



facilitate healthy, drug-free lifestyles. Prevention strategies include universal and selected prevention programs. A variety of prevention services target communities as well as individuals at varying levels of risk.

- B. Intervention** – The goal of intervention services is to interrupt the illegal use of alcohol, tobacco and other drugs by youth and to break the cycle of harmful use of legal substances and all use of illegal substances by adults in order to halt the progression and escalation of use, abuse and related problems.
- C. Treatment** – Treatment is the planned, structured and organized continuum of services designed to initiate and promote a person’s sobriety and to maintain the person free of alcohol or illegal drugs. These services include those needed by clients with co-occurring substance abuse and mental health problems.

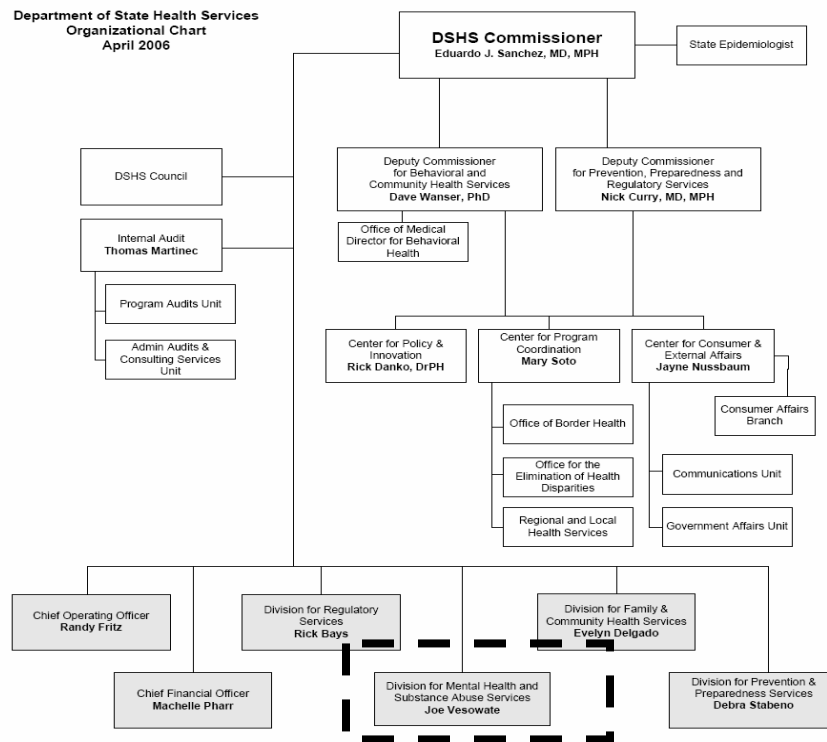
**10. Please list the names of the members of the Electronic Public Health System Team (who will all be considered authors of the application):**

- John Keppler, M.D., Clinical Policy and Planning
- Charlesta K. Lee, SWPM, Software Development Project Leader

**Section B. Application**

**The Organization**

There is a transformation of health and human service agencies under way in Texas designed to create a more efficient and effective way to protect public health and support Texans in need. Twelve agencies have been blended to create four departments under the direction of the Health and Human Services Commission. DSHS is one department and was created by the merger of the public health, mental health and substance abuse organizations. The electronic health record that is the focus of this application was created by the substance abuse agency, formerly the Texas Commission on Alcohol and Drug Abuse (TCADA). The goal of the transformed enterprise is to improve client services, use every public dollar efficiently, and focus on real results and accountability. The new organization continuously strives to improve services and manage costs by listening to business partners and the people served and by putting innovation and new technology into practice. The following chart is a high level representation of how the department is organized:



DSHS is the state authority for substance abuse and mental health services in Texas. The division on the organizational chart indicated by the dotted line is where this function exists. The Division for Mental Health and

Substance Abuse Services (MHSA) ensures a continuum of complementary mental health, alcohol and other substance abuse services in an efficient, effective and fiscally responsible manner. The responsibility for improving access to these services across the state also lies with this division. Target populations are identified to ensure that resources are directed at the most vulnerable individuals and those whose problems have the greatest impact on the health and well-being of indigent families, communities and society.

The federal Substance Abuse Prevention and Treatment (SAPT) Block Grant is the primary funding stream for the substance abuse services provided by MHSA. This grant dictates the following priority populations:

- Pregnant injecting drug users
- Pregnant substance abusers
- Injecting drug users
- Individuals with co-occurring substance abuse and mental health disorders
- All others with chemical dependence

In addition, the Texas Legislature mandates the following priority populations:

- Youth who currently abuse, have abused, or are at risk of abusing substances including youth in or referred by the juvenile justice system
- People who have or are at risk of having human immunodeficiency virus (HIV) infection through substance abusing behavior
- Substance abusers who have now or who have at one time entered the criminal justice system
- Substance abusers who are at risk of institutionalization or who currently are served in mental health facilities
- Substance abusers who have had children placed under the conservatorship of the Department of Family and Protective Services
- Youth who are at risk of selling controlled substances
- Women with children or women of child-bearing years
- Indigent veterans who have received an honorable discharge
- Injecting drug users
- All others with chemical dependence

Mental health services are funded by a variety of federal, state and local funds. Primary funding streams for community mental health services include Medicaid, state general revenue and Community Mental Health Services Block Grant funds.

Adult priority populations include those who have severe and persistent mental illnesses such as:

- schizophrenia,
- major depression,
- bipolar disorder, or
- other severely disabling mental disorders which require crisis resolution or ongoing and long-term support and treatment

Priority populations for children and adolescents ages 3 thorough 17 years include those with a diagnosis of mental illness who exhibit serious emotional, behavioral, or mental disorders and who:

- have a serious functional impairment (GAF of 50 or less currently or in the past year),
- are at risk of disruption of a preferred living or child care environment due to psychiatric symptoms, or
- are enrolled in a school system's special education program because of a serious emotional disturbance.

## **Management**

### *a) Objectives*

Community-based nonprofit substance abuse and mental service providers have had difficulty overcoming a number of challenges that impact the quality of care and limit the quantity and reliability of information about the services they provide. Critical issues include:

- Clients are increasingly complex and becoming more difficult to treat due to the growing likelihood of poly-drug use, mental and emotional disorders, and social problems with which they present.

- Many counselors, especially those with more limited education, have difficulty conducting comprehensive client clinical assessments, planning and implementing treatment, and documenting and organizing client information to support and inform clinical and administrative processes.
- Continuity of care is often disrupted due to lack of communication and inefficient methods of exchanging information among providers.
- Client records are often incomplete and/or contain inadequate documentation. In 1999, prior to the implementation of the BHIPS, a State directed peer review of provider organization's clinical record documentation was conducted. Clinician's from various organizations traveled to peer organizations and used a standard questionnaire to evaluate paper client files. The findings in this review made it clear there was a need for standard clinical practices and client service documentation. Out of 63 random charts evaluated, 42 contained no evidence of a diagnosis nor was a diagnosis consistent with the client's intensity of care or length of stay. A myriad of assessment instruments were used, many of which were not designed to assess the client appropriately for determining severity or placement. These instruments ranged from true clinical assessments to a simple demographic sheet.
- Too much staff time is spent on duplicative data entry to comply with internal clinical and administrative documentation and external reporting requirements.
- Programs lack sufficient information and tools to evaluate their services and implement needed quality improvements.
- Most nonprofit organizations do not have the resources or expertise necessary to benefit from advances in computer technology and the Internet.
- Research and evaluation are often limited by the availability of data and difficulty accessing it. Conversely, new knowledge gained from research and evaluation is rarely reflected in program services.

The limited quