

**AUTOMATING THE CROSS-LINKS BETWEEN CRIMINAL JUSTICE DATA
AND MENTAL HEALTH DATA**
Mental Health and Mental Retardation Authority of Harris County
INTERFACE DESIGN

An integrated and coordinated information flow system is needed to improve the ability to track individuals with mental illness through the Harris County Criminal Justice System from arrest, to court appearances, to housing location, to time of release, to treatment following release.

This information integration would facilitate

- Identification of mental health consumers upon arrival in the jail or court system;
- Provision of treatment while incarcerated;
- Ability to plan for continuity of care upon release from jail;
- Provision of treatment and continuity of care following incarceration; and
- Ability to measure outcome of interventions.

To date, the primary gap is seen to be the collection of information at each point in the diversion, booking, treatment, and Court process which makes the coordination or care of persons with mental illness in the criminal justice system (CJ-MH persons) an inefficient and repetitive process. Thus, this project's vision is to coordinate all of the service activities devoted to criminal justice diversion by facilitating information flow among stakeholders

Technologically-assisted information retrieval and transfer will also eliminate the need for numerous manually created and maintained lists, spreadsheets, and databases. This will eliminate duplicative data entry and redundancies, reduce the chance of human error and allow real-time, electronic exchange of information in accordance with the goals as established by the Jail Diversion Task Force (JDTF)¹.

¹ A Jail Diversion Task Force was established in 2003 to understand the mental health and criminal justice initiatives currently operating in Harris County. Members represent MH providers, advocates, and consumers, Probation and Parole, Criminal and Misdemeanor Court Administration, the Houston Police and Harris County Sheriff's Departments, Advocacy, Inc., Harris County DA's Office and Judges. The next meeting of this Task Force is scheduled for January 19, 2006. This proposed project has received letters of support from several members of the Task Force. The project is an agenda item for the January 19th meeting and support and additional information requirements will be discussed at that time. Current task force initiatives and status are as follows:

- Form a Jail Diversion Task Force Subcommittee to address communication between the Crisis Intervention Team, EMS, the NPC, the Ben Taub Emergency Room (BTGH-ER) and other local emergency rooms. Status: Currently being addressed is the potential merger of BTGH-ER and the NPC to improve efficiency and care;
- Expand the number of CIT officers and expansion of training for call takers and dispatch officers. Status: Texas legislative mandates now require, as of January 2005, all new law enforcement officers to have a 24 hour block of mental health training. Effective September 1, 2005 through 2009, every veteran officer must have a one-time block of 16 hours of mental health training.
- Expand Pre-Trial Services staff to assist in expedited communication processes. Status: Harris County Commissioner's Court has provided additional staffing for Pre-Trial Services
- Expand MHMRA staff within the jail to speed the process of receiving assessments and treatment. Status: Harris County Commissioner's Court has provided money for additional positions to provide psychiatric evaluation at the point of "booking". Additionally, Tele-Medicine initiatives are being investigated to expand this coverage to 24-hour/ 7-day per week coverage.
- Expand the Court Resource Program to all misdemeanor courts. Status: TCCOMMI has provided funds for this expansion through the New Start Program to all criminal and misdemeanor Courts;
- Establish a coordinated process between MHMRA and jail staff for notification of impending release from the Harris County Jail. Status: Status: It is being made part of this proposal.

Named the Criminal Justice Electronic Information Retrieval and Sharing tool (CJEIRS), this process will ensure coordinated information flow between mental health service providers, the Harris County Sheriff's office, Judges, Prosecutors, Defense Attorneys and other stakeholders.

Currently, Law Enforcement, the DA's Office, Pre-Trial Services, the Sheriff's Office, and the Courts collect information regarding the inmates' employment, social, financial, criminal history, current charges, jail housing information, court dates, and release dates. This data is stored in an electronic data system called the Criminal Justice Information Management System (JIMS).

Mental Health services staff, including the MHMRA staff who provide services in the Jail and at the NeuroPsychiatric Center, uses an electronic software system—Anasazi—which captures financial, clinical, and demographic data on consumers and CARE². The Forensic Jail staff has also created several ad hoc, stand-alone databases, spreadsheets and lists located on various computers or desks in many different areas in order to track or monitor the inmates they see. These sources hold information about initial requests for treatment, counselor contacts, recommendations for treatment, physician contacts, type of treatment initiated, diagnosis, medication prescribed and history, etc. New Start uses JIMS, Anasazi and a database designed by TCOOMMI which captures some of the same data as described above.

It is the goal of this project to coordinate the retrieval of this heretofore unintegrated CJ and MH data through on-line screens, special reports and notices in order to provide early identification of inmates as they are received in the Harris County Jail; improve the tracking of the identified mentally ill inmates from the point of "receiving" to diversion and release; and monitor all services received by the inmate while in Jail. Reports can also be created as an "alert" for the Court dockets. Such an alert rapidly identifies that an inmate has a history of mental illness and is currently receiving treatment or has received treatment in the past. This information will help to determine bail, release conditions, and possible diversion options at the Arraignment/Preliminary hearing. It can also provide prompts that an inmates release is imminent (for example within 5 days) so that linkage to treatment outside the jail can occur. Tracking an inmate's changes in housing while in Jail will improve the likelihood that medications and other services will be continued without interruption as he/she is transferred to different places in the jail.

The CJEIRS is based on a data warehouse system into which the above data are moved and from which electronic notifications are propagated to all diversion stakeholders. The integration and single location of relevant data from the many data sources currently in existence will reduce duplicative data, enhance the efficiency of diversion efforts, and increase the timeliness of information needed for data-based and informed judicial and clinical decisions.

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- *Expand available clinic appointments for individuals returning from jail or a TDCJ facility. Status: a Forensic ACT team has been created to accept referrals of priority population inmates who have had 2 or more admissions to the jail at the point of diversion (before booking) to the point of release from jail.*
 - *Solicit funding to expand ACT, housing and employment services for individuals with mental illness returning to the community from incarceration. Status: The FACT team has been provided limited funds for housing until financial subsidies can be obtained for the inmates*
 - *Increase support by the Mental Health Association of Greater Houston to obtain implementation funding for the plan developed by the Juvenile Justice Task Force. Status: Various Harris County Division and Department Representatives and MHMRA continue to participate in these discussions. The next task force meeting is scheduled for January 19, 2006.*

² CARE= Client Assignment and Registration Encounters—a system used by the Department of State Health Services to track client mental health care across the State of Texas.

Critical data will be extracted from:

- Harris County MHMRA's Anasazi Consumer database
- Client Assignment and Registration System (CARE)
- Harris County Forensic Mental Health Tracker System
- Harris County Justice Management Information System
 - Including, but not limited to: Jail Booking and Housing Information
- Harris County Sheriff's Office Central Records and Other sources yet to be identified.

The attached Diagram provides a schema for how records from the JIMS database are processed against the local ANASAZI and CARE databases in order to identify consumers among offenders and inmates. A master file of cross-system identities have been seeded since December 2004, cross matching the JIMS single person number (SPN) with MHMRA's client identifying number (Ana Case) and CARE identifying number (TDID). Linked to this master file is a CARE clinical data set, which includes basic CARE assignment information (including CARE component id, local id, county of residence, diagnosis and assignment dates). Local MHMRA assignments (including Forensic and other assignments that are not sent to CARE) are stored in the local database known as Anasazi (alias Ana). Special Forensic data elements are stored in the Tracker system.

Currently a nightly match is carried out. Offender files and inmate data are transferred automatically after midnight to an MHMRA FTP folder and loaded into a data mart in the MHMRA data warehouse. Records from Anasazi's Client file (about 350,000 records), assignment (about 1,000,000), diagnosis (800,000), and services (about 8 million) are also extracted from Anasazi and loaded into the same data mart using SQL scripts. Offender and inmate identities from the criminal justice system (about 400 per night) are cross-matched against the Anasazi client file in the data mart using a series of SPSS³ command files.

The matching process starts with social security numbers then assigns varying level of negative and positive weighting to different extent of key variables matches. These include last name, first name, birthmonth, birthday, birthyear, sex and ethnicity. A social-security number match does not guarantee the acceptance of the identity match if negative weights arise from lack of matching on the other keys. The combined probability weights have to reach a certain cut-off point before the match is accepted⁴. All "accepted" Ana-JIMS matched identities are then added to the master file of cross-system identities. Since over 90% of Ana client records also contain a CARE identifier, these identifiers are also transferred to the master file of cross-matched identities.

