites for determining the feasibility of PMIS evaluations. These sites were selected in accordance with the following criteria:

(1) Availability of Appropriate Time Series Data;

(1.1) Opportunity to test the feasibility of retrieving time series data from a site with a recently introduced PMIS, or

(1.2) Availability of time series data from historical PMIS records.

(2) Capacity to provide computer and data collection support to a Phase II research effort;

(3) Significant transfer potential -- range and quality of applications, software and hardware characteristics;

(4) Importance as a representative of a significant class of PMIS projects;

(5) Economical access -- travel costs, etc.;

(6) Duration PMIS operational -- systems in operation 2-3 years rated high; older systems rated lower;

(7) Prosecutor/court capacity to enter valid data and utilize outputs for decisionmaking.

B. Classes of Projects and Candidate Sites

Candidate sites were chosen because of their characteristics and a preliminary indication of being an evaluable PMIS project. Figure 3 depicts the division of PMIS projects by classes. This set of classes constitutes an initial division of PMIS projects for assessment of general characteristics of each group. The feasibility study was not intended to provide sufficient information for generalizing class characteristics; rather it was designed to test methods for developing such information. The class numbers shown below are indicated by the numbers in the appropriate box in Figure 3. The sites considered within each class were:

Class 1 Small minicomputer, prosecutor controlled

Candidate sites: Marion County, IN (MINI-PROMIS)
Suffolk County, MA (CMS)

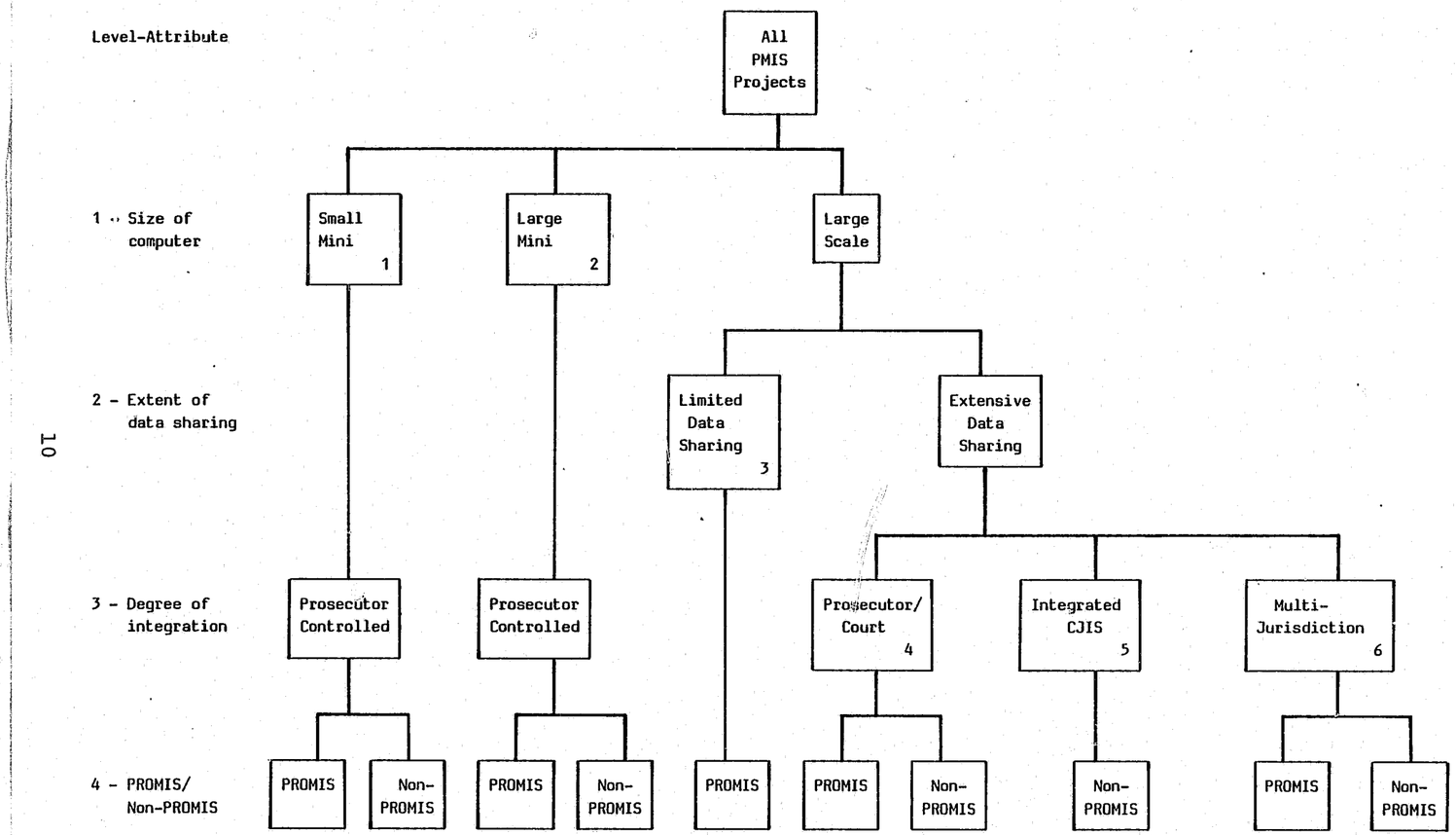


Figure 3. PMIS Project Class Structure

Class 2 Large minicomputer, prosecutor controlled

Candidate sites: Alameda County, CA (DALITE)
New Orleans, LA (DARTS-PROMIS)

Class 3 Large scale computer, limited data sharing

Candidate sites: Los Angeles, CA (PROMIS)
Washington, DC (PROMIS)
Jefferson County, KY (CATCH-PROMIS)
Portland, OR (MAXI-PROMIS)

Class 4 Large scale computer, extensive data sharing, prosecutor/court shared

Candidate sites: San Bernardino, CA (ACIS)
Baltimore, MD (CCSIS)
Milwaukee, WI (JUSTIS)
Salt Lake City, UT (PROMIS II)
Golden, CO (PROMIS - MAXI-PROMIS)

Class 5 Large scale, extensive data sharing, integrated criminal justice system

Candidate sites: Orange County, CA (Super/CC)
Santa Clara County, CA (CJIC)
Dade County, FL (CJIS)
Lake County, IL (JARS)
Tarrant County, TX (TCCJIS)
Norfolk, VA (TRACER)

Class 6 Large scale computer, extensive data sharing, multi-jurisdictional

Candidate sites: Tallahassee, FL (JUSTIS)
State of Massachusetts (MAXI-PROMIS)
State of Oklahoma (ADRS)

C. Selected Sites

The sites selected for each class are listed below with additional comments relevant to their selection.

Class 1 - Suffolk County, MA (CMS):

- NDAA participation indicates wide applicability of concepts and approaches;

- Apparently effective operational support;
- Management and statistics capability being planned-evaluation can be designed on an a priori basis. Since the system has been in use for operational support, its impact on operations can be evaluated a posteriori using manually retrieved baseline data.
- Historical data kept on hard copy; can be sampled for baseline data; manual statistics also available; and
- Software is written in extended BASIC; although modifications are needed to transfer to different hardware, site personnel indicated only 10-15 percent of a rewrite would be required.

Class 2 - Alameda County, CA (DALITE):

- Enthusiastic users with apparent effectiveness, widely applicable potential;
- Case seriousness rating, case aging and other management oriented applications;
- Apparently excellent software COBOL based and tailorable and should be transferable; and
- Apparently excellent historical files on disk packs for producing time series in an a posteriori evaluation.

Class 3 - Portland, OR (MAXI-PROMIS):

- Widely applicable potential use;
- Highly relevant to LEAA funding policy;
- Potential for cross-jurisdictional analysis;
- Apparently high transferability; and
- Opportunity for a priori evaluation.

Class 4 - Golden, CO (PROMIS/MAXI-PROMIS)

- Apparent effectiveness - shared prosecution/court;
- Good design for transferability;

- Good historical data -- special opportunity for cross-city comparisons with other PROMIS sites; and
- Strong management/statistics component.

NOTE: Salt Lake City, UT was initially selected primarily because it is a PROMIS project. However, Salt Lake declined to participate in the feasibility test. Golden, CO was then selected because PROMIS has been operational there for several years and because the jurisdiction was in the process of converting to MAXI-PROMIS.

Class 5 - Norfolk, VA (TRACER)

- Apparent high effectiveness/cooperation;
- Innovative applications;
- Fairly good historical data files; and
- Wide applicability.

Class 6 - State of Oklahoma (ADRS)

- Apparent high cost-effectiveness;
- Excellent statistical capacity;
- Wide applicability and user acceptance; and
- Good historical data.

The PMIS classes, the sites selected to represent each class, and the data collection/evaluation approaches (as discussed in Section II) are summarized in Exhibit 1.

PMIS CLASS	SELECTED SITES	DATA COLLECTION APPROACH		EVALUATION APPROACH	
		Intensive[1]	Non-Intensive[2]	A Priori[3]	A Posteriori[4]
1. Small minicomputer	Suffolk County, MA (CMS)		X	X	X
2. Large minicomputer	Alameda County, CA (DALITE)	X			X
3. Large scale computer limited data sharing	Portland, OR (MAXI-PROMIS)		X	X	
4. Large scale computer, extensive data sharing, prosecutor/court	Golden, CO (PROMIS/MAXI-PROMIS)	X			X
5. Large scale computer, extensive data sharing, integrated CJIS	Norfolk, VA (TRACER)	X			X
6. Large scale computer, extensive data sharing, multi-jurisdiction	State of Oklahoma (ADRS)		X		X

1/ Collect data for time series analysis.
2/ Determine availability of data for time series analysis.
3/ A priori - before PMIS implementation.
4/ A posteriori - after PMIS implementation.

Exhibit 1. Data Collection/Evaluation Approach

III. FEASIBILITY TEST RESULTS

A. Data Collected at Test Sites

1. Approach to Data Collection

The six test sites were visited for the purpose of gathering data to test methods of evaluating prosecution management information systems. Four of these sites (Norfolk, Oakland, Oklahoma City, and Boston) had been surveyed during the first segment of Phase I and site visit reports had been previously prepared; information gathered during these second visits was added as supplements to those original site visit reports. Complete site visit reports for the two sites surveyed for the first time (Portland and Golden) were also prepared. All site visit reports are contained in Volume III of this report. A list of the persons contacted at the test sites during the second segment of Phase I is shown in Appendix A to this volume.

As planned, the data collection approach was divided into two categories: intensive and non-intensive (see Section II). Survey teams spent three days collecting data at non-intensive sites and five days at the intensive sites.

The primary survey teams consisted of two persons for each site visit. The survey teams visiting Norfolk and Oakland were each augmented by a Westat field representative. These field representatives were trained interviewers/ data abstractors employed to test the feasibility of abstracting case/defendant information from manual records.

A data collection instrument was prepared for gathering information at the test sites. The collection instrument consists of a separate section for each agency or office (prosecutor, courts, police and data processing facility) from which information was sought. Face-to-face interviews were conducted in each office or agency. The collection instrument was used as an interview guide and used to record data that were extracted from records or opinions expressed by the respondent. Exhibit 2 lists the general categories of information covered by the collection instrument and shows the availability of data within each category from the agencies (sources) at the six test sites. As indicated in Exhibit 2, most data sought in general information categories were either obtained during the surveys or it was determined that collection of such data is feasible.

The availability of specific data and the sources from which such data can be collected varied among the surveyed sites.

2. Time Series Data

The availability of time series data is shown in Exhibit 3. Data to support time series analysis were sought from three sources: (1) PMIS historical files maintained by the ADP facility; (2) monthly statistical reports for

Exhibit 2. Availability of Data By General Category

Category of Data Expected From Test Sites (Outline of Collection Instrument)	Actual Data Availability Status												
	Norfolk				Oakland	Oklahoma City			Boston	Portland		Golden	
	TRACER				DALITE	ADRS			CMS	PROMIS		PROMIS	
	PR	CT	PO	DP	Prosecutor	PR	SAC	DP	Prosecutor	PR	DP	PR	DP
A. Personnel													
1. Number assigned	Y	Y	Y	Y	Y	FS	Y	Y	Y	Y	Y	Y	Y
2. Salaries	Y	Y	Y	Y	Y	FS	Y	Y	Y	Y	Y	Y	Y
B. Equipment													
1. Makes, models, quantities	Y	Y	Y	Y	Y	NA	Y	Y	Y	Y	Y	Y	Y
2. Costs	Y	Y	Y	Y	Y	NA	Y	Y	Y	Y	Y	Y	Y
C. Input to PMIS													
1. Methods	Y	Y	Y	Y	Y	NA	Y	NA	Y	Y	Y	Y	Y
2. Volume	Y	Y	Y	Y	Y	NA	F	F	Y	FO	FO	FO	FO
D. Output use and utility	Y	Y	Y	NA	Y	FS	Y	NA	Y	FO	NA	FO	NA
E. Data Quality													
1. User judgments	Y	Y	Y	NA	Y	FS	Y	NA	Y	FO	NA	FO	NA
2. Comparison of PMIS data with manual records	Y	Y	Y	Y	Y	NA	F	F	F	FO	FO	FO	FO
F. Prosecutor goals for PMIS													
1. Identification of Goals	Y	NA	NA	NA	Y	FS	NA	NA	Y	Y	NA	Y	NA
2. Prosecutor ratings of PMIS contributions to goal attainment	Y	NA	NA	NA	Y	FS	NA	NA	Y	FO	NA	FO	NA
G. Interventions	Y	Y	Y	Y	Y	FS	F	F	Y	F	N	Y	Y
H. System operations													
1. Methods and procedures	Y	Y	Y	Y	Y	NA	Y	Y	Y	Y	Y	Y	Y
2. Costs	Y	Y	Y	Y	Y	NA	Y	Y	Y	FO	FO	FO	FO
I. Monthly caseload/caseflow statistics	Y	Y	NA	Y	N	NA	F	F	F	FO	FO	FO	FO
J. PMIS development													
1. Methods	NA	NA	NA	Y	Y	NA	Y	Y	Y	Y	Y	Y	Y
2. Costs	NA	NA	NA	Y	Y	NA	Y	Y	Y	Y	Y	Y	Y
K. Transferability													
1. Hardware/software characteristics	NA	NA	NA	Y	Y	NA	Y	Y	Y	NA	Y	NA	Y
2. Documentation status	NA	NA	NA	Y	Y	NA	Y	Y	Y	Y	Y	Y	Y

LEGEND: Y = Yes, data obtained
N = No, data not available
F = Feasible to collect data, not obtained at non-intensive sites
FO = Feasible to collect data when system is fully operational
FS = Feasible to collect data, needed on a statewide basis
NA = Not applicable to agency, no attempt made to collect data

*Agencies: PR = Prosecutor; CT = Court; PO = Police; DP = Data processing facility; SAC = Statistical Analysis Center

Exhibit 3. Availability of Time Series Data

Data expected from test sites	Site Location/PMIS Acronym					
	Norfolk	Oakland	Oklahoma City	Boston	Portland	Golden
	TRACER	DALITE	ADRS	CMS	PROMIS	PROMIS
A. Computer history tapes	Yes	Yes[1/]	No[2/]	No	No	Yes[3/]
B. PMIS generated statistical reports for the past 24-36 months	Yes	No[4/]	Partial	No	No[5/]	No
C. Manually prepared statistical reports for the past 24-36 months	Yes	No	Partial	No	No	No
D. Manually maintained case files	Yes	Yes	Yes	Yes	Yes	Yes
E. Prospective PMIS generated reports probably obtainable	Yes	Yes	Yes	Yes	Yes	Yes

1/ History tapes from HP system could not be processed on IBM systems.

2/ History tapes exist and could probably be obtained, but would require authorization from prosecutors statewide.

3/ History tapes were made available from original PROMIS system; new PROMIS not yet operational.

4/ No statistical reports have been generated from DALITE; statistics generated by CORPUS are considered unreliable.

5/ PROMIS not yet operational; statistical reports are provided to the court in computer listings generated by the State Judicial Information System.

the preceding 24-36 months (either PMIS generated or manually prepared) by the prosecutor and courts; and (3) case files maintained by the prosecutor and courts.

Among the six sites, the most complete set of time series data was available from Norfolk. A history tape, for the 1977-1979 period, containing selected variables concerning case load and case flow, was provided to the survey team. Monthly statistical reports, containing most of the needed variables, were provided by the courts and by the prosecutor. Data contained in the reports from the District Court and the prosecutor were generated by the PMIS; data in the reports from the Circuit Court are taken from manual records (PMIS outputs are generated for this report, but where statistical totals may agree with manually kept figures, the breakdown of those figures -- by felony 1 and 2, and by other felonies -- may not agree; therefore the Circuit Court continues the manually kept records pending resolution of the accuracy problem.) To create a data base to support time series analysis, data were abstracted from the monthly statistical reports, identified as being accurate, and entered into a computer record designed for this purpose. Data gaps* (that is, monthly computations of specific variables needed for analysis, but not contained in the monthly reports) were filled by using Westat ADP facilities to compute monthly statistics from the Norfolk history tape. Appendix B shows the variables contained in the computer file created for time series analysis and indicates the source of the values for each variable.

In Oakland, no monthly statistical reports were collected because neither the PMIS (DALITE) nor manually prepared reports, contain the needed data aggregated on a monthly basis. An attempt was made to have monthly statistics generated by the PMIS, but the workload on the DALITE personnel precluded the computer programming necessary to accomplish this task. In lieu of monthly computations, history tapes were provided to the survey team. However, incompatibilities between the Hewlett-Packard system used by DALITE and the IBM system available to the survey team prevented the use of DALITE history tape files for time series analysis within project resource constraints, particularly because of the time that would be involved. A review of the variables contained in DALITE records indicates that data to support time series analysis are available in the PMIS and the system can be programmed to produce monthly statistics. Further manipulation of the resultant statistics, for time series analysis, would then have to be accomplished on a compatible system or the data converted (manually or by a computer conversion program) to a record that would be readable by the computer system available to the evaluators.

Historical computer tape files are available in Oklahoma City. As a non-intensive site, acquisition of history tapes was not planned; any attempt

* PMIS monthly reports containing these data are currently being produced in Norfolk; these reports are relatively new outputs, therefore monthly statistics were available for only a few of the preceding months.

to obtain such tapes in the future, however, would require authorization by an organization representing prosecutors statewide, such as the State District Attorney's Association. The Statistical Analysis Center (SAC) of the Oklahoma Crime Commission is the focal point for operation of this PMIS and was responsible for its development. As a service organization, SAC does not maintain files of previously produced statistical reports, only a few examples of each type of report. Monthly statistics for periods preceding the survey were, therefore, not available. The PMIS was developed primarily to produce statistical reports on a statewide basis. Manually prepared reports are not required of the jurisdictions supported by the system are, therefore, not available.

In Boston, the PMIS records do contain data needed for time series analysis. However, these data are stored only on disk packs; tape drives are not currently included in the system configuration. Acquisition of PMIS historical records would, therefore, require duplicating and transporting disk packs to a compatible computer system for processing. An alternative approach could be temporary interface with a tape drive compatible with both the Boston PMIS* and the evaluator's hardware, along with the software necessary to transfer PMIS records from the disks to tapes in a format compatible with an evaluator's computer system. No monthly statistical reports (neither PMIS nor manually generated) were available at the time of the survey. Computer programming specifications for generating monthly statistics have, however, been written for use by a contractor in preparing software necessary for their production. Once these programs are implemented, printed reports, generated by the PMIS, could be used as source documents for the purpose of entering monthly statistics into the computer to be used by the evaluators for time series analysis.

The Portland PROMIS project was not operational at the time of the survey (data entry was to start about 10 March 1980), therefore monthly statistics were not available from the PMIS (nor from manually prepared reports). It should be possible in the future, however, to obtain history tapes containing monthly statistics since the PROMIS management report package will be utilized.

The new regional PROMIS system in Golden was installed in January 1980 with data being entered and the inquiry/response capability being used since that time; no statistical reports were available for that short period; and no monthly statistical reports were available from the batch PROMIS project (nor from manually prepared reports). History tapes from the batch PROMIS system were obtained to test the feasibility of computing monthly statistics to support time series analysis. However, since batch PROMIS was being only minimally used by the prosecutor due to the emphasis on building the new PROMIS capacity (and because of time restrictions in completing the necessary processing and analysis), it was felt that a time series analysis for detecting PMIS impact on the Golden criminal justice system would not be justified.

* Boston PMIS uses a NOVA 2 minicomputer with the MICOS-II operating system. Programs are written in BASIC.

The feasibility of abstracting information from manually maintained case files, for the purpose of collecting time series data (for periods prior to PMIS implementation), was also considered. Testing of abstraction procedures was conducted at Norfolk and Oakland. A sample of the data collection form used for this purpose is contained in Appendix C. The time and cost involved in the data abstraction procedures are shown in Exhibit 4. Westat field representatives, who are residents of the surveyed areas, were employed to conduct the data abstraction operations. Use of field personnel restricted the cost of abstraction to the prevailing wage rate for the local area concerned. The two areas in which these tests were conducted represent relatively high (Oakland) and low (Norfolk) wage rates for the work performed. The cost of extracting data using these procedures averaged $1.57 per case.

Once needed data are abstracted, processing of that data is required to produce statistics for specific time periods (monthly, for example) to facilitate time series analysis. To accomplish this processing by computer, it would be necessary to enter the data into a computer record and then manipulate that data to generate desired statistics. The cost estimated to accomplish this processing (see Exhibit 5) is estimated at $.87 per case. Computer programming to accomplish this processing would be a one-time estimated cost of about $350 if "canned" statistical packages (such as SAS or SPSS) can be used.*

The cost to develop time series data for a jurisdiction such as Boston (where statistics are not available for the preceding 24-36 months), is estimated to be from $14,640 (24 months - 6,000 cases) to $21,960 (36 months - 9,000 cases) based on approximately 3,000 cases per year at a cost of $2.44 per case (for abstracting, entering, and processing the data). Considering the labor force for such an operation, the data abstraction on 6,000 cases would require approximately 215 person days; for 9,000 cases, 322.5 person days.

It was expected that the most convenient and economical method of constructing a time series data base during the feasibility study would be to obtain copies of previously prepared monthly statistical reports. Only in Norfolk did this prove feasible. A limited time series was constructed by extracting data from those reports and converting the data to computer files.

It is desirable that a set of performance statistics be developed in those sites which are in a start-up mode to establish a baseline for monitoring change over time. Furthermore, it is desirable that a sufficient number of variables be monitored so that the impact of the PMIS intervention on the criminal justice system can be assessed.

The interrupted time series design requires the generation of such statistics on a monthly basis, preferably starting with the period immediately preceding the installation of the PMIS and continuing through various stages of implementation and operation. In accordance with the design, we are interested in accounting for a learning curve effect, i.e., expecting the impact of the PMIS to be felt only after users learn how to effectively utilize the PMIS outputs. Thus, there is some flexibility in choosing the baseline period.

* Programming costs will be substantially higher unless the analyst has structured the case abstract as a fixed-length record.

Exhibit 4. Abstracting Data from Manually Maintained Case Records

Items regarding test sites	Norfolk	Oakland	Totals
1. Number of records from which data were abstracted	67	73	140
2. Total time (minutes) needed to abstract data (time needed to retrieve case file not included)	1,124	1,278	2,402
3. Average time (minutes) per record (case) needed to abstract data	16.8	17.5	17.2
4. Average wage rate ($ per minute) of person abstracting data	$ .075	$ .108	$ .091
5. Average cost per record (case) to abstract data	$1.26	$1.89	$1.57

Exhibit 5. Estimates Regarding the Processing of Abstracted Data

Items involved in processing	Estimates
1. Average time (minutes) needed to enter on record (case) into PMIS	5.0
2. Average wage rate ($ per minutes) for data entry clerk	$ .060
3. Average cost per record (case) for data entry	$ .30
4. Average monthly computer processing cost to produce all monthly statistics needed for time series analysis	$97.00
5. Average number of cases processed monthly as input to statistical reports	5,491
6. Average cost per record (case) for computer processing of monthly statistical data	$ .57
7. Total estimated cost per record (case) to process abstracted data (data entry + computer processing)	$ .87

Both Boston and Portland, the sites selected for a priori analysis, represent offices with relatively high criminal caseloads. Neither prepared monthly statistical reports on caseload, dispositions, and other performance measures prior to implementation of the PMIS. Nor has it been the experience of the project team that such reports could be expected in comparable jurisdictions to account for the period prior to installation of the PMIS. However, many jurisdictions do prepare annual reports on case filings and terminations on a manual basis, and such reports could be used as a tool in estimating performance for the baseline period.

3. Cost-Benefit Data

The purpose of collecting cost-benefit data was to determine the feasibility of performing cost-benefit analysis of systems representing the six PMIS classes defined in Section II. There was no intent to develop a model for cost-benefit analysis for this study as several models were available*, and others probably have been used for predicting cost or benefits in jurisdictions not included in this study. It seems appropriate that if an analysis is to be performed for a PMIS for which cost or benefits have been predicted, the model used for those predictions should again be used for that jurisdiction to permit comparisons of common data (for before and after PMIS implementation), and for validating the model.

Exhibit 6 shows the availability of cost-benefit data at the test sites.

Development costs were taken from grant documents and records that account for expenditures for various development components such as analysis, design, and programming. A complete breakdown of development costs was not available at all sites. In Oakland and Boston, for example, known costs for equipment and documentation were deducted from the total development cost and the remainder shown under the general heading of "analysis, design, and programming." Generalized development costs such as these are sufficient for performing cost-benefit analysis, but greater detail is needed when considering the PMIS transfer potential, which is discussed later in this section.

Operating costs were taken from current budgets for those systems that were fully operational at the time of the survey (Norfolk, Oakland, Oklahoma City, and Boston). Estimates of operating costs were taken from a cost-benefit package prepared by Portland. Operating costs for the old PROMIS system in Golden were obtained, but have not been included in Exhibit 6 which refers to new PROMIS. The only operational cost data that are not easily discernible deal with the on-line and batch processing costs for minicomputer projects in Oakland and Boston. Since the prosecutor owns these systems, he is not charged for computer time and, therefore, no accounting is kept of the time used for each type of transaction (input, inquiry, and batch report processing). In the other systems, where the prosecutor is charged by a central ADP facility according to CPU time used, transactions are timed and an average cost per transaction can be determined. These data are important

* INSLAW cost-benefit model; MULTNOMAH COUNTY OREGON cost-benefit package; National Center for State Courts cost-benefit methodology for Evaluation of State Judicial Information Systems.

Exhibit 6. Availability of Cost-Benefit Data

Cost-Benefit Items	Site Location/PMIS Acronym: Norfolk TRACER	Oakland DALITE	Oklahoma City ADRS	Boston CMS	Portland PROMIS	Golden PROMIS
A. Cost Items						
1. Total development costs for PMIS	$222,240[1]	$265,000	$248,000[1]	$137,785	$140,000	$406,416[1]
a. analysis, design, programming	$ 54,100[2]	$ 42,185	$217,510[2]	$ 58,985	$136,900[2]	-
b. documentation	$ 18,532	-	-	$ 15,000	-	-
c. equipment	$ 63,360	$222,815	$ 30,490	$ 63,800	$ 3,100	-
d. other (testing, training, etc.)	$ 86,248[2]	-	-	-	-	-
2. Local prosecutor's share of operating costs	$ 30,419[3]	$155,821	N/A[5]	$ 33,600	$ 65,678[4]	-
a. personnel costs (salaries and fringes) for local prosecutor's office	Yes[6]	$ 44,878	$ 84,986[5]	$ 27,300	$ 21,740[4]	
b. equipment leasing	Yes	$ 7,080	$ 31,461[5]	N/A	$ 10,150[4]	
c. equipment maintenance	Yes[6]	$ 23,642	$ 2,775[5]	N/A	$ 8,000[4]	-
d. communications	Yes[6]	N/A	$ 19,245[5]	N/A	$ 12,288[4]	-
e. other operations costs (depreciation of equipment, supplies, technical assistance)	$ 4,584[2]	$ 80,221[2]	$ 24,261[5]	$ 1,200	$ 3,000[4]	-
f. computer processing (charge for CPU time)	See below	N/A[7]	$ 87,272[5]	N/A[6]	$ 10,500[4]	-
(1) on-line processing (inquiries/ entry)	$ 10,610[7]	No[7]	F[8]	No[7]	FO[8]	FO[8]
(2) batch processing (output reports)	$ 12,345[7]	No[7]	F[8]	No[7]	FO[8]	FO[8]

Legend: NA = Not applicable
No = Data not applicable
Yes = Data available
F = Feasible to obtain data, not collected at non-intensive sites
FO = Feasible to obtain data after system is fully operational

1/ Regional systems: TRACER (Norfolk) serves multiple criminal justice agencies in multiple jurisdictions.
2/ PROMIS (Golden) serves prosecutors in multiple jurisdictions. ADRS (OKLAHOMA) is a statewide system.
3/ Further breakdown of costs for individual items is available.
4/ Operating costs were taken from current budget documents ($27,539) plus the estimated annual cost for data entry ($2,880)
5/ Estimated for first year of operations.
6/ PMIS serves prosecutors statewide; figures refer to cost of PMIS operations as they apply to the Statistical Analysis Center (SAC) of the Oklahoma Crime Commission as estimated in latest budget request.
7/ Norfolk ADP facility charges users according to CPU time. In determining chargeout rates, Norfolk indicates users share of personnel and equipment costs which equate to the costs for batch and on-line processing as shown on lines 3d (1) and (2).
8/ Minicomputers surveyed do not maintain a record of CPU time used for various transactions. Central ADP facilities using large scale computers maintain records of CPU time usage by transaction; it is therefore feasible to obtain these data.
9/ Estimates not applicable to prosecutor, but can be made by other criminal justice agencies.
10/ Figures represent three year average.

Exhibit 6. Availability of Cost-Benefit Data (Continued)

Cost-Benefit Items	Site Location/PMIS Acronym: Norfolk / TRACER	Oakland / DALITE	Oklahoma City / ADRS	Boston / CMS	Portland / PROMIS	Golden / PROMIS
B. Benefit items - annual savings						
1. cost displacement (personnel, equipment or supplies no longer a recurring expense)	See examples	None indicated	None indicated	None indicated	See examples	None indicated
Examples:						
• eliminate second (night) shift of clerks	None indicated	-	-	-	$ 49,000 estimated	-
• eliminate filing cabinets, card-vendor, vistu-triever, etc.	Estimates possible 9/	-	-	-	$ 480 estimated	-
• reduce office supplies needed for manual records that are replaced by PMIS operations	Estimates possible 9/	-	-	-	Estimates possible	-
2. Cost avoidance (personnel, equipment costs not expended due to increased productivity or efficiency)	See examples	See examples	None indicated	See examples	See examples	See examples
Examples:						
• PMIS generation of reports, warrants, subpoenas, etc., reduces clerical & typing time	Estimates possible	None indicated	-	None indicated	$ 12,000 estimated	Estimates possible
• reduce or eliminate need to periodically increase staff to cope with increased caseload	Estimates possible 9/	None indicated	-	None indicated	$ 25,360 10/ estimated	None indicated
• reduce the need to obtain answers to case or defendant inquiries	Estimates possible	Estimates possible	-	Estimates possible	$ 8,000 estimated	Estimates possible
• reduce or eliminate need for periodic procurement of additional equipment to cope with increased caseload	Estimates possible 9/	-	-	None indicated	$ 1,700 10/ estimated	None indicated

Legend: NA = Not applicable
No = Data not applicable
Yes = Data available
F = Feasible to obtain data, not collected at non-intensive sites
FO = Feasible to obtain data after system is fully operational

1/ Regional systems: TRACER (Norfolk) serves multiple criminal justice agencies in multiple jurisdictions; and PROMIS (Golden) serves prosecutors in multiple jurisdictions. ADRS (Oklahoma) is a statewide system.
2/ Further breakdown of costs for individual items is available.
3/ Operating costs were taken from current budget documents ($27,539) plus the estimated annual cost for data entry ($2,880).
4/ Estimated for first year of operations.
5/ PMIS serves prosecutors statewide; figures refer to cost of PMIS operations as they apply to the Statistical Analysis Center (SAC) of the Oklahoma Crime Commission as estimated in latest budget request.
6/ Norfolk ADP facility charges users according to CPU time. In determining chargeout rates, Norfolk indicates users share of personnel and equipment costs which equate to the costs for batch and on-line processing as shown on lines 3d (1) and (2).
7/ Minicomputers surveyed do not maintain a record of CPU time used for various transactions.
8/ Central ADP facilities using large scale computers maintain records of CPU time usage by transaction; it is therefore feasible to obtain these data.
9/ Estimates not applicable to prosecutor, but can be made by other criminal justice agencies.
10/ Figures represent three year average.

Exhibit 6. Availability of Cost-Benefit Data (Continued)

Cost-Benefit Items	Site Location/PMIS Acronym: Norfolk / TRACER	Oakland / DALITE	Oklahoma City / ADRS	Boston / CMS	Portland / PROMIS	Golden / PROMIS
3. Value added (improved services, performance, and decisionmaking capabilities)	See examples	See examples	See examples	See examples	See examples	See examples
Examples:						
• more inquiries can be answered than with manual system - better service to public and users	Judgment possible	Judgment possible	None indicated	Judgment possible	$ 5,000 judgment	Judgment possible
• new statistical reports - aid decisions	Judgment possible	Judgment possible	Judgment possible	Judgment possible	$ 22,000 judgment	Judgment possible
• case rating/case-weighting capability enhanced	None indicated	Judgment possible	None indicated	None indicated	$146,250 judgment	None indicated
• more efficient use of resources through improved scheduling and notifications to appear in court (continuances reduced)	Judgment possible	Judgment possible	None indicated	Judgment possible	Judgment possible	Judgment possible

Legend: NA = Not applicable
No = Data not applicable
Yes = Data available
F = Feasible to obtain data, not collected at non-intensive sites
FO = Feasible to obtain data after system is fully operational

1/ Regional systems: TRACER (Norfolk) serves multiple criminal justice agencies in multiple jurisdictions; and PROMIS (Golden) serves prosecutors in multiple jurisdictions. ADRS (Oklahoma) is a statewide system.
2/ Further breakdown of costs for individual items is available.
3/ Operating costs were taken from current budget documents ($27,539) plus the estimated annual cost for data entry ($2,880).
4/ Estimated for first year of operations.
5/ PMIS serves prosecutors statewide; figures refer to cost of PMIS operations as they apply to the Statistical Analysis Center (SAC) of the Oklahoma Crime Commission as estimated in latest budget request.
6/ Norfolk ADP facility charges users according to CPU time. In determining chargeout rates, Norfolk indicates users share of personnel and equipment costs which equate to the costs for batch and on-line processing as shown on lines 3d (1) and (2).
7/ Minicomputers surveyed do not maintain a record of CPU time used for various transactions.
8/ Central ADP facilities using large scale computers maintain records of CPU time usage by transaction; it is therefore feasible to obtain these data.
9/ Estimates not applicable to prosecutor, but can be made by other criminal justice agencies.
10/ Figures represent three year average.

when comparing the costs of PMIS generated reports versus the cost of manually produced reports and when analyzing benefits that may accrue from the PMIS on-line inquiry capability versus the cost of retrieving data manually.

Benefits could be identified for the fully operational PMIS projects and predictions of the value of benefits have been made for the two PROMIS projects (Portland and Golden). Portland used the Multnomah County cost-benefit model to predict benefits while the INSLAW developed cost-benefit model was used for Golden. The model used by Portland defines benefits in general terms allowing for the recording of specific benefits in an open-ended manner. This format is conducive to illustrating the availability of cost-benefit data at the test sites and has been used as the outline of benefits listed in Exhibit 6.

Comments contained in Exhibit 6 indicate the availability of data at all sites and shows the cost savings predicted by Portland. The comment "estimates possible" indicates that a fairly accurate cost savings can be attached to the defined benefit; "judgment possible" indicates that cost savings attached to the defined benefit would represent a "best guess" by experienced personnel; and "none indicated" means that there was no indication that the defined benefit is applicable to the PMIS surveyed. In general, value estimates are more generally available for benefits in the "cost displacement" and "cost avoidance" categories than in the "value added" category; therefore, cost/benefit evaluation becomes more judgmental as the mix of benefits includes more of the latter group. At one end of the spectrum, Portland, anticipating several types of cost displacement and cost avoidance benefits, has completed a cost/benefit analysis largely in financial terms. For Oakland and Boston, and particularly for the Oklahoma statistical system, the benefits are almost completely of the value-added type. The fact that this makes cost/benefit analysis of these systems more subject to judgment does not imply that the systems are less desirable than the others.

Cost-benefit predictions were available in Portland, as previously mentioned. This system was not yet operational so predictions could not be validated. Data to perform cost-benefit analysis are either available or will be available once the system has been operational for a reasonable period of time. Portland is a good representative of its class and should be a primary candidate for in-depth evaluation in the future.

Cost-benefit predictions were made for Golden's old and new PROMIS projects. The INSLAW developed cost-benefit model for PROMIS was used for these predictions. Since the focus of this study was on new PROMIS, which has been operating only since January 1980, no attempt was made to validate the INSLAW cost-benefit model. ADP records for the old PROMIS project contain detailed cost data; since the same ADP facility is processing new PROMIS, detailed information should be available for any future evaluation. The Golden regional system is considered a good candidate for future in-depth evaluation, once the system has been fully operational for a reasonable period.

Oakland and Boston are both good representatives of their PMIS class. Neither jurisdiction, however, can identify benefits that can be easily quantified. Most benefits would require value judgments by the users, making the analysis primarily judgmental rather than financial.

The Oklahoma statewide system was originally developed to satisfy the requirement for reporting offender based transaction statistics on a statewide basis; an estimate could be made of the cost to manually produce the statistical reports and compared to the cost of computer production. However, the innovative approach taken by SAC personnel has produced useful reports as a spinoff from the system that would require value judgments by users on a statewide basis. It is evident that avoiding the workload of manually preparing the statistical reports throughout the State would be worth the cost of PMIS operations.

The TRACER system in Norfolk is a good representative of its class. Since it serves multiple criminal justice agencies and multiple jurisdictions there are a number of benefits that can be identified and quantified. There are also a number of benefits that would be difficult or impossible to quantify. The ADP manager in this jurisdiction is not in favor of attempting to quantify benefits that require a judgmental assessment, as any assessment could be easily challenged. In Norfolk's case, a compilation of quantifiable benefits in all agencies and jurisdictions would probably offset operating costs, but this would not be true for the prosecutor's office alone. To accomplish an analysis requiring value judgments would then necessitate an agreement among users and PMIS managers on assessments that would be acceptable to all concerned.

4. Data Concerning Transfer Potential

A number of environmental and system factors may influence the transfer potential of a PMIS. Exhibit 7 shows the data collected at the test sites regarding PMIS environment and characteristics.

Detailed cost data on the analysis, design, and programming components of PMIS development were not available at all sites: Oakland and Boston did not identify these specific costs; and Oklahoma City, Portland, and Golden could calculate these costs fairly accurately. Norfolk, on the other hand, had complete cost details on all developmental components. Since any jurisdiction considering acquisition of a PMIS by transfer will incur costs relating to all aspects of system development, it would be extremely helpful to be able to compare costs of each development component between transfer systems and those fully developed at a jurisdiction.

B. Judgmental Assessment of Data Quality

1. Crucial Feasibility Issues

The data collection effort in the field investigations included three types of tasks. First, the project itself was described, e.g., data

Exhibit 7. PMIS Environment and Characteristics

Environment and Characteristics Descriptors	Site Location/PMIS Acronym					
	Norfolk	Oakland	Oklahoma City	Boston	Portland	Golden
	TRACER	DALITE	ADRS	CMS	PROMIS	PROMIS
A. Environment						
1. Area served by PMIS	Region	County	State	County	County	Region
2. Population served	1,250,000	1,100,000	2,766,000	723,000	1,000,000	1,500,000
3. Number of local prosecutors	16	120	NA	108	60	25
4. Local prosecutor's annual caseload	2,900[1]	8,800[1]	50,000	3,000[1]	12,200	2,000[1]
5. Agency controlling computer operations	City ADP	Prosecutor	County ADP	Prosecutor	County ADP	County ADP
6. Extent of PMIS usage	multiple agencies and jurisdictions	prosecutor only	multiple agencies and jurisdictions	prosecutor only	prosecutor only	prosecutors of of multiple jurisdictions
B. Characteristics						
1. Date MIS became operational	7/76	10/74	1/77	11/77	not operational[2]	1/80
2. Method of PMIS development	in-house/ contractor	in-house/ contractor	in-house	in-house/ contractor	in-house/ transfer	in-house/ transfer
3. Cost of development	$158,880	$ 42,185	-	$ 73,985	$136,900	$172,722
4. Cost of equipment	$ 63,360	$222,815	-	$ 63,800	$ 3,100	$233,694
5. Total developmental cost	$222,240	$265,000	$248,000	$137,785	$140,000	$406,416
6. Annual operating cost for entire PMIS	$270,768[3]	$155,821[3]	$250,000[3]	$ 33,600[3]	$ 65,678[4]	-
7. Local prosecutor's annual operating cost	$ 30,419[3]	$155,821[3]	NA	$ 33,600[3]	$ 65,678[4]	-
8. Hardware a. size of computer	Large	Mini	Large	Mini	Large	Large
b. central processing unit	IBM 370/145	HP3000/III	IBM 370/158	Nova 2/10	Amdahl 270	Honeywell 6620
c. terminals used by prosecutor (make-type)	IMB - CRT's	HP - CRT'S	RACAL - MILGO CRT's	Data Terminal, Inc. - CRT's	IBM - CRT's	Hazeltine CRT's

[1] Felony cases.

[2] For the purpose of this study, a PMIS was considered operational if data were being entered and if outputs (visual displays in response to inquiries and/or printed reports) were being produced at the time of the survey.

[3] Operating costs were taken from current budget documents ($27,539) plus the estimated annual cost for data entry ($2,880).

[4] Operating costs are estimates for the first year of operation, taken from the cost-benefit package.

Exhibit 7. PMIS Environment and Characteristics (Continued)

Environment and Characteristics Descriptors	Site Location/PMIS Acronym					
	Norfolk	Oakland	Oklahoma City	Boston	Portland	Golden
	TRACER	DALITE	ADRS	CMS	PROMIS	PROMIS
9. Software a. operating system	DOS/VS	MPE - III	DOS	MICOS - II	OS/VS1	GEOS
b. data base management system	CICS - VS	IMAGE 3000	IMS	None	ADABAS	I-D-S
c. teleprocessing monitor	CICS	MTS 3000	CICS	None	COM-PLETE	TDS
d. programming language	ANSI COBOL	ANSI COBOL 74	ANSI COBOL	BASIC	ANSI COBOL 68	ANSI COBOL 74
10. Input method	on-line	on-line	on-line by 5 counties, forms mailed by others, then on-line by SAC	on-line	on-line	on-line
11. Processing capabilities a. on-line inquiry/ response	Yes	Yes	Yes	Yes	Yes	Yes
b. on-line printing (e.g., forms, notices)	Yes	Yes	Yes	Yes	Yes	Yes
c. on-line report generation	Yes	Yes	No	Yes	Yes	Yes
d. off-line report generation	Yes	Yes	Yes	No	Yes	Yes
12. Types of support and reports a. on-line booking	Yes	No	No	No	No	No
b. on-line arrest reports	Yes	No	No	No	No	No
c. on-line warrants	Yes	No	No	No	Yes	Yes
d. schedules	Yes	Yes	Yes	Yes	Yes	Yes
e. workloads	Yes	No	Yes	Yes	Yes	Yes
f. statistics	Yes	No	Yes	Planned	Yes	Yes
13. Documentation status a. general system description	Complete	Complete	Complete	Complete	Complete	Complete
b. system design	Complete	None	Complete	None	Complete	Complete
c. program source listings	Complete	Complete	Complete	Complete	Complete	Complete
d. logic flow charts	Complete	None	Complete	None	Complete	Complete
e. operational manual	Complete	None	Complete	Complete	Complete	Complete
f. users manual	Complete	None	Complete	Complete	Complete	Complete

[1] Felony cases.

[2] For the purpose of this study, a PMIS was considered operational if outputs were being produced at the time of the survey.

[3] Operating costs were taken from current budget documents ($27,539) plus the estimated annual cost for data entry ($2,880).

