THE CRIMINAL RESEARCH INFORMATION MANAGEMENT EVALUATION SYSTEM (CRIMES): A COMPREHENSIVE RECORDS MANAGEMENT SYSTEM FOR SMALLER POLICE¹

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February, 2017

This report describes the activities under award 2014-MU-CX-K003, the National Law Enforcement and Corrections Technology Center (NLECTC) System: Small, Rural, Tribal, and Border (SRTB) Regional Center. In year 1, the center was renamed the Justice Innovation Center for SRTB Criminal Justice Agencies. The opinions, findings, and conclusions or recommendations expressed in this publication are those of the authors and do not necessarily reflect those of the Department of Justice.

¹ Sincere thanks to Dr. Larry Hoover, Director of the Sam Houston State University Police Research Center and the CRIMES staff for contributing graphical and other information used in the development of this report.

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BACKGROUND AND ORIGINS

Small Rural Border and Tribal Law enforcement agencies are frequently faced with prohibitive cost when acquiring, implementing and operating records management systems (RMS). These costs include those for software/system acquisition, software maintenance, and IT personnel for systems operation. An alternative to the typical RMS where an agency acquires a system and staffs and operates it independently is an RMS system shared by multiple agencies. One innovative model developed to offset the cost and meet the needs of smaller agencies is the Criminal Research Information Management Evaluation System (CRIMES) developed and operated by the Police Research Center at Sam Houston State University. This RMS system, which dates back to 1995, now serves 54 different local law enforcement agencies in the State of Texas. This comprehensive system is fee-based with annual fees ranging from \$15,000-to \$75,000+ depending on the size of the population the agency serves.

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Jurisdiction Size	Annual	
To 9,999	\$15,000	
10 000 to 14 000	\$20,000	

10,000 to 14,999 \$20,000 15,000 to 19,999 \$33,000 20,000 to 49,999 \$49,000 50,000 to 74,999 \$59,000 75,000+ Negotiated

2016 Annual CRIMES License Fees

County Populations = 35% of incorporated plus

CRIMES was developed in response to a request for such a system from Texas police chiefs who were dissatisfied with the systems and technology that was available to them. Asking a regional university to develop a system that would meet their needs might seem unusual; however Sam Houston State University was heavily involved in collaborations with criminal justice agencies dating back to 1965 when its College of Criminal Justice was formed in response to criminal justice agencies requests for education, training, and technical assistance. The development of CRIMES started in 1995 and by 2001, CRIMES had 11 subscribing agencies. However, at about that time, CRIMES staff halted the expansion of subscribers in order to address several bugs in the system. CRIMES has experienced steady subscriber expansion since that time. Unlike most common Records Management Systems, which are developed and marketed by for-profit organizations, CRIMES was and still is operated as a non-profit entity being part of a university in a public state university system. It was designed with ease of use in mind for agencies with limited IT capacity.

Over the 21 years of its continuous development and operation, CRIMES has evolved to the point where it could become a private for-profit enterprise, but CRIMES staff provide a strong rational for retaining it as a university-based non-profit enterprise. First, since CRIMES does not have to be "profitable," it can use subscriber agencies as a "test bed" for developing and refining new technologies, without incurring a lot of additional costs in doing so. Second. CRIMES provides university police researchers with an opportunity to "develop models of improved police strategy premised upon emergent technology." Third, and possibly one of the strongest rationales for retaining CRIMES within the university is that it provides faculty and students with unusual opportunity for professional development. Criminal justice students are provided with access to police data for use in theses, dissertations, and various capstone projects.

Additionally, computer science students are provided with the opportunity to work on the continuous development of the CRIMES system. Fourth, CRIMES provides a platform for the training of law enforcement in the application and use of such technology in analysis and decision-making. Fifth, CRIMES supports a regional network for police records and information sharing.

Although, the CRMES operation, as a university-based enterprise that supports over 50 police agencies might seem and it unusual, CRIMES staff point out that there are parallels in other fields where universities provide technical assistance and services and reap the benefits of research and teaching opportunities such as in the area of medicine and public health. With regard to research, CRIMES serves as a single point where data from over 50 agencies using a common system comes together and can be accessed by researchers, whereas combining data for research purpose from over 50 agencies with several different systems would be very difficult to coordinate and manage.

The CRIME mission statement is:

CRIMES was launched as a direct technical assistance endeavor to Texas law enforcement consistent with the Criminal Justice Center's Mandate, and legislative funding history. Additionally the rational for the endeavor includes:

Serving as a Law Enforcement Technology Demonstration Endeavor

Serving as a demonstration environment for integrating Emergent Technology with Police Strategy

Providing a Contribution to Law Enforcement Training

Engendering a Statewide/Regional Crime and Operations Analysis Effort

CRIMES is expected to continue as the core of Sam Houston State University's efforts to bring state-of-the-art technology to Texas law enforcement.

CRIMES: CONFIGURATION, CORE MODULES, COMPONENTS, AND REPORTS

The configuration of the CRIMES RMS includes core modules, support components, analytics components, and management tools. A total of 20 application modules are available in CRIMES. It should be noted that while CRIMES was originally, and for most of its operational history, dedicated to serving local police agencies, it is now addressing the records management needs of Texas probation agencies as well as the Texas Department of Criminal Justice (corrections). CRIMES uses the Microsoft Windows operating systems along with several Microsoft Office components and was designed with ease of access and operation by local personnel in smaller agencies in mind. The entry or splash screen for the system appears below.



Core Modules. The CRIMES RMS includes three "core" modules. These modules meet basic law enforcement information and communication needs including computer-assisted dispatch (CAD), master name-person identification, and incident reporting. In addition, CRIMES equips the agency with a mobile or remote (patrol) capacity to access core and application modules.

CRIMES' Core Modules

- Computer-Assisted Dispatch (CAD) Module –
 Comprehensive management of communications function for Police, Fire, & EMS.
- Master Name File Module Single file of all persons, vehicles & organizations in database.
- Incident Reporting Module Computerized data entry for incident report.

Computer-Assisted Dispatch (CAD), Incident Management, and Master Name File. The CAD manages police, fire, and EMS communications and has interconnectivity with 911, patrol mobile data terminals, the National Crime Information Center (NCIC) and the Texas Law Enforcement Telecommunications System (TLETS). The CAD dispatches police, fire, and EMS in response to calls for service. In addition to these basic functions, the CRIMES CAD has a large number of "Advanced CAD Components" that are listed in Appendix A.

Incident Management is another core component of the CRIMES CAD. This component creates a record of and stores extensive descriptive information about an offense incident. This component also tracks the flow of paperwork associated with an incident, generates incident reports, and retains incident data in a format usable for UCR and NIBRS reporting.

The *Master Name File* is a database that contains extensive information about persons identified in any of the other CRIMES components based on the individual's name. This includes items such as names, aliases, addresses, phone numbers, physical characteristics, fingerprint linkages, and can include information on employment, education, and involvement in various reported incidents.

Mobile Component. The CRIMES "Mobile Component" enables information and reporting access for officers on patrol. It provides display and queuing of calls for service and enables accessing data bases contained in core modules as well as messaging from one patrol unit to another. This component also provides officers with remote access to the Texas Law Enforcement Telecommunications System.

Mobile Component

Includes:

Field Reporting (Mobile entry of Incident Reports)

Beat Information (Search routine for retrieval of recent beat activity)

Field Search (CAD, Master Name File, & Incident Modules)

TLETS (Connectivity)

CAD Call Screen Display (Individual call information, user-defined display of pending calls)

Unit to Unit Messaging (Broadcast capable)

Application Modules: CRIMES includes several separate "Application Modules. These applications cover a variety of essential functions including those that enable database searches and generate mandated reports such as the UCR and NIBRS. Applications include booking/jail management, property room management, traffic citation and accident reports, field interview notes, and trespassing. Included are several analytical tools including those for crime analysis, police activity analysis, response time analysis, accident analysis, racial profiling reporting, and COMPSTAT. Management tools include applications for booking, jail management and property room management. In addition, CRIMES provides a GIS/GPS interface that enables mapping (with a separate ESRI license) and vehicle and address location. CRIMES agencies can also take advantage of its internet reporting capacity. Citizens with internet access can report minor incidents via the agency's web page. Another important feature of CRIMES is that it provides agencies with automated racial profiling reports using field interview or citation data, which brings Texas agencies into compliance with the state statute that requires such reporting.

CRIMES' Application Modules

Local Warrants UCR Reports Booking/Jail Management **NIBRS Reports Property Room Mgt** Racial Profiling **Traffic Citations** Alarm Permits and Billing Traffic Accident **Management Reports** Police & Fire Mobile **Productivity Reports Field Reporting Crime Analysis** GIS/GPS Interface Security System Citizen Self-Reporting Expunge **Investigations Case Management** Regional Server & NDEx Auto Upload

The screenshot below provides an example of a management report generated by a CRIMES application module. It is a "police activity dashboard" for the Gainesville, TX police department, the dashboard summarizes and compares activity across shifts and districts and also provides an estimate of the probability of crime occurrence.

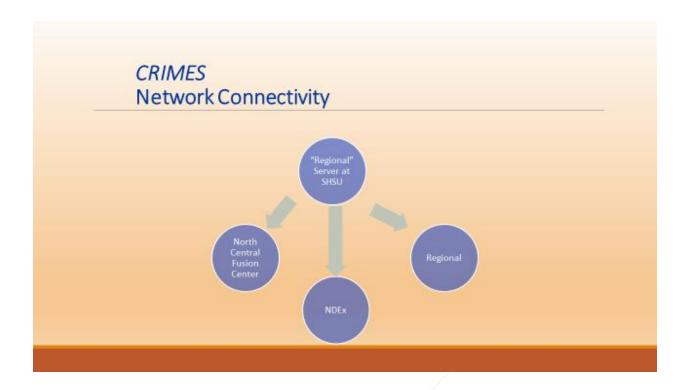


Fire Computer-Assisted Dispatch and Mobile Capacity: CRIMES also supports fire agencies by providing them with computer-assisted dispatch and mobile communication capacity. In addition, it is integrated with a fire-services specialty software application and it can generate a variety of fire services operational supports.



Regional Databases and Remote Server Backup:

Built into the CRIMES system is automated backup of agency data. Once every 24 hours (at 3:00 a.m.) local police agency data is pulled via a VPN network to servers located at Sam Houston State University. This provides agencies with data backup and capacity for data recovery should data residing at the local level be lost due to local system failure. The SHSU server is also used to automatically push agency data to crime/law enforcement data sharing sites including the Texas Data Exchange (TDEx), which is operated by the Texas Department of Public Safety. That system manages the VINE system, which is a victim notification system, which is connected to the National Data Exchange (NDEX) system. Data uploaded to TDEx is available through CRIMES to participating agencies. For example, one agency can check for information that might connect multiple incidents across multiple jurisdictions. In addition, to the TDEx regional capacity, CRIMES agencies can elect to have their data shared with /uploaded to the North Central Texas Fusion Center.



CRIMES: AGENCY REQUIREMENTS, CRIMES STAFFING, FUTURE DIRECTIONS FOR POLICE AGENCIES

Minimum Agency Requirements: CRIMES staff summarizes the agency IT-related requirements for CRIMES participation as follows:

- The **software** required to run the **CRIMES** platform is Microsoft Windows®, Microsoft Server®, PHP, IIS, and Microsoft SQL Server®.
- CAD Server: Contains the SQL database that users access for all Computer Aided Dispatch functions.
- **Application/RMS Server**: Contains the SQL database that users access for the Records Management System. This includes data for the following modules:
 - Incident
 - Jail Management
 - Property Room
 - Citation
 - Crash Report
 - Field Interview
 - Trespass
- **Mobile Server**: Runs the software required for interfacing with the mobile units. The following packages are typically installed by **CRIMES** technical staff:
 - IIS Internet Information Services

- PHP (latest stable version)
- o E911 Interface
- Texas Law Enforcement Telecommunications System Interface
- AVL Geolocation
- FireHouse® Interface
- NetMotion® Server is required for CRIMES Mobile, providing both persistence and CJIS compliant encryption.
- Wireless provider. CRIMES Mobile will operate on any major wireless service provider.
- Property Room Barcode Reader/Scanner
- Driver's License Magnetic Card Reader:
 - o To be used with Citation, *CRIMES* Mobile, and Jail Modules
- Citation Printer for Printing Tickets in Cars

For smaller agencies or low utilization, the Application/RMS and CAD servers/databases can be combined on one server to reduce cost. Of course, in addition to possessing the software and hardware technology, local agencies need personnel with appropriate skill sets to support the agency's IT operations.

Staffing: Eight programmers are assigned to *CRIMES* Law Enforcement and three assigned to *CRIMES* Community-Supervision. Although there is a range of expertise represented among the staff, the common profile is a bachelor's degree in computer science and 5 years of previous programming experience. Additionally, there is a full time assistant responsible for administrative tasks. The Director of the Police Research Center focuses efforts on development and external relationships. A faculty member in SHSU's Computer Science Department handles all GIS components, and periodically, CRIMES utilizes computer science graduate students as research assistants.

Hosted Program: In September 2017 CRIMES plans to launch a hosted version of *CRIMES* for agencies less than 10,000 populations. Participating agencies will maintain perpetual internet connectivity to the central server at Sam Houston State University. All data entry, editing, and report generation will reside on the central server at Sam Houston State University. Additionally, required modifications to the software will have to be completed only once - at the central server. The current annual fee is a minimum of \$15,000. It is anticipated the annual fee for the hosted system will be priced less than \$5,000.

Summary: Over its 21 year history, the CRIMES system has evolved into a sophisticated police Records Management System that meets the comprehensive needs of small to medium sized police agencies. Participating in CRIMES is relatively low cost in terms of licensing, but the IT hardware and staff requirements add sustainable cost to the use of CRIMES. Nevertheless, total costs are probably substantially less than those involved in using mainstream proprietary RMS software. However, at the present time there does not appear to be data available that would make it possible to compare cost of CRIMES with for-profit RMS systems used by other same-sized Texas law enforcement agencies. The cost of IT hardware and software for CRIMES

participation exceeds what many small agencies can afford. However, the launching of the hosted version of CRIMES in 2017 will provide affordable access to small agencies. In addition to their license fee of less than \$5,000, their additional cost will be for computers/workstations and mobile terminals. Since data entry, editing and report generation are carried out at the CRIMES central server, subscribing agencies will not need to acquire or maintain a server for the system.

CRIMES: COMMUNITY SUPERVISION INITIATIVE

Background: Although CRIMES was developed in response to the needs of local law enforcement agencies and has served them over the past 21 years, in 2016, in response to the needs of Texas community corrections agencies, CRIMES launched a Community Supervision Initiative. This initiative is focused on serving Texas judicial districts, some that include high population counties and others that include less populated counties. For example, Tarrant County (Fort Worth) is a highly populated County of 1,809,043, whereas counties such as Golidad and Refugio are much less populated (7,400 and 7,300 respectively). Tarrant and Victoria Counties had collaborated on a five-year endeavor to develop a probation RMS/case management system. Maintenance and updating cost proved to be problematic and costly and probation leaders in those jurisdictions were aware of the success of CRIMES in serving police agencies. These counties turned over the existing software that had been developed in-house to CRIMES at Sam Houston State University. Crimes added staff and reworked the software to make it more flexible and useable to a wider range of agencies. The expectation is that CRIMES will have full blown probationer supervision software operational the first quarter of 2017. At the core of the CRIMES Community Supervision software is the Probationer Case File which is described as a comprehensive record of probation conditions and contacts with probationers. The intial usuers of CRIMES Community Supervision software are Tarrant and Victoria counties which are the counties developing the original version of the software was developed inhouse. Nine additional counties are onboard to start using the software in the near future. As with CRIMES for law enforcement, one of the goals is to provide agencies with an affordable system. Locating the system and modeling it after the existing CRIMES operation makes meeting that goal achievable. Participating agencies will be charged \$30 per CRIMES workstation per month. A large agency such as Tarrant County will pay approximately \$100,000 per year including support and upgrades provided by CRIMES staff. A small agency, with a small number of work stations, for example six, would pay just over \$2,000 annually.

As with CRIMES for law enforcement, CRIMES-Community Supervision has mutual benefits for both probation agencies and the university. The software provides agencies with a comprehensive client-based information system. At the same time, CRIMES-Community Supervision software provides university researchers and students with a comprehsive database the can be used to assess community supervision outcomes. A principal goal of the software and its use is to put in to play principles of effective correctional intervention and evidence-based practices identified by William Kelly (2015)

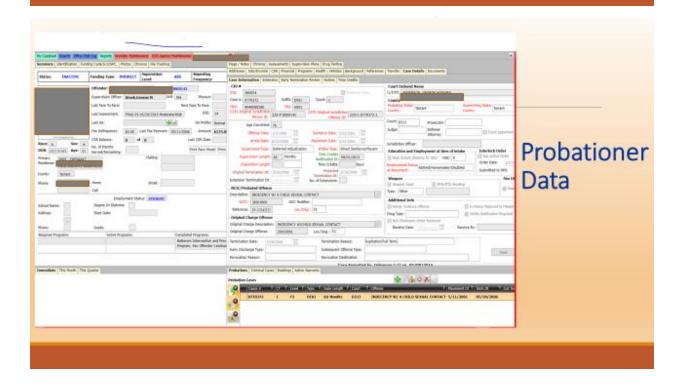
The Principles of Effective Correctional Intervention and Evidence-Based Practices

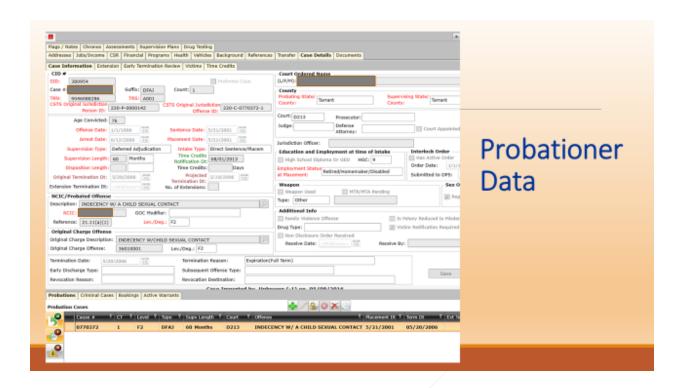
- Conduct thorough, accurate, actuarial-based assessments of risk and dynamic, criminogenic needs.
- 2. Assess treatment readiness and enhance treatment motivation.
- 3. Target interventions:
 - a. On dynamic (changeable) criminogenic needs (need principle)
 - b. On multiple criminogenic needs
 - c. On medium- and high-risk offenders (risk principle)
 - To the personality, learning style, and intellectual capabilities of the participants (responsivity principle)
 - With social learning and cognitive-behavioral modalities, the primary evidence-based approaches to effective behavioral change.
 - f. With the appropriate dosage for the appropriate participants.

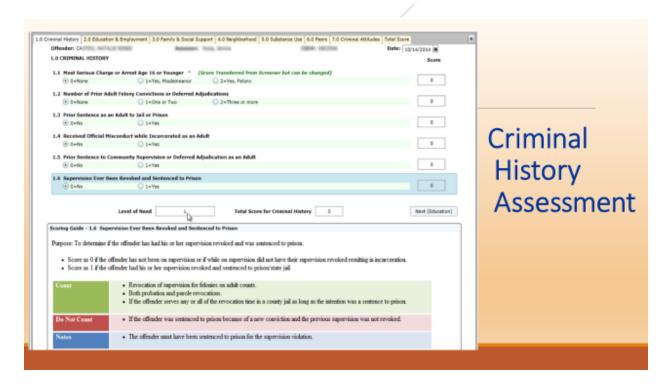
Kelly, W. R., 2015.

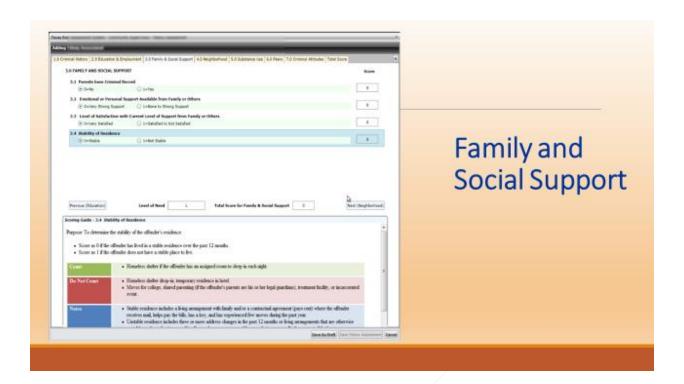
A study conducted by researchers at the Police Research Center found substantial variation in the types of and quality of referrals of probationer clients to intervention services. One of the goals in developing the Crime-Communty Supervison system was to provide a tool that help agencies implement the principles outlined above. Several sample screens from the CRIMES=Community Supervision Software system appear below. The comprehensive probationer data collected by the system enables community supervision agencies to make the assessment and determine and plan the treatment/intervention needs of probationers. An important objective is to improve the consistency and quality of probationer referrals to interventions/services.

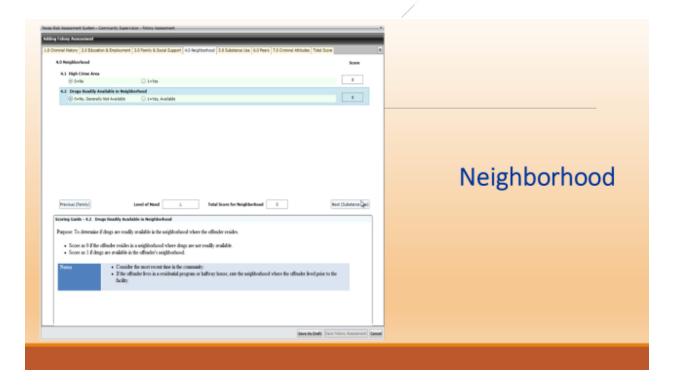
Sample Screens from CRIMES-Community Supervision Software

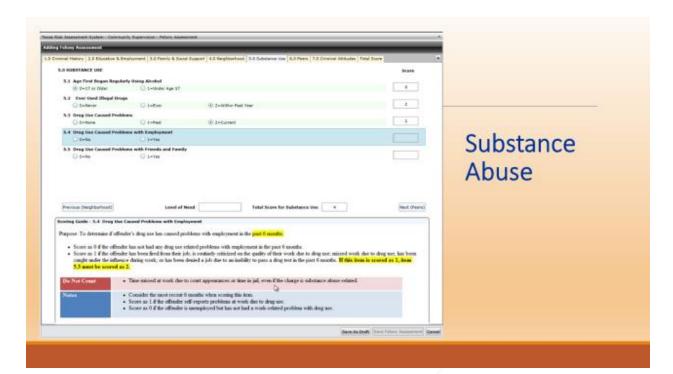


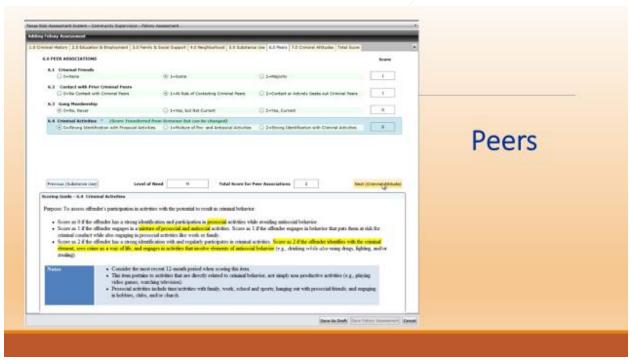


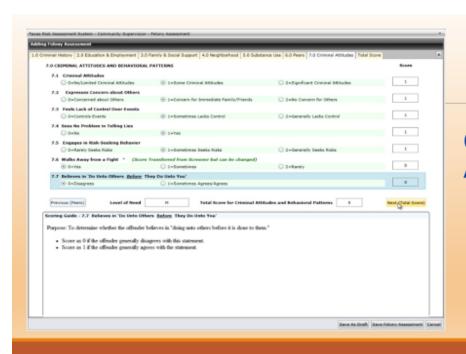




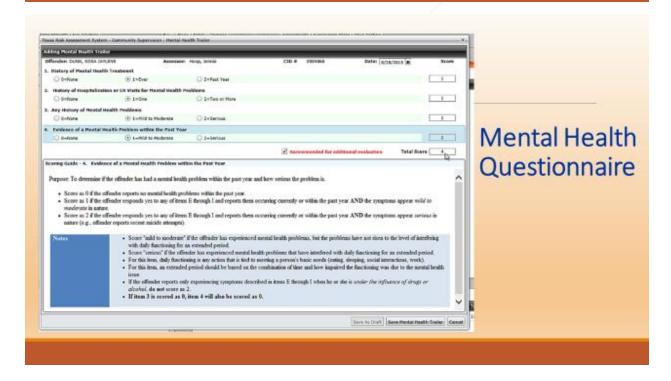


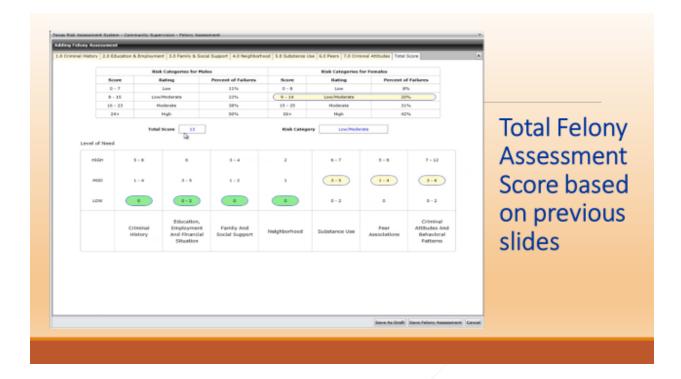






Criminal Attitude





CRIMES staff has articulated in broad terms, a logic model and implied evaluation design for assessing both outcomes and impact resulting from the use of the system. They see the system producing the major outcome of consistent, timely, and appropriate referrals to treatment which in turn will have a positive impact on probationer recidivism rates. CRIMES system data should enable evaluation researchers to make comparisons of jurisdictions with the CRIMES-Community Supervision software with jurisdictions that are without CRIMES or comparable software. Overtime, CRMES probationer data should make it possible evaluate the impact of different interventions (treatment programs) on probationer recidivism.

CRIMES: SAFE PRISONS INITIATIVE

Another initiative that CRIMES has under way is its Safe Prisons Initiative. This initiative is being developed to support the Texas Department of Criminal Justice's efforts to comply with the Prison Rape Elimination Act (PREA) of 1993 and the Texas Legislature's mandated Safe Prisons Program. At the present time, data required by the Safe Prison Program is collected, managed, and reported manually. CRIMES is developing a web-based system that will enable tracking the process for investigating allegations of sexual abuse and violent victimization within Texas prisons. In addition to compliance reporting, the Safe Prisons Database will be used to pinpoint opportunities for improving the detection of prisoner abuse and for informing the development of prevention/elimination strategies.

The TDJC Office of Inspector General serves the agency in a police-like manner and is responsible for investigating criminal incidents occurring within TDCJ institutions. The Office of Inspector General has used CRIMES much like a local police department for several years. The new CRIMES Safe-Prison system will be an extension of the existing CRIMES for law enforcement system. Three modules will be

developed that will retain all relevant incident-related forms and documents, track the incident investigative process, and inventory all relevant evidence.

CONCLUSION AND ADDITIONAL STUDY POTENTIAL²

The CRIMES system is a unique innovation resulting from some unusually strong historical relationships between a university and the Texas law enforcement community. Essentially it began and continues to this day, to be a university service to the police community, a service that benefits that community as well as the university. It is important to note that CRIMES is a nonprofit enterprise, and because of this, it provides Records Management System and Related Services that are characterized as being low cost. The formula for CRIMES development and success might be so unique that it would be difficult to duplicate in other states/settings. To do so would require an unusual commitment from a university or other non-profit entity as well as an exceptionally strong partnership with the law enforcement community. The expansion of "traditional "CRIMES, that is where RMS servers are located in local police departments, to police departments outside the State of Texas might accelerate costs to the point where staffing and operating costs passed on to agency users could result in CRIMES not providing the same financial advantage that current subscribers enjoy. However, the hosted version of CRIMES to be rolled out in 2017 has substantial potential for serving small departments no matter where they are located, and doing so at a very low cost.

Although CRIMES Community-Supervision is in its infancy, it appears to have good potential as a state of the art records management system for probation agencies. This possibility is premised on the idea that the integrated computerized CRIMES RMS that manages probation processes will, in contrast to existing systems in place in smaller jurisdictions, improve efficiency and effectiveness as indicated by more timely and consistent delivery of services to probation clients.

There are several information gaps surrounding the use of and effectiveness of Records Management Systems by SRBT law enforcement agencies. First, there does not appear to be systematic data on the current state of RMS configuration and use by SRTB law enforcement agencies. Although CRIMES is referred to as a "low cost" system, there does not appear to be

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² More information on CRIMES can be obtained by contacting:

any systematic data that enables comparing CRIMES costs with those for other systems used by SRTB law enforcement agencies in Texas and elsewhere. In addition, there does not appear to be systematic data on the systems used, the RMS functions available and actually used by SRTB agencies. A survey of SRTB law enforcement agencies capturing information on RMS used, system functionality, system acquisition and maintenance cost, and satisfaction with system use and performance would be useful in depicting the "state of the art" among SRTB law enforcement agencies. In addition, such survey data would provide a baseline for making various comparisons of systems and for determining preferences for and usage of various RMS components/modules.

In terms of the outcomes and impacts of CRIMES on agency behavior and operations, the yet to be launched low cost web-hosted system will provide an interesting opportunity to track changes in agency operational practices resulting from the adoption of the system. A quasi-experimental design could be used to evaluate such potential changes. This would require establishing a pre-adoption baseline of relevant agencies processes and then making a variety of comparison of adopters and a sample of non-adopters, preferably in the same state or substate jurisdiction.

The launching of CRIMES Community-Supervision presents an interesting opportunity to study the impact of the adoption of technology on probation efficiencies and outcomes. As noted previously, the overall goal of the system is to provide technology that will increase community-based corrections effectiveness. This includes enabling probation agencies to make the assessment and determine and plan the treatment/intervention needs of probationers. An important objective is to improve the consistency and quality of probationer referrals to interventions/services. The ultimate goal is a reduction in probationer recidivism. Since CRIMES Community-Supervision is just now being launched with more jurisdictions adopting it in the near future, there is an opportunity to evaluate the use and outcomes of the system by comparing adopters with agencies in comprable jurisdictions.