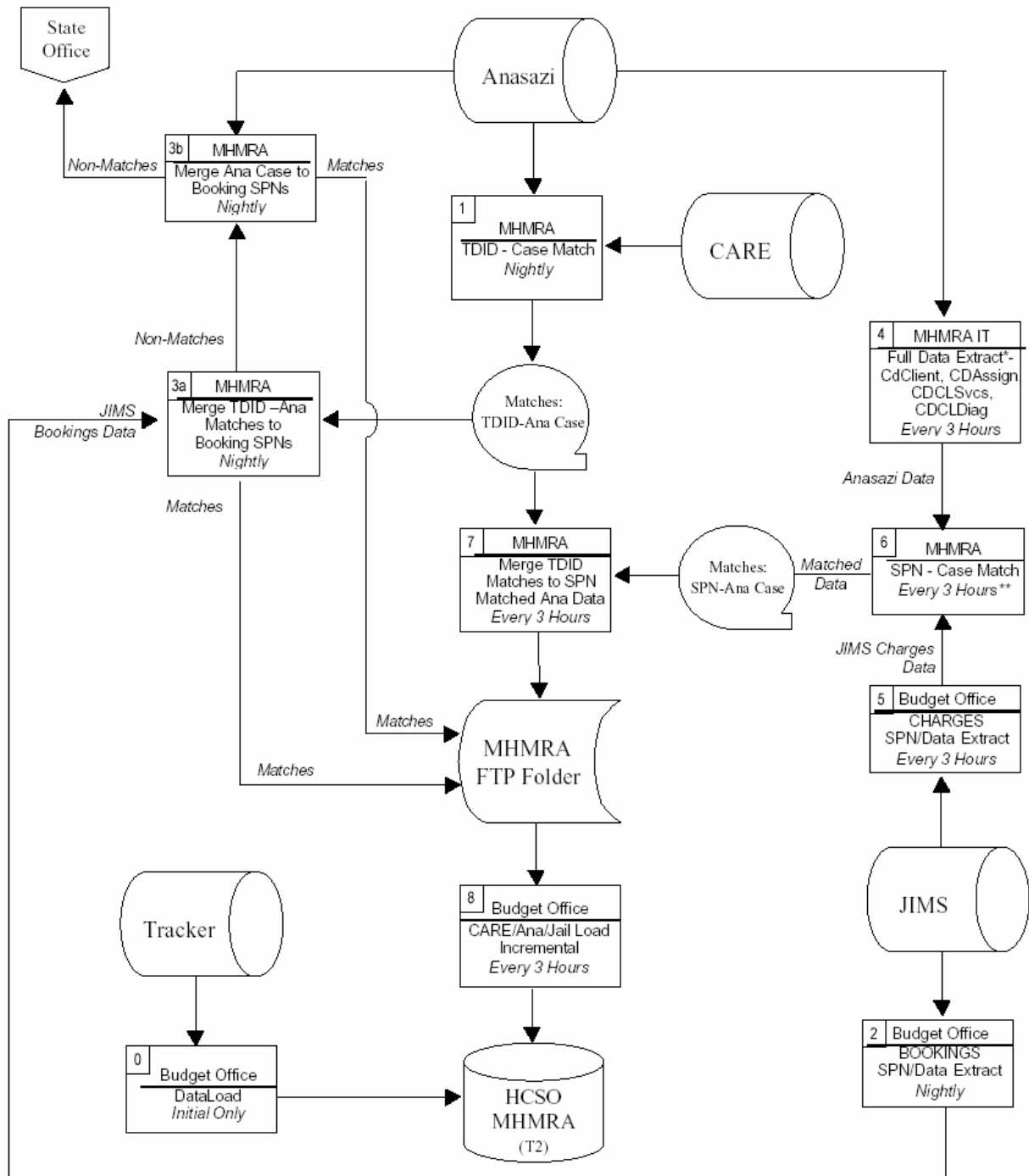
All new and unmatched offender and inmate records (or records with Ana match but no CARE id [TDID]) are then batched to CARE in the afternoon, via job BC2B280. The next day, the lines in CARE report HC026740, which is a report image, instead of a file format, are parsed by SPSS into client records and assignment records. In our experience, the CARE-JIMS match results tend to err on the false positive side, particularly for Hispanic offenders/inmates. Consequently all "MAYBE" matches from the CARE report are re-screened using sub-parts of last names and first names to reduce the number of false positives. Only acceptable CARE-JIMS client matches are loaded into the master file of cross-system identities or the local repository of matched CARE assignments as appropriate.

³ *Statistical Package for the Social Sciences, by SPSS, Inc.*

⁴ *We are investigating also the use of weights based on the phone directory of names in order to reflect more pragmatically the preponderance certain popular names in different ethnic groups.*

FORENSIC DATAWAREHOUSE

MHMRA Data Tasks - High Level



*Extract pulls services 1100, 1102, 7000, and 7002 for all units and services 1221 or 1225 for Unit 2700 only; Also pulls all open Medication (2212, 2213, 2214, 2215, 4310, 4311, 4322, and 4325) and State Hospital Diversion assignments (2711)

The above steps relate to blocks 1, 2, 3a, and 3b in the enclosed diagram. The planned development involves processes listed in blocks 4, 5, 6, 7 and 8 of the diagram. Basically, the enhancement will allow for an automatic trigger of the matching process every three hours and upon the presence of a new file (block 5) from the JIMS system. This development will not send records every three hours to CARE for matching, since CARE only accepts one batch job per day. However, should CARE become more interactive, we can easily modify the process in order to increase also the timeliness of downloading CARE client identifiers and assignments for matched cases.

Another part of the proposal is to redesign the Forensic Tracking system ("Tracker", a stand-alone Access 97 Database used by Jail-based personnel, which has been storing forensic clinical activities such as referrals, testing, reports to the Courts) into a more robust and standardized process with links to JIMS and ANASAZI, eliminating duplicative data entry and automatically and continuously updating information as offenders and inmates arrive in the criminal justice system. At that point, we also plan to incorporate matched CARE assignments into the Tracker (to be renamed and incorporated into the HCSO-MHMRA data warehouse as "T2") on the diagram. Reports inclusive of more clinically oriented data (key service types, diagnoses, restrictive care history, medication history, etc.) will be developed as part of this proposal. Information from the data warehouse will be automatically forwarded to stakeholders.

A further planned enhancement, which is not shown on the diagram, is the development of **risk indices**. The large accumulation of offense, incarceration, re-arrest, rebooking, jail length, clinical data, and demographic data (such as changes in addresses) offers us an unique opportunity to develop a tool for (a) understanding risk factors associated with recidivism and (b) identifying individuals most likely to benefit from diversion to mental health treatment (as well as those least likely to respond).

Personal characteristics of an enduring nature (e.g. age at first offense), personal characteristics of a dynamic nature (e.g. housing instability or current rated substance abuse or substance-related offending), offense history and offense characteristics, mental health diagnosis and mental health treatment summary variables can be entered as predictors into regression analyses, determining whether and how strongly each predicts recidivism. Previous research (e.g., Hickey, Farenthold & Nguyen, 2005)⁵ can guide selection of potential predictors. Over time, and over a series of analyses, a method for identifying likely treatment responders can be developed and cross-validated against clinical and criminal history records. We have done pilot work on a small sample of individuals entering the jail who had previous public mental health treatment histories. In this small, preliminary sample, several factors including age at first offense, substance abuse history, and housing instability were predictive of short-term (one-year) recidivism.

Psychometrically sound and cross-validated predictors can then be used to refine our knowledge of effective treatment strategies. In the study cited above, characteristics of individuals and type and quantity of mental health treatment predicted recidivism as late as eight years following the index offense. Mental health treatment planning can be informed by knowledge of previous treatment effectiveness. Predictive likelihood of positive outcome will also inform clinicians and administrators regarding where to deploy the scarce resources. An "opportunity" index could also be developed from the predictors to inform law

⁵ Hickey, J.S., Farenthold, E., & Nguyen, T.D. "Mental health treatment and subsequent re-arrest." Presented June 2, 2005 at the Annual Conference of the Mental Health Statistical Improvement Program of the Center for Mental Health Services, Washington, D.C. Also presented August 25, 2005 at the City of Houston Public Health Department Data Sharing Conference.

enforcement officials (police, sheriffs, judges, etc.) to support the promises of good behavior among those seeking to remain in the community (instead of jail), conditional upon treatment adherence.

The final part of the design consists of testing and implementing remote access to the information. This feature will be web-based and real-time for mobile teams such as the CIT, the Forensic Assertive Community Treatment (FACT) team, the NPC's Mobile Crisis Team and even clinicians of record during non-regular office hours. For stakeholders working in the Jail, the ability to update information while consulting with inmates on the housing floor will be available via hand-held computers that can upload the information to the data warehouse following the interviews. This can be used to record medication dispensed, continuity of care interviews, screenings, etc.