[4] Operating costs are estimates for the first year of operation, taken from the cost-benefit package.

on staffing, costs and computer facilities. Second, the MIS was described, including its operational capacity and interventions over time, its inputs, and its outputs. Third, it was desirable to collect sufficient data on the operation of the criminal justice system, e.g., monthly caseload and dispositions, to permit the construction of a time series data base.

As expected, much of the data collection was straightforward. The three types of data that were most difficult to obtain were comparable project costs, external checks on the accuracy of computer data, and time series data on criminal justice system performance. Thus, the assessment of feasibility was most concerned with these three data collection issues.

Given the collection of adequate time series data, another major issue was the availability of appropriate techniques for analyzing the impact of the prosecution MIS. These techniques had to be able to measure changes in criminal justice system performance in the time frame of the PMIS interventions. In addition to detecting changes in performance patterns, techniques were needed to assist in attributing any changes to the PMIS interventions. Thus, data were required to describe significant variations in caseload mix, personnel, policies, organization, facilities, and other factors that could affect performance in addition to the PMIS itself.

2. Commonality of Data Across Test Sites

Common data were available from all test sites regarding:

- Personnel - their salaries, fringe benefits and their workload relevant to PMIS operations
- Equipment - makes, models, quantities, cost of purchase or lease and maintenance costs
- Operation of PMIS - methods of input, processing, and output; use, utility, and quality of outputs (from fully operational sites); hardware and software characteristics; and status of PMIS documentation
- Development of PMIS - methods of development.

Data lacking commonality among sites includes:

- Caseload - caseload data differs within jurisdictions as well as among jurisdictions. In Norfolk, for example, caseload statistics maintained by the prosecutor represent "adult felony indictments"; in the Circuit Court, the caseload figures represent counts (there may be several counts in an indictment) of felonies and misdemeanors; and the District Court statistics represent the number of hearings

held. Caseloads do not necessarily represent workload, as far as PMIS operations are concerned. In all test sites except Norfolk, the prosecutor (or SAC in Oklahoma City) is responsible for entering all data pertaining to a case or defendant. In Norfolk, the police enter arrest data and the courts enter disposition data. It is important, then, to define the manner in which caseload counts are made; if cost per case is a factor to be considered, a common denominator for counting "cases" should be used.

- Cost of PMIS Development - developmental cost data vary not only in degrees of detail, but also in components included (e.g. contractor cost only or in-house staff as well) and treatment of "soft" costs (e.g. management efforts by chief prosecutor). Moreover, when comparing development costs per case, report, inquiry, population, and prosecutors served across jurisdictions, it is important to take note of the area served by the overall PMIS. In systems serving regional (Norfolk) and statewide (Oklahoma City) areas, it is difficult to allocate the cost of development for one specific prosecutor's office. Therefore, in some sites, developmental costs were stated in gross terms and not equated to the support provided one prosecutor's office. In Golden, on the other hand, the grant application shows expected development costs for each district.
- Operational costs - total costs of operation can be determined for each PMIS. Cost backup data leading to those totals vary among PMIS projects. Centralized ADP facilities, such as Norfolk, Portland and Golden, charge prosecutors for ADP services. In Norfolk, the prosecutor is charged for his share of PMIS operations based on his usage of CPU time. The rate per CPU minute is set to cover the costs of ADP personnel, ADP equipment, and ADP equipment depreciation. In Portland and Golden, charges are made according to CPU time used plus the cost of personnel time. In Oklahoma City, SAC budgets for PMIS operations and individual prosecutors are not charged for the service. Cost of operations for prosecutor owned systems (Oakland and Boston) involve primarily direct costs for personnel, equipment rental, and supplies devoted to the PMIS. In the latter cases, realistic costs per transaction (input, inquiry, and report) could not be determined within the available time and resource constraints, thus precluding the comparison of such costs across all test sites.

3. Comparison of Expected Versus Actual Availability of Data

It was expected that caseload and caseflow statistics would be more readily available; if not being produced by the PMIS, it was expected that manually kept records would be on hand. Monthly statistical reports are currently PMIS generated only by Norfolk and Oklahoma City; such reports are planned for Boston, Portland, and Golden. Only one manually prepared statistical report (from the Norfolk Circuit Court) was available.

More cost-benefit data were expected to be available. Cost savings have been predicted for only two sites using cost-benefit models; none of the other four sites have documented either predicted or actual savings.

It was expected that more data would be available regarding new-PROMIS operations in Golden. INSLAW newsletters and contacts with site personnel indicated that the system was "operational." As used by INSLAW, "operational" means that the software has been installed on the hardware system, and data are being entered into the systems. At the time of the site visit, between 500-700 cases had been entered into the Golden new PROMIS system and inquiries could be made on those cases; however, no scheduled output reports were being produced. Also, the proportion of cases entered to date was so small that the system was not being used in day-to-day operation. Except as indicated above, the availability of other data was as expected.

C. Analysis of Test Data

1. Cost-Benefit Analysis

Quantifying PMIS costs is a relatively easy task compared to quantifying PMIS benefits. Only Portland identified a reduction in prosecutor's staffing and equipment that is expected because of PMIS implementation; these benefits, if reductions actually take place, can be easily quantified. None of the other prosecutor's offices could identify such clearly defined benefits. In Norfolk, however, the police and the courts are active, on-line users of the system and those agencies can identify and quantify extensive benefits directly related to the PMIS.

One important PMIS benefit identified at all sites is the improved capability to track cases. The fact that cases will no longer "fall through the cracks" (an expression used repeatedly), or "fewer cases are dismissed because of age," are improvements indicated by the prosecutor. The PMIS query and response capabilities reduce the burden of manually retrieving case and defendant information, a PMIS benefit of concern to line prosecutors and the support staff. More efficient use of personnel time, a result of improved scheduling using PMIS capabilities, is another benefit often cited by prosecution personnel.

Benefits derived from new reports, which would not be economically feasible without the PMIS, are difficult to define and may be impossible to quantify in many jurisdictions. Portland has used the method of estimating the cost of manually producing new reports and subtracting from that the estimated cost of PMIS report generation to determine a cost savings. This method may be valid for certain types of reports (for example, statistics to satisfy state reporting requirements), but other factors should be considered in determining the value of new reports. A report, although similar or identical in content, may be used differently among jurisdictions or even within a jurisdiction. In Norfolk, for example, the Circuit Court used TRACER case aging and caseload reports to aid in identifying problems regarding the time involved in case processing (see III C 3, below); the result was that less court time is now being spent on serious felony 1 and 2 cases. Similar benefits were not identified in the prosecutor's office, although his office receives similar outputs. Utilization of the TRACER outputs differ between the prosecutor and the court; and the value placed on those outputs would therefore differ between the two agencies. In the prospective INSLAW cost/benefit analysis prepared for Golden, this difficulty is addressed by use of "willingness to pay" as the evaluation measure; however, even that measure is difficult to assess in advance of PMIS implementation.

Benefits can be identified and quantified where PMIS outputs replace manually generated products such as warrants, subpoenas, witness notices, and scheduled reports. Clerical/secretarial personnel can give fairly accurate estimates of the time required to manually produce such items, so costs of manual production can be determined by knowing the wage rate of the producers. The CPU time required by the PMIS to produce these items can be determined and costs derived from the rate charged for CPU usage. A valid estimate of cost savings can be made for those functions actually replaced by PMIS operations.

Benefits change over time. In the Norfolk situation, discussed above, the benefit of decreasing case processing time occurred approximately 20 months after PMIS implementation; the benefit resulted from the initiation of new reports as part of a phased plan for implementing PMIS support.

Other factors will effect the time when PMIS benefits occur:

- In Portland, for example, dual operations (PMIS and manual) are planned for a six-nine month period, and dual operations took place in Boston for an extended time.
- A "learning curve" will be involved for prosecutors who receive management-type reports never before provided to them, and benefits will accrue only after experience has been gained in the utilization of these reports.
- Benefits expected or benefits actually accrued may be reduced or negated by management decisions made after the PMIS has been operational for some time. In Norfolk, for example, two police booking stations were consolidated

into one because of the on-line booking capability of TRACER, resulting in a substantial savings in manpower and equipment. Now, because of transportation problems and fuel consumption, the police are re-opening the second booking station; the costs involved in these operations, along with any reductions in transportation costs, will have to be calculated to determine if quantifiable benefits remain. Other examples include jurisdictions that continue, or revert to, manual recordkeeping because of inaccuracies in PMIS outputs, although the PMIS continues to generate the outputs; the PMIS generated report may have originally been considered a benefit, but has emerged as an added cost in such situations.

In those jurisdictions where technical resources are limited (Oakland and Boston, for example), benefits are slow in developing because PMIS personnel must devote full time to daily operations. In both jurisdictions, the PMIS is primarily a case/defendant tracking system with printed outputs to support scheduling, case assignments, and retrieving of information. Both jurisdictions plan to have statistical reports, but neither jurisdiction will reap benefits from such outputs for some time. The quantification of benefits at these sites would depend, primarily, on the value judgments of the prosecutors because little in the way of personnel and equipment cost savings can be identified. It was interesting to note, however, that the Oakland PMIS had an impact on legislation* and that the Boston PMIS has proven helpful to the police**, which are examples of other benefits that would require judgments to quantify -- or possibly cannot be quantified at all. Even though very few quantifiable benefits can be identified for these systems, the prosecutors are enthusiastic about the improved capabilities provided by the PMIS and, at this point, certainly consider the system to be worth the cost.

*DALITE was used by the Alameda County prosecutor's office to aid in the research of cases involving the "Ballard Motion" which required rape victims to submit to psychiatric treatment prior to trial. Cases that involved a motion (the Ballard Motion, per se, could not be identified by the system) were selected and listed by the PMIS. The prosecutors performing the research then retrieved file jackets for only those cases on the list, precluding the need to look at all file jackets for motions. The research revealed extensive delays in trial proceedings because of the Ballard Motion. The resulting court decision on the matter led to repeal of the Ballard Motion legislation.

**One Boston police investigator uses the PMIS generated schedule of cases to identify persons scheduled to appear in court who are "friends of fugitives." On the day of trial, the investigator visits the court to see if the fugitive shows up as a spectator at his friend's trial. A number of fugitive arrests have been made using this procedure.

The main points emerging from this analysis of cost-benefit data are:

- A PMIS may provide benefits to more than just the prosecutor, even in those jurisdictions where the prosecutor has sole access to the system, and particularly where the system is shared by other criminal justice agencies. An analysis of PMIS costs and benefits should, therefore, include the examination of capabilities and outputs provided to all agencies concerned.

- A number of benefits can be identified that may be difficult or impossible to quantify. Some benefits can be quantified merely by comparing the cost of manual versus PMIS functions; while other benefits require a judgment of their value by the users, for which there is no standard measurement.

- The results of a cost-benefit analysis may be invalidated by subsequent events that violate the assumptions of the analysis and affect the magnitude of a given cost or benefit element.

2. Performance Measures

Of the six sites selected for field investigations, two were considered as a priori evaluation sites because their PMIS's or certain key applications were not operational over a sufficient period of time.* Portland's MAXI or new PROMIS system was not yet operational** at the time of the site visits and Boston's statistical and management reporting capability was not yet operational. In these two sites, the feasibility study focused on the issue of constructing a baseline on criminal justice performance and following changes prospectively.

In the four sites selected for a posteriori analysis, the intent was to construct a data base spanning at least two years, consisting of monthly summaries of case dispositions, delay, and other pertinent performance measures identified in the evaluation framework in Section II of Volume I. It was also desired to include data on control variables, such as caseload and type of case. The field investigation included an examination of alternative methods of data collection, e.g., derivation of data from processing of computer files, tabulations drawn from copies of previously produced monthly statistical reports, and tabulations drawn from a manually retrieved sampling of court case files.

A data base consisting of 36 monthly summaries was constructed for the city of Norfolk, starting with January 1977, or six months after the PMIS

* Operational two or more years.
**For the purpose of this study, a PMIS was considered operational if data were being entered and if outputs (e.g., visual displays in response to inquiries and/or printed reports) were being produced.

became operational. The following performance measures were computed for felony 1, felony 2, and other felony cases:

- number and rates of cases terminated, by plea;
- number and rates of cases terminated, by court dismissal;
- number and rates of cases terminated, by nolle by prosecutor;
- number and rates of cases terminated, by trial;
- mean days from arrest to indictment;
- mean days from indictment to trial;
- mean days from trial to sentencing;
- number of fugitives added;
- number of fugitives apprehended; and
- cases set for trial.

In addition, certain workload variables were available, including the number of cases commenced: type, number of hearings, and jury-trial days. A measure of court backlog was available through a special manual system maintained by the court administrator, but was not kept in the computer system.

In order to discern patterns of change, each performance measure was plotted against time in producing a two dimensional graph. To facilitate visual comparisons of the relative magnitude of change across the various plots, the values on the vertical scale (i.e., the impact measures) were standardized to vary from -2 to +3, with some outliers.

Several performance measures exhibited a change in pattern following this PMIS implementation. The number of felony 1 and 2 cases terminated by guilty plea had been declining between January, 1977 (time period 1 in the data) and March, 1978 (time period 15); then appeared to start increasing in a parabolic fashion as depicted in Figure 4. A possibly related pattern of change was observed for mean days from indictment to trial; this pattern changed from a rising one to a leveling off around the 15th month, as shown in Figure 5. The third variable for which a change in pattern occurred also would appear to be related. A rising pattern in the number of felonies dismissed by the court, other than felony 1 and felony 2, was observed starting about the 14th month (see Figure 6). These three patterns could be consistent with a policy of reducing backlong and delay of serious cases through more intensive plea bargaining and court dismissals. This hypothesis was examined during the impact analysis described below.

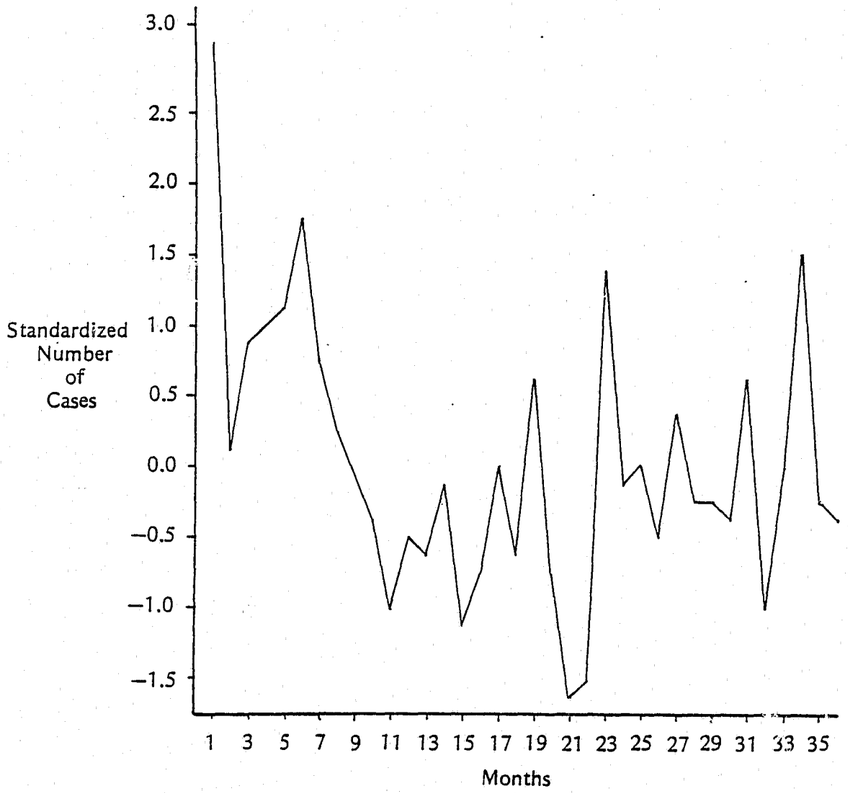


Figure 4. Cases terminated by guilty plea, felony 1&2

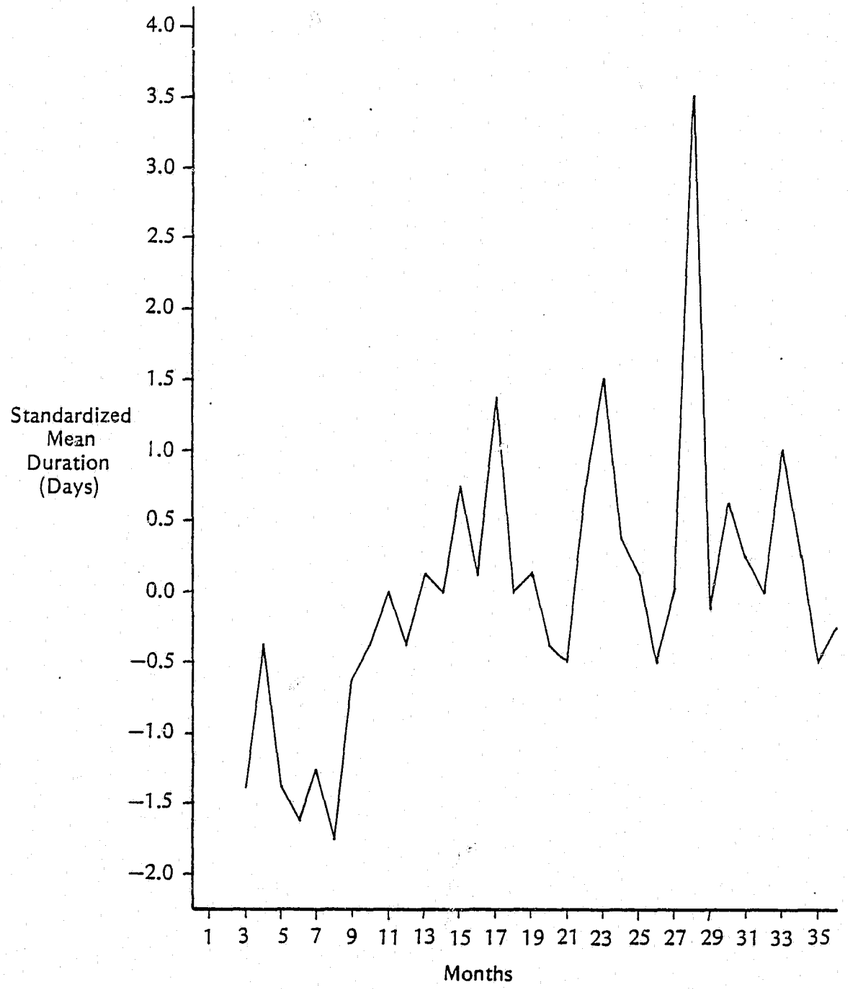


Figure 5. Mean days, indictment to trial

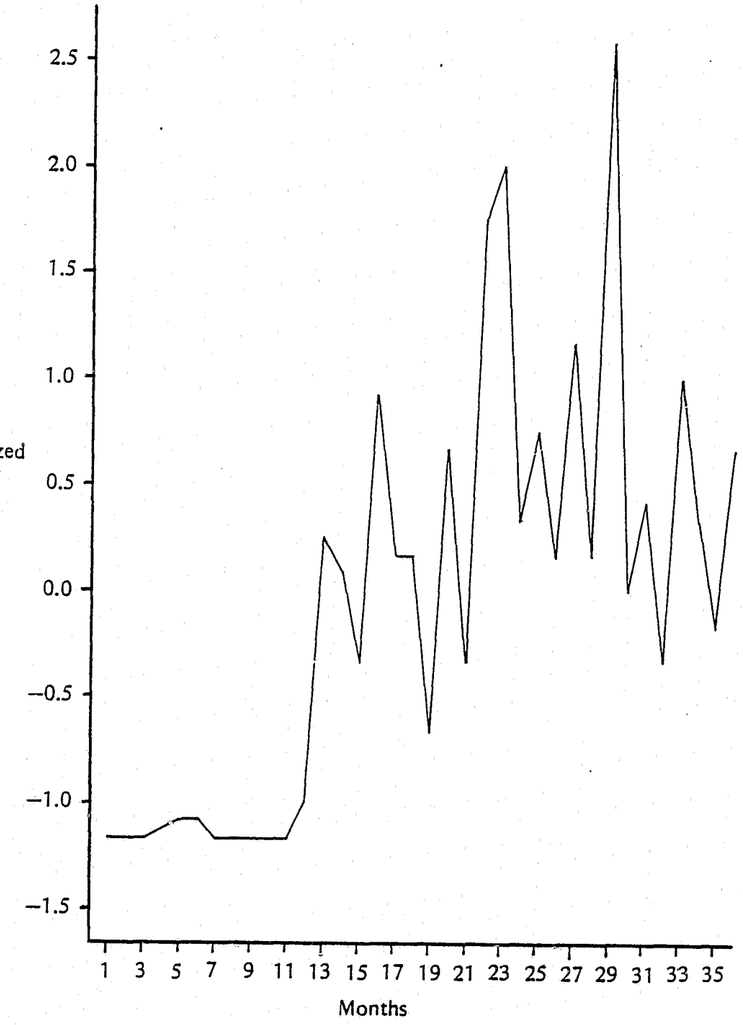


Figure 6. Other felony cases dismissed by court

It was desirable to attempt to adjust performance measures to indicate relative efficiencies, that is to divide by caseload volume. We would like to have divided each month's figures by the backlog (defined as cases pending for prior month, plus cases commenced, less cases terminated). However, because the backlog of pending cases was not available in the computer system, a surrogate measure, cases commenced, was used to adjust for workload.

The analyses indicated no substantial change in patterns of performance over the 36 month period for many of the measures, whether or not account was taken of the court's workload, as indicated by cases commenced. For example, Figure 7 depicts the pattern observed for felony cases terminated by trial.

Additional data for measuring performance are maintained on Norfolk's TRACER system, but these data were available for only a portion of the 36 month time series period. These data include:

- Trial outcomes -- guilty, not guilty
- Convictions -- on original charge, or reduced charge
- Cases terminated -- filed this term, filed five months or less

3. Impact Analysis

The measurement of the impact of the PMIS on the prosecution/court process involves two aspects of analysis -- descriptive and explanatory. First, changes in patterns of prosecution/court performance need to be detected. Second, the analysis must attempt to determine whether the change can be attributed to the PMIS. The latter explanatory analysis attempts to rule out effects of external events such as policy or personnel changes.

Each variable was plotted over the 36 month time frame. The pattern of variation in several of the performance measures exhibited a change around March, 1978, the 15th month. Thus, a change in performance was observed. This raised the question -- did the change arise due to the use of TRACER? As indicated in the discussion on the performance measures, the observed changes could have been due to the change in chief judge and the institution of a master calendaring procedure for assigning judges to cases. According to the clerk of the court, it also could have been partially due to the improved utilization of TRACER. This finding would be consistent with a hypothesis that after a 15-month "break-in" period TRACER assisted the prosecutor and court in monitoring cases more efficiently; thereby increasing pleas and reducing time delays. Insufficient information was available to decide this aspect of the analysis.

In order to identify and measure any impact of the PMIS, it is useful to hypothesize a set of expected impacts. Such hypotheses were formulated for Norfolk's TRACER system as part of the Evaluation Framework described in Chapter 1. Of course, the hypotheses actually tested were limited by the availability of data.

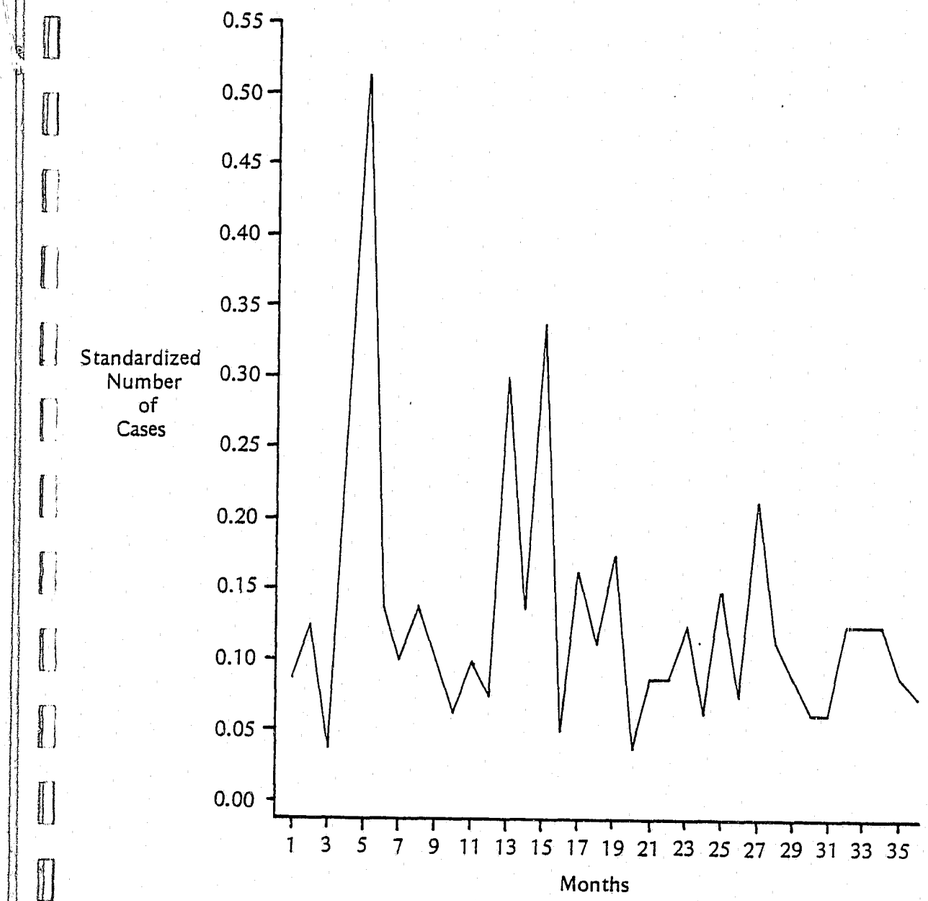


Figure 7. Felony cases terminated by trial

One hypothesis was discussed above, i.e., that improved case tracking added by TRACER enabled the increase in guilty pleas for felony 1 and 2 cases and helped the court reduce time delays. In order to further examine possible impact, a productivity index was hypothesized. This index was structured to combine measures of efficiency and effectiveness. It was hypothesized that productivity would rise as the impact of the PMIS (TRACER, in this case) was felt. The productivity index was assumed to vary directly with cases terminated by plea, cases terminated by trial, cases set for trial, and fugitives apprehended. It was assumed to vary inversely with mean days from arrest to trial, cases nolled and dismissed, and fugitives added. These assumptions were tested for each class of felonies by means of factor analysis. Following validation of these assumptions, the factor loadings were used to construct the productivity index. The index, in turn, was used to test the hypothesis that the PMIS improved productivity.

Six variables were selected for inclusion in the factor analysis, consistent with the hypotheses to be tested, the availability of data, and examinations of preliminary data plots. The six variables were total cases terminated by plea, by dismissal and by trial, fugitives added, fugitives apprehended, cases set for trial, and mean time from arrest to trial. The factor analysis had the effect of reducing the number of variables from seven to three.

The three factors are summarized below, indicating those variables which are highly correlated (.7 or higher factor loading):

(1) Factor 1 (positive productivity)

- Cases terminated by plea - factor loading .887;
- Cases terminated by trial - factor loading .768;
- Cases set for trial - factor loading .744;

(2) Factor 2 (negative productivity)

- Cases terminated by dismissal/nolle - factor loading .696;
- Fugitives added - factor loading .814;
- Fugitives apprehended - factor loading .872, and

(3) Factor 3 (delay)

- Mean days from arrest to trial, factor loading .949.

Plots of each factor against time were then performed to attempt to detect any changes in patterns, especially in testing the hypothesized impact relationships.

The fluctuations in Factor 1 identified with positive productivity showed very little change in trend over time. A similar lack of any identifiable impact of the PMIS (see Figure 8) resulted when the variables were converted to rates, i.e., divided by the corresponding figures for cases commenced. The fluctuations in Factor 2 associated with negative productivity variables also appeared to be random either in unadjusted form (see Figure 9) or when adjusted for workload. The delay factor also showed no substantial change in pattern. Thus, there was no support for any hypothesized impact relationships on the total caseload. However, it remained to be tested whether impacts were masked by lumping all felonies together.

A finding that there was little impact of TRACER on the court and prosection system would have been consistent with certain observations during the site visits. TRACER was being used by the prosecutor for case and defendant status monitoring via terminal inquiry. However, based on interviews of the prosecutor's office in Norfolk, it was concluded that TRACER was underutilized by the prosecutors. The court and police appeared to understand and use TRACER capabilities, but the prosecutor's office needed to be educated and upgraded especially in the use of management statistics.

The above factor analysis showing no discernible impact occurred using variables that measure "all felonies" as one class. When classes of felonies were looked at separately, some changes were observed, as discussed in the performance section. The observed changes in pattern of felony 1 and 2 pleas, average days from indictment to trial and court dismissal rates lent some support to a theory that TRACER was having some impact by helping to expedite case processing. A followup phone call to the Norfolk Circuit Court revealed that the court started to use TRACER outputs, during the observed time period, to examine the age of cases and as an aid in enforcing stricter controls on case processing. Emphasis was placed on the most serious charges in indictments by seeking guilty pleas in favor of dismissing lesser included charges. The court believed that as a direct result, the number of felony 1 and 2 pleas increased, the rate of dismissals increased, and the average days from indictment to trial decreased. The data appeared to support the court's belief that TRACER had such an impact. The project staff also learned that a new chief judge took over about the time that the change was observed. He had a reputation for being tough and instituted a master calendaring procedure to preclude judge shopping, i.e., the judge was not assigned to a case until the day of trial. This change might also help to explain the observed change in disposition rates.

A more conclusive time series analysis would be possible through the use of cross-sectional data involving a group of jurisdictions. This type of design would enable the inclusion of additional control variables.

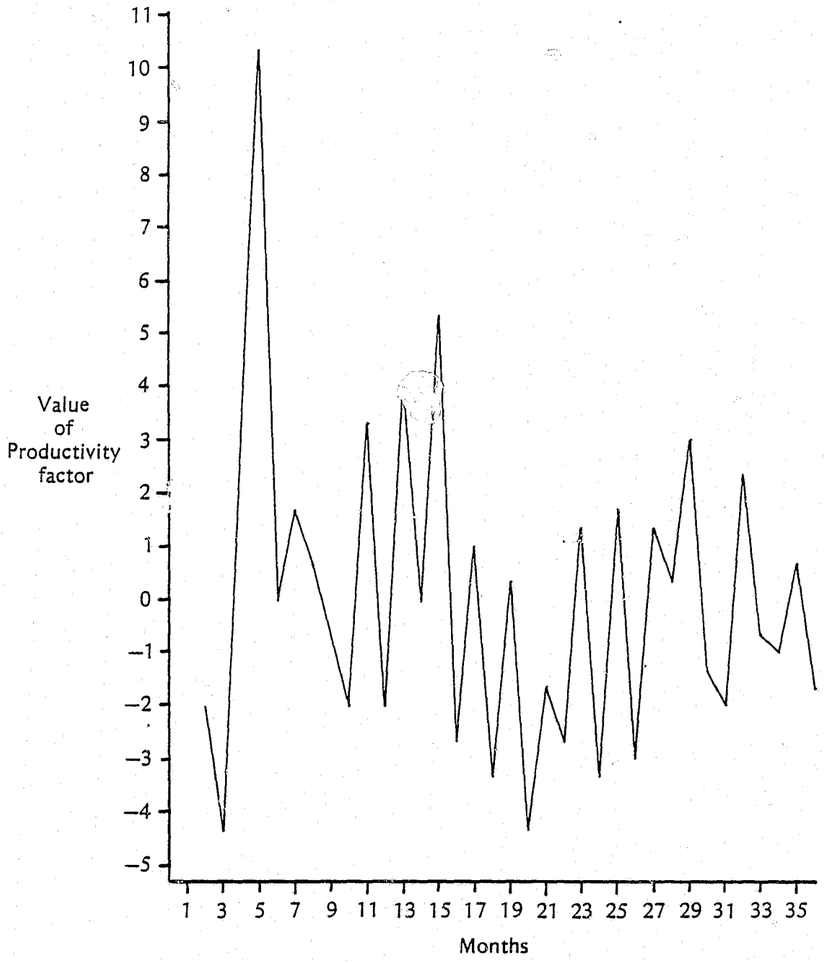


Figure 8. Value of positive productivity factor (dispositions by plea, trial, cases set for trial), by month

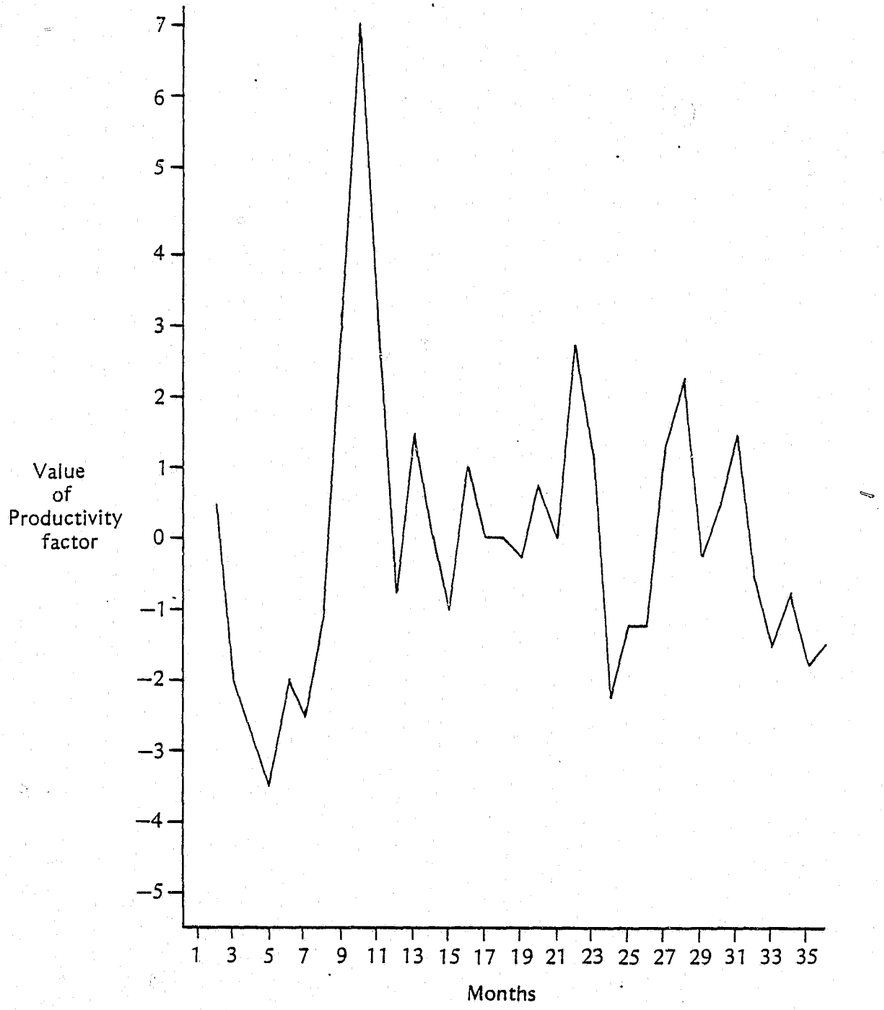


Figure 9. Value of second productivity factor (dismissals/nolles, fugitives added, fugitives apprehended), by month

D. Conclusions Regarding Feasibility Issues

1. Cost-Benefit Analysis

Although several cost-benefit models exist and these models have been used for predictions (predominately PROMIS sites), no evidence was found among the 19 jurisdictions visited during this entire study that cost-benefit analyses have been performed after PMIS implementation. Analysis after PMIS implementation will require close cooperation among the PMIS users, particularly to obtain agreement that users are willing to provide value judgments (i.e., give dollar values) for intangible benefits.

The goals that a prosecutor establishes for his PMIS are helpful in identifying PMIS benefits. During this study, prosecutors were asked to identify their PMIS goals, and to rate the PMIS regarding "expected" and "actual" contributions toward goal attainments. The ratings were given on a scale of 1-100, but the same approach can be helpful in assigning a dollar value to related benefits.

Many PMIS projects are implemented in phases. The most common practice is to start by entering data for one type of case (i.e., felonies). Once satisfied with the data entry and basic day-to-day operations of the system for the initial case type, the next type of case (i.e., misdemeanors) will be initiated. PMIS applications may also be implemented in phases. The trend is for daily outputs, such as calendars and schedules, to be initiated first, followed sometime later (usually months later) by management reports, such as statistical outputs. PMIS support to daily prosecution operations will reflect some benefits. If cost-benefit analysis is to be used in conjunction with the analysis of PMIS impact on the prosecution process, such an analysis should not be attempted until after management outputs have been produced for 9-12 months (which will also allow time for a "learning curve" regarding use of such outputs).

Performing retrospective PMIS cost-benefit analysis is considered feasible provided that the PMIS is operational for 24-26 months prior to analysis.

2. Availability of A Priori Baseline Data for A Impact Analysis

A feasible approach toward construction of the baseline is to combine the use of several data sources, i.e., available statistical reports and special tabulations drawn from a sampling of case records, to generate performance measures.

Where reports on caseload and dispositions are available, they can provide a point of departure in constructing the baseline. Comparability and reliability of annual reports are open to question, and some effort needs to be made to check validity through an external source. A statistical sample of several hundred cases should be drawn manually from the files of cases terminated during the baseline year. Most data could be obtained from court

files. Some data could be obtained from the prosecutor's files. Experience in the field investigations indicated that it would be feasible to construct such a data base for computation of the required performance measures if staff time of about 20 minutes per case could be allocated to the data collection effort.

3. Availability of Time Series Data for A Posteriori Impact Analysis

During the field investigations, the manually maintained prosecution and court case files were examined to ascertain the feasibility of extracting data for constructing a time series. Most jurisdictions maintain their case files in sequence by court case number, and generally these numbers are assigned chronologically on the date the case is filed in court, i.e., accepted for prosecution. In order to obtain statistics on cases for which prosecution is declined, one would have to search the prosecutor's files. Such cases are usually filed by defendant's name or police complaint number. Thus, the most convenient method of selecting the sample is based on the date of case filing. If a large enough sample is drawn, starting with cases filed about one year before installation of the computer (to allow time for building up case terminations), then a representative time series could be constructed. The sample would need to be large enough to generate a sufficient sampling of all the desired subpopulations, e.g., cases declined, cases going to trial, cases dismissed, and other categories for which separate performance measures are desired. The size of the sample required will also depend on the purpose of the task. For example, to produce a set of baseline statistics for a single time frame, a sample of about 400 cases should be sufficient. However, to generate the complete time series data base for impact evaluation would require about 24 monthly summaries. To construct such a data base would probably require a sample exceeding 1,200 cases to be followed through to disposition. Using an estimated 20 minutes per file, about 400 person hours would be required to tabulate the data. The latter type of effort is considered neither feasible nor necessary by the project staff. Since the purpose of the task is to evaluate the impact of the PMIS, it is reasonable to assume that the PMIS would be available to monitor its own performance, and require manual samplings only as supplemental data.

The feasibility of collecting time series data from computer based records was investigated by obtaining computer tapes from Norfolk, Golden and Oakland. The Oakland tape was not readable on Westat's IBM 370 due to some hardware incompatibilities. Oklahoma City could have provided the tape, but required that a written request be submitted to the Governor's Commission for approval. This was not feasible, in view of some potential political sensitivities to release of such data and because of time constraints of the project. The Norfolk (IBM) and Golden (Honeywell) tapes were readable. The project budget did not permit the use of the Golden tapes in time series analysis. However, based on use of the Norfolk tapes, it was the judgment of the staff that it would be feasible to construct a time series data base from the Golden tapes if more time and resources were made available.

4. Analytical Techniques

Analytical techniques were examined for feasibility in three areas:

- cost analysis;
- performance measurement; and
- impact evaluation.

In respect to the first two areas, there are major problems in constructing an adequate data base for subsequent analysis. The need to define appropriate and comparable measures of cost and performance, and collect the required data over the relevant time periods are discussed elsewhere in this report. However, given uniformly defined data elements, the analytical techniques for estimating development and operational costs and productivity/performance for prior periods of activity are conventional. Quantitative techniques for predicting project costs or criminal justice system performance are more challenging. Some predictive cost models were applied by sites, e.g., Portland's cost estimates are discussed elsewhere in this report. Various models for predicting criminal justice system performances exist in the field.* These are considered outside the scope of this feasibility study.

The feasibility issue examined, with respect to analytical techniques, concerned the adequacy of methods of evaluating the actual impact of the PMIS on the court environment. In accordance with the interrupted time series design presented earlier, a data base of monthly activity, spanning at least two years of criminal justice operations, was desired preferably including a period preceding the date the PMIS was considered operational. Given such a data base, techniques were needed to (1) detect any changes in the patterns of criminal justice system activity, and (2) determine the extent to which those changes are attributable to the intervention of the PMIS.

The data base assembled for the Norfolk TRACER system was used in examining the feasibility of applying interrupted time series analysis techniques for impact evaluation. The methods employed combined judgmental assessments of information obtained through on-site interviews and observations, with information obtained through interpretations of statistical analyses of the time series data.

Techniques for detecting changes in the patterns of criminal justice activity appeared to be sufficient. We examined monthly statistics on basic performance measures such as case load, rates of case terminations by plea, trial and dismissal, delay, fugitives apprehended and added, and scheduling

*For example, see "Criminal Justice Model: An Overview," J. Chalken, et al, National Institute of Law Enforcement and Criminal Justice, April 1976.

activity. Bivariate relationships were analyzed first, i.e., the data variables were plotted against time to detect any changes in patterns. For example, was there a change in the rate of dismissals or in the average number of days from arrest to trial of felony cases? We next tried to adjust for the possibility of "noise" in these bivariate relationships, that is, the presence of errors, random variation, and confounding effects of one variable on another. Factor analysis techniques were used and the factors were plotted against time.

This analysis also involved hypothesis testing, i.e., examination of the results in the light of certain hypothesized effects of a PMIS, as discussed above in the section "Analysis of Time Series Data." The results of the statistical analysis were also compared with the judgmental assessments obtained from the site visit. The project staff concluded that while limited in scope, the techniques for detecting changes in patterns of criminal justice activity are reasonably sensitive and adequate. Again, a crucial aspect of this task is data base development. For example, data on comparative staff attitudes and capacities were obtained only through imprecise anecdotal and observational methods in one site visit. Such information obtained through more systematic observation over the time frame of analysis would have more accurately detected change.

The second set of analytical techniques -- to attribute changes to the PMIS intervention -- is much more demanding. To attempt to perform this attribution, a non-experimental interrupted time series design was adopted as described earlier. A set of hypotheses was formulated to predict the potential impact of the PMIS. Given such a theoretical framework with a sufficiently rich set of control variables, supplemented by judgmental assessments derived from site interviews and observations, it was felt that a credible impact evaluation could be accomplished. The Norfolk PMIS was the only one for which a usable time series data base for impact measures could be constructed in the feasibility study. The data base was limited; it was sufficient for measuring impact but not for attribution analysis due to an inadequate number of control variables. In the judgment of the project staff, an adequate time series data base could be constructed in the test sites, using the available PMIS to monitor changes over time, if sufficient time and resources were available. Given an adequate data base, the techniques for analyzing time series data to test hypotheses are considered adequate for impact evaluation, especially if supplemented by judgmental assessments of experienced evaluation researchers.

5. The State-of-the-Art in PMIS Use

Assessments made by the project staff, during the first segment on-site surveys, indicated that many PMIS's were used effectively to support day-to-day case processing operations, but few were used effectively as strategic management tools, i.e., to support management policy development and decisionmaking. (For five of seven features supporting day-to-day operations, more than 90 percent of the PMIS projects had some capability and more than

80 percent had state-of-the-art capability. The same was true for only one of nine management features.) Nothing was observed in the field investigations to change this impression. Indeed, the evidence gathered reinforced the contention that these systems are not yet being utilized to anywhere near their capacity as management information systems. In order for such systems to have an impact, they first must be understood and used. In the course of the site visits, the project staff found that most prosecution managers did not sufficiently understand the potential of the PMIS, nor were they very interested in using it as a tool for management, as distinguished from its use in case monitoring.

There are notable exceptions, however, to the above observations on the apathy of prosecution managers toward the PMIS as a management tool. Many of the district attorneys, i.e., the top managers, participating in the PROMIS Users Group do appear to be highly motivated toward understanding and using PROMIS as a tool in policy development, management decisionmaking and court reform. The difference between PROMIS and non-PROMIS jurisdictions with respect to top management backing is quite noticeable. Many non-PROMIS jurisdictions could benefit by establishing technology-or concept-sharing user organizations of their own or exchanging information with other users under the auspices of the National District Attorneys' Association or similar associations.

E. Remaining Research on PMIS Evaluations

The field investigations reported here have been necessarily limited in scope. They have indicated the feasibility of conducting in-depth evaluations of PMIS projects, but they have not constituted such in-depth evaluations. Also, with just six sites, the sample is too small to do any cross-sectional analysis. The latter type of design, coupled with time series analysis, offers the best opportunity for performing in-depth evaluations. Thus, it remains to examine the feasibility of constructing and analyzing a cross-jurisdictional time series data base for evaluating PROMIS and non-PROMIS projects. In the process of constructing and analyzing such a data base, a set of actual in-depth evaluations should be carried out as an extension of the research methodology tested in the field investigations reported here. The research should include the use of non-PMIS generated data to supplement the analysis.

As indicated earlier in this report, several classes of PMIS projects were identified. Some classes appear to be more cost effective than others. A cooperative research project involving about 30 jurisdictions in constructing a cross-sectioned time series data base would create a powerful vehicle for performing in-depth evaluative research.* It would also create the opportunity for exchanging user information, disseminating research results

*Much of the necessary data are being compiled under the National Institute of Justice Cross-Jurisdictional Analysis.

and, in general, educating and upgrading PMIS users. By including both PROMIS and non-PROMIS users, more broadly applicable and realistic evaluations and exchanges of information would result. This would provide the greatest opportunity to assure that the PMIS is well understood and used for both operational and management uses, and that the impact of such use can be measured and evaluated. The implications of such research for the Bureau of Justice statistics program are apparent. The participating PMIS projects could be used to generate a wide array of comparable criminal justice statistics in support of both longitudinal and cross-sectional analysis.

Another issue to be explored in evaluating PMIS projects is the prediction of criminal justice system costs and performance. The application of stochastic (probabilistic) modeling and simulation techniques should be explored because such predictions are relevant in evaluating PMIS projects. Comparisons of actual with predicted results should assist in advancing the state of the art of evaluative and modeling research, as well as being intrinsically useful in improving PMIS and criminal justice statistics programs.

An evaluation of the comparative utility and of PMIS generated statistics versus periodic surveys by independent statistical agencies (Census or BLS models) should be performed. There are inherent advantages and disadvantages in developing and utilizing both approaches in an ongoing BJS sponsored statistical program.

APPENDIX A

Persons Contacted at Feasibility Test Sites

Norfolk, VA

Norfolk Police Department

Capt. Niel Koch
Sgt. D. H. Mason
James Barnhill

Data Processing Division

J. W. Nixon
Bill Garbee
Richard Nichols
LeAnn Diller

Commonwealth Attorney's Office

Tom Baldwin
Ginger Nicholson
Carol Marx
Tom Rutherford

Circuit Court

Charlie Greene

District Court

Alan C. Hooper

Oakland, CA

District Attorney's Office

D. Lowell Jensen, District Attorney
Don Ingraham
Rod Rollefson
Kathy Bergland
Richard Haugen
Ruby Freitas
Dave Budde
Peggy Richmond
Nina Wood

Oakland, CA (Continued)

District Attorney's Office

Don Whyte
Ben Graves
William M. Baldwin
Bill McGuinness
Yvonne Ayers
Diane Bullock

Court Administrative Office

Herbert L. Pike

Portland, OR

District Attorney's Office

Jack Pessia
Chrys A. Martin
Suzanne Lewis
Dorthea Anderson
Kelly Bacon
Wayne C. Pearson

Multnomah County Data Processing Authority

Jack Wilson
Bob Davidson

Circuit Court

Charles Benard
Adele Goggins

Oklahoma City, OK

Statistical Analysis Center, Oklahoma Crime Commission

Jim Wilson
Jon Steen
J. Patrick Sweeney
Jane Bluejacket
Neal Gilson

Oklahoma City, OK (Continued)

Oklahoma State Bureau of Investigation

Paul D. Boyd

District Attorney's Training Coordination Council

Tom Elliott
Niles Jackson

Pottawatomi County District Attorney's Office

Tom Tompson

Golden, CO

District Attorney's Office, First Judicial Court

Nolan L. Brown, District Attorney
Dan B. Fahrney
Maurice H. Bennett, Jr.
Kristen M. Beauchamp
Mary L. Simon
Larry Webster
Jerry L. Jorgenson
Ray Kechter
Steve Siegal
Jack Long
C. Stephen Cantrell
Judi Webb
Pat Blackard

Colorado District Attorney's Council

Diane Edes
Daryl Anderson

District Attorney's Office, 18th Judicial Circuit

Roger Allott

Jefferson County Department of Data Processing

James Opp
Don Haakinson

Golden, CO (Continued)

Lakewood Police Department

Lt. Bruce Glasscock

First Judicial Circuit

Daniel J. Shannon, Presiding Judge
Anthony F. Vollock, Judge

Boston, MA

District Attorney's Office

George Gushue
John Duffett
Bernie Dwyer
Bob Powers
Dave Rodman
Jim Lynch
Daniel C. Mullane
Marion Walsh

Boston Metropolitan Police Department

Det. John V. Nee

APPENDIX B

MONTHLY STATISTICAL FILE

Variable Name	Variable Abbreviation	Source of Data*
1. Date (Month/Year)		All sources
2. Cases commenced		Circuit Court
2.1 By indictment, presentation or information		
2.1.1 Felony 1 and 2	CC1	
2.1.2 Other felonies	CC2	
2.2 All others		
2.2.1 Felony 1 and 2	CC3	
2.2.2 Other felonies	CC4	
2.3 Total commenced		
2.3.1 Felony 1 and 2	CC5	
2.3.2 Other felonies	CC6	
2.4 Total commenced - all felonies	CC7	CC5+CC6
2.5 Total commenced - all felonies (time minus one month)	CC10	CC5+CC6 (T-1)
3. Cases terminated		Circuit Court
3.1 Dismissed by court		
3.1.1 Felony 1 and 2	CT1	
3.1.2 Other felonies	CT2	

*Source of data is indicated for each major category of variables (e.g., circuit court indicates data was taken from the monthly statistical report prepared by that agency). Data for variables in sub-categories are taken from the same source unless otherwise indicated; where the source is indicated as being derived from other variables (e.g., CC5+CC6), the values of the indicated variables were added together to create data needed.

MONTHLY STATISTICAL FILE

Variable Name	Variable Abbreviation	Source of Data*
3. Cases terminated (Continued)		
3.3 Guilty plea		
3.3.1 Felony 1 and 2	CT5	
3.3.2 Other felonies	CT6	
3.4 Trial by judge		
3.4.1 Felony 1 and 2	CT7	
3.4.2 Other felonies	CT8	
3.5 Trial by jury		
3.5.1 Felony 1 and 2	CT9	
3.5.2 Other felonies	CT10	
3.6 Total cases terminated		
3.6.1 Felony 1 and 2	CT11	
3.6.2 Other felonies	CT12	
3.7 Total cases terminated by court and prosecutor	CT13	CT1+CT2+CT3+CT4
3.8 Total cases terminated by guilty plea	CT14	CT5+CT6
3.9 Total cases terminated by judge and jury	CT15	CT7+CT8+CT9+CT10

*Source of data is indicated for each major category of variables (e.g., circuit court indicates data was taken from the monthly statistical report prepared by that agency). Data for variables in sub-categories are taken from the same source unless otherwise indicated; where the source is indicated as being derived from other variables (e.g., CC5+CC6), the values of the indicated variables were added together to create data needed.

MONTHLY STATISTICAL FILE

Variable Name	Variable Abbreviation	Source of Data*
4. Fugitives		Circuit Court
4.1 Apprehended during month		
4.1.1 Felony 1 and 2	FG1	
4.1.2 Other felonies	FG2	
4.2 Added during month		
4.2.1 Felony 1 and 2	FG3	
4.2.2 Other felonies	FG4	
4.3 Total fugitives added during month	FG5	FG3+FG4
4.4 Total fugitives apprehended during month	FG6	FG1+FG2
5. Pending cases		Circuit Court
5.1 Cases in abeyance, end of month		
5.1.1 Felony 1 and 2	PC1	
5.1.2 Other felonies	PC2	
5.2 Total cases in abeyance, end of month	PC3	PC1+PC2

*Source of data is indicated for each major category of variables (e.g., circuit court indicates data was taken from the monthly statistical report prepared by that agency). Data for variables in sub-categories are taken from the same source unless otherwise indicated; where the source is indicated as being derived from other variables (e.g., CC5+CC6), the values of the indicated variables were added together to create data needed.

MONTHLY STATISTICAL FILE

Variable Name	Variable Abbreviation	Source of Data*
6. Cases set for trial		Circuit Court
6.1 Cases assign trial dates	CSFT1	
6.2 Cases not set for trial	CSFT2	
7. Number of jury trial days	DJT	Circuit Court
8. History of terminated cases		Circuit Court
8.1 Filed this term		
8.1.1 Felony 1 and 2	HTC1	
8.1.2 Other felonies	HTC2	
8.2 Filed prior to this term, but not more than five months ago		
8.2.1 Felony 1 and 2	HTC3	
8.2.2 Other felonies	HTC4	
8.3 From five to nine months ago		
8.3.1 Felony 1 and 2	HTC5	
8.3.2 Other felonies	HTC6	
8.4 More than nine months ago		
8.4.1 Felony 1 and 2	HTC7	
8.4.2 Other felonies	HTC8	

*Source of data is indicated for each major category of variables (e.g., circuit court indicates data was taken from the monthly statistical report prepared by that agency). Data for variables in sub-categories are taken from the same source unless otherwise indicated; where the source is indicated as being derived from other variables (e.g., CC5+CC6), the values of the indicated variables were added together to create data needed.

APPENDIX B (Continued)

MONTHLY STATISTICAL FILE

Variable Name	Variable Abbreviation	Source of Data*
8. History of terminated cases (Continued)		
8.5 Total cases terminated this month		
8.5.1 Felony 1 and 2	HTC9	
8.5.2 Other felonies	HTC10	
9. Felony indictments		Prosecutor
9.1 Total defendants	FI1	
9.2 Number commenced	FI2	
9.3 Number pending	FI3	
9.4 Total number concluded	FI3	
10. Concluded by reason		Prosecutor
10.1 Number reduced	CBR1	
10.2 Number convicted	CBR2	
10.3 Number acquited	CBR3	
10.4 Number dismissed	CBR4	
10.5 Number nolle prose	CBR5	

*Source of data is indicated for each major category of variables (e.g., circuit court indicates data was taken from the monthly statistical report prepared by that agency). Data for variables in sub-categories are taken from the same source unless otherwise indicated; where the source is indicated as being derived from other variables (e.g., CC5+CC6), the values of the indicated variables were added together to create data needed.

APPENDIX B (Continued)

MONTHLY STATISTICAL FILE

Variable Name	Variable Abbreviation	Source of Data*
10. Concluded by reason (Continued)		
10.6 Number withdrawn	CBR6	
10.7 Number of others	CBR7	
10.8 Total number dismissed, nolle and withdrawn	CBR8	
10.9 Total number convicted and acquitted	CBR9	
11. Commenced by charge		Prosecutor
11.1 Assault	CBC1	
11.2 Felonious assault	CBC2	
11.3 Burglary	CBC3	
11.4 Manslaughter	CBC4	
11.5 Murder	CBC5	
11.6 Rape	CBC6	
11.7 Robbery	CBC7	
11.8 Attempted robbery	CBC7	

*Source of data is indicated for each major category of variables (e.g., circuit court indicates data was taken from the monthly statistical report prepared by that agency). Data for variables in sub-categories are taken from the same source unless otherwise indicated; where the source is indicated as being derived from other variables (e.g., CC5+CC6), the values of the indicated variables were added together to create data needed.

APPENDIX B (Continued)

MONTHLY STATISTICAL FILE

Variable Name	Variable Abbreviation	Source of Data*
12. Event duration		History Tape
12.1 Average number of days from arrest to indictment	ED1	
12.2 Average number of days from indictment to trial	ED2	
12.3 Average number of days from trial to sentencing	ED3	
13. Convictions and incarcerations		History Tape
13.1 Number sentenced	CI1	
13.2 Average actual sentence	CI3	
14. Number of felony bookings	ARRESTS	History Tape
15. Number of preliminary hearings	HEARINGS	District Court

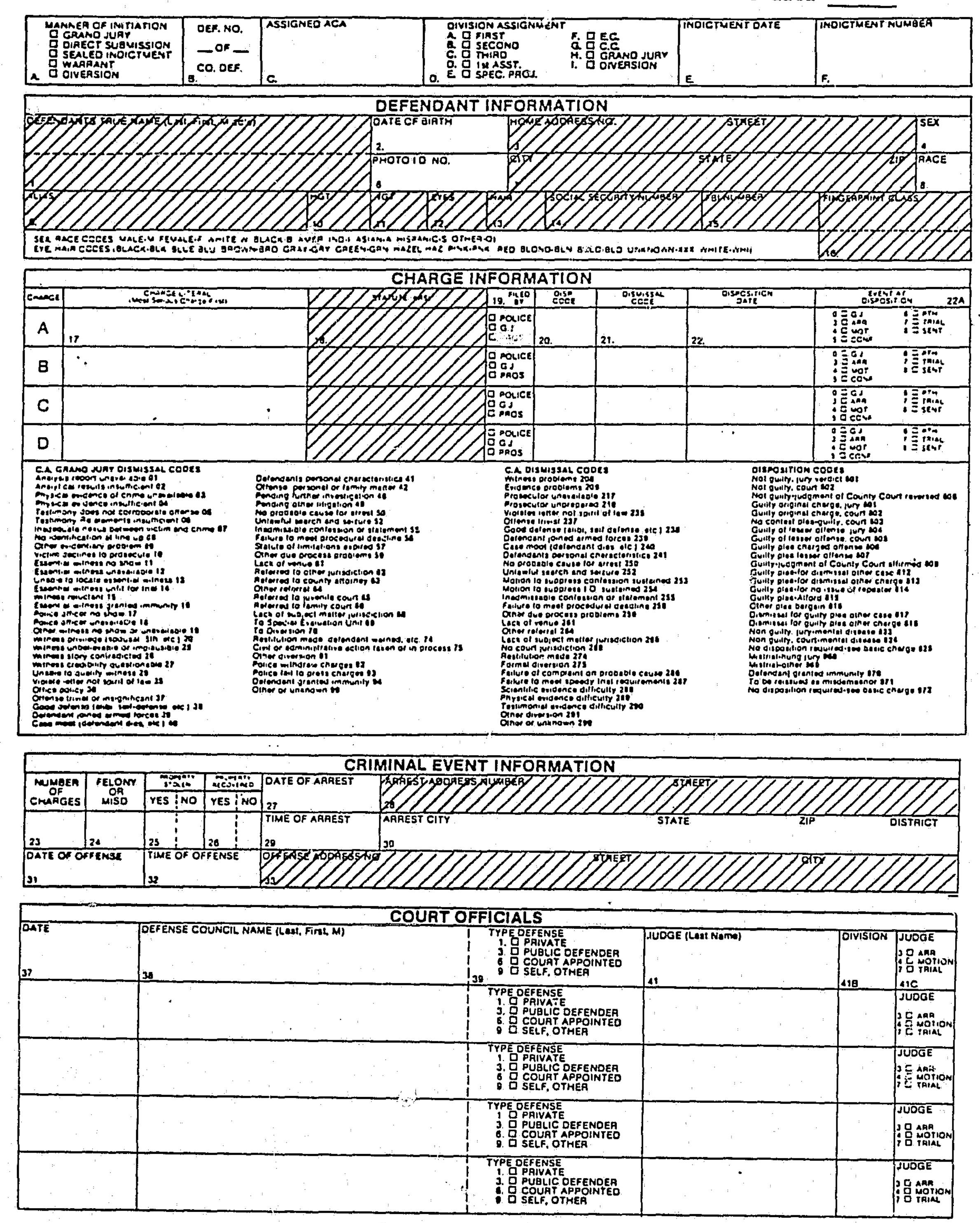
*Source of data is indicated for each major category of variables (e.g., circuit court indicates data was taken from the monthly statistical report prepared by that agency). Data for variables in sub-categories are taken from the same source unless otherwise indicated; where the source is indicated as being derived from other variables (e.g., CC5+CC6), the values of the indicated variables were added together to create data needed.

APPENDIX C

Sample of Data Recording Form
For Abstracting Data From Manual Case Files

End time ______
Start time ______
Time required to retrieve data ______

Individual Case Data


MANNER OF INITIATION: GRAND JURY; DIRECT SUBMISSION; SEALED INDICTMENT; WARRANT; DIVERSION (A.)
DEF. NO. __ OF __ CO. DEF. (B.)
ASSIGNED ACA (C.)
DIVISION ASSIGNMENT: A. FIRST; B. SECOND; C. THIRD; D. 1st ASST.; E. SPEC. PROJ.; F. E.C.; G. C.C.; H. GRAND JURY; I. DIVERSION (D.)
INDICTMENT DATE (E.)
INDICTMENT NUMBER (F.)

DEFENDANT INFORMATION
DEFENDANT'S TRUE NAME (Last, First, M.I.) 1; DATE OF BIRTH 2; HOME ADDRESS NO. 3; STREET; SEX 4; PHOTO I.D. NO. 6; CITY 7; STATE; ZIP; RACE 8; ALIAS 9; HGT 10; WGT 11; EYES 12; HAIR 13; SOCIAL SECURITY NUMBER 14; FBI NUMBER 15; FINGERPRINT CLASS 16
SEX, RACE CODES: MALE-M FEMALE-F WHITE-W BLACK-B AMER. IND.-I ASIAN-A HISPANIC-S OTHER-O
EYE, HAIR CODES: BLACK-BLK BLUE-BLU BROWN-BRO GRAY-GRY GREEN-GRN HAZEL-HAZ PINK-PNK RED BLOND-BLN BALD-BLD UNKNOWN-XXX WHITE-WHI

CHARGE INFORMATION
CHARGE; CHARGE LITERAL (Most Serious Charge First) 17; STATUTE 18; 19. FILED BY: POLICE, G.J., PROS; DISP CODE 20; DISMISSAL CODE 21; DISPOSITION DATE 22; EVENT AT DISPOSITION 22A: 0 G.J., 3 ARR, 4 MOT, 5 CONF, 6 PTH, 7 TRIAL, 8 SENT
A; B; C; D

C.A. GRAND JURY DISMISSAL CODES
Analysis report unavailable 01
Analytical results insufficient 02
Physical evidence of crime unavailable 03
Physical evidence insufficient 04
Defendants personal characteristics 41
Offense personal or family matter 42
Pending further investigation 46
Pending other litigation 48
No probable cause for arrest 50
Unlawful search and seizure 52
Inadmissible confession or statement 55
Failure to meet procedural deadline 56
Statute of limitations expired 57
Other due process problems 59
Other diversion 81
Police withdraw charges 82
Police fail to press charges 83
Defendant granted immunity 84
Other or unknown 99

C.A. DISMISSAL CODES
Witness problems 208
Evidence problems 209
Prosecutor unavailable 217
Prosecutor unprepared 218
Violates letter not spirit of law 235
Offense trivial 237
Good defense (alibi, self defense, etc.) 238
Defendant joined armed forces 239
Case moot (defendant dies, etc.) 240
Defendants personal characteristics 241
Restitution made 274
Formal diversion 275
Failure of complaint on probable cause 286
Failure to meet speedy trial requirements 287
Scientific evidence difficulty 288
Physical evidence difficulty 289
Testimonial evidence difficulty 290
Other diversion 291
Other or unknown 299

DISPOSITION CODES
Not guilty, jury verdict 801
Not guilty, court 802
Not guilty-judgment of County Court reversed 806
Guilty original charge, jury 801
Guilty original charge, court 802
No contest plea-guilty, court 803
Guilty of lesser offense, jury 804
Guilty of lesser offense, court 805
Guilty plea charged offense 806
Guilty plea lesser offense 807
Mistrial-hung jury 968
Mistrial-other 969
Defendant granted immunity 970
To be reissued as misdemeanor 971
No disposition required-see basic charge 972

CRIMINAL EVENT INFORMATION
NUMBER OF CHARGES 23; FELONY OR MISD 24; PROPERTY STOLEN YES / NO 25; PROPERTY RECOVERED YES / NO 26; DATE OF ARREST 27; ARREST ADDRESS NUMBER 28; STREET; TIME OF ARREST 29; ARREST CITY 30; STATE; ZIP; DISTRICT; DATE OF OFFENSE 31; TIME OF OFFENSE 32; OFFENSE ADDRESS NO. 33; STREET; CITY

COURT OFFICIALS
DATE 37; DEFENSE COUNCIL NAME (Last, First, M) 38; TYPE DEFENSE 39: 1. PRIVATE, 3. PUBLIC DEFENDER, 6. COURT APPOINTED, 9. SELF, OTHER; JUDGE (Last Name) 41; DIVISION 41B; JUDGE 41C: 3 ARR, 4 MOTION, 7 TRIAL

COURT ACTIONS

DATE / ENTERED BY	PLEA	JURY	CURRENT ACTION	NEXT ACTION DATE / TIME	NEXT COURT ACTION	RELEASE STATUS	AMOUNT OF BOND OR SURITY
47 / 47A	☐ N G ☐ G	☐ JURY ☐ NON-JURY	0. ☐ GRAND JURY 5. ☐ CONFERENCE 1. ☐ INIT. APP 6. ☐ PRE-TRIAL 2. ☐ PREL HEAR 7. ☐ TRIAL 3. ☐ ARRAIGNMENT 8. ☐ SENTENCE 4. ☐ MOTIONS 9. ☐ POST. CONV.	51A	52	C.B. ☐ CASH BOND C.J. ☐ COUNTY JAIL P.R. ☐ PER. RECOG. X.P. ☐ 10% CASH OTHER: 55	55A
DATE / ENTERED BY	☐ N G ☐ G	☐ JURY ☐ NON-JURY	0. ☐ GRAND JURY 5. ☐ CONFERENCE 1. ☐ INIT. APP 6. ☐ PRE-TRIAL 2. ☐ PREL HEAR 7. ☐ TRIAL 3. ☐ ARRAIGNMENT 8. ☐ SENTENCE 4. ☐ MOTIONS 9. ☐ POST. CONV.	TIME		C.B. ☐ CASH BOND C.J. ☐ COUNTY JAIL P.R. ☐ PER. RECOG. X.P. ☐ 10% CASH OTHER	AMOUNT OF BOND OR SURITY
DATE / ENTERED BY	☐ N G ☐ G	☐ JURY ☐ NON-JURY	0. ☐ GRAND JURY 5. ☐ CONFERENCE 1. ☐ INIT. APP 6. ☐ PRE-TRIAL 2. ☐ PREL HEAR 7. ☐ TRIAL 3. ☐ ARRAIGNMENT 8. ☐ SENTENCE 4. ☐ MOTIONS 9. ☐ POST. CONV.	TIME		C.B. ☐ CASH BOND C.J. ☐ COUNTY JAIL P.R. ☐ PER. RECOG. X.P. ☐ 10% CASH OTHER	AMOUNT OF BOND OR SURITY
DATE / ENTERED BY	☐ N G ☐ G	☐ JURY ☐ NON-JURY	0 ☐ GRAND JURY 5. ☐ CONFERENCE 1 ☐ INIT APP 6. ☐ PRE-TRIAL 2 ☐ PREL HEAR 7. ☐ TRIAL 3 ☐ ARRAIGNMENT 8. ☐ SENTENCE 4 ☐ MOTIONS 9. ☐ POST CONV	TIME		C B ☐ CASH BOND C J ☐ COUNTY JAIL P R ☐ PER RECOG. X P. ☐ 10% CASH OTHER:	AMOUNT OF BOND OR SURITY
DATE / ENTERED BY	☐ N G ☐ G	☐ JURY ☐ NON-JURY	0 ☐ GRAND JURY 5. ☐ CONFERENCE 1 ☐ INIT APP 6. ☐ PRE-TRIAL 2 ☐ PREL HEAR 7. ☐ TRIAL 3 ☐ ARRAIGNMENT 8. ☐ SENTENCE 4 ☐ MOTIONS 9. ☐ POST CONV.	TIME		C B ☐ CASH BOND C J ☐ COUNTY JAIL P R ☐ PER RECOG. X P. ☐ 10% CASH OTHER	AMOUNT OF BOND OR SURITY
DATE / ENTERED BY	☐ N G ☐ G	☐ JURY ☐ NON-JURY	0. ☐ GRAND JURY 5. ☐ CONFERENCE 1. ☐ INIT. APP 6. ☐ PRE-TRIAL 2 ☐ PREL HEAR 7. ☐ TRIAL 3 ☐ ARRAIGNMENT 8. ☐ SENTENCE 4 ☐ MOTIONS 9. ☐ POST. CONV.	TIME		C B ☐ CASH BOND C J ☐ COUNTY JAIL P R ☐ PER. RECOG. X P. ☐ 10% CASH OTHER	AMOUNT OF BOND OR SURITY
DATE / ENTERED BY	☐ N G ☐ G	☐ JURY ☐ NON-JURY	0 ☐ GRAND JURY 5. ☐ CONFERENCE 1 ☐ INIT APP 6. ☐ PRE-TRIAL 2 ☐ PREL HEAR 7. ☐ TRIAL 3 ☐ ARRAIGNMENT 8. ☐ SENTENCE 4 ☐ MOTIONS 9. ☐ POST CONV.	TIME		C B ☐ CASH BOND C J ☐ COUNTY JAIL P R ☐ PER RECOG. X P. ☐ 10% CASH OTHER	AMOUNT OF BOND OR SURITY
DATE / ENTERED BY	☐ N G ☐ G	☐ JURY ☐ NON-JURY	0 ☐ GRAND JURY 5. ☐ CONFERENCE 1 ☐ INIT APP 6. ☐ PRE-TRIAL 2 ☐ PREL HEAR 7. ☐ TRIAL 3 ☐ ARRAIGNMENT 8. ☐ SENTENCE 4 ☐ MOTIONS 9. ☐ POST CONV.	TIME		C B ☐ CASH BOND C J ☐ COUNTY JAIL P R ☐ PER RECOG. X P ☐ 10% CASH OTHER	AMOUNT OF BOND OR SURITY
DATE / ENTERED BY	☐ N G ☐ G	☐ JURY ☐ NON-JURY	0 ☐ GRAND JURY 5. ☐ CONFERENCE 1 ☐ INIT APP 6. ☐ PRE-TRIAL 2 ☐ PREL HEAR 7. ☐ TRIAL 3 ☐ ARRAIGNMENT 8. ☐ SENTENCE 4 ☐ MOTIONS 9. ☐ POST CONV.	TIME		C B ☐ CASH BOND C J ☐ COUNTY JAIL P R ☐ PER RECOG. X P ☐ 10% CASH OTHER	AMOUNT OF BOND OR SURITY

NEXT COURT ACTION CODES

MAJOR EVENTS
001 FURTHER PROCEEDINGS
002 PRELIMINARY HEARINGS
003 ARRAIGNMENT
006 CONFERENCE
008 JURY TRIAL
004 TRIAL
016 DISPOSITION
018 SENTENCING

SECONDARY EVENTS
010 ARGUMENT AND DECISION
014 PRE-SENTENCE INVESTIGATION

MOTIONS
004 MOTION
011 MOTION BOND REDUCTION
020 MOTION TO SUPPRESS
013 POST CONVICTION MOTION

REPORTS
009 OR REPORT
007 MENTAL PROCEEDING
015 WELFARE REPORT
012 PROBATION REVIEW

OTHERS
017 SET DATE
021 REFUSAL
022 DECISION
023 STAYS

OTHER RELEASE STATUS
W.B WITHOUT BAIL
S.B SURITY
C.S CENTRAL STATE
J.A JAIL - OTHER COUNTY
ED EDDYVILLE
LA LAGRANGE
FP FEDERAL PRISONER
PE PEWEE VALLEY
BO BOONE COUNTY
OU OUR LADY OF PEACE

SENTENCE

	CONFINEMENT A PERIOD	CONFINEMENT B TYPE	CONFINEMENT C SUSPENDED PERIOD	FINE A AMOUNT	FINE C SUSPENDED PERIOD	SPECIAL PROGRAM A PERIOD	SPECIAL PROGRAM B TYPE	SPECIAL PROGRAM B AMOUNT SUSPENDED	PROBATION A PERIOD	PROBATION B TYPE
A	56	57	58	59	60	61	62	63	64	1 ☐ SUPERVISED 2 ☐ NON-SUPERVISED 65
B										1 ☐ SUPERVISED 2 ☐ NON-SUPERVISED
C										1 ☐ SUPERVISED 2 ☐ NON-SUPERVISED
D										1 ☐ SUPERVISED 2 ☐ NON-SUPERVISED

DATE OF SENTENCE	JUDGE NAME (Last)	DIVISION	PROSECUTOR (Name)	CODE
66	67	68	69	70

CONFINEMENT TYPE: 1. CONCURRENT 2. CONSECUTIVE 3. LIFE 4. CONFINEMENT OR FINE 9. OTHER

APPELATE ACTION TAKEN

DATE FILED	TYPE OF APPEAL	DETERMINATION	DATE	MANDATE APPEAL
71	72	73	74	75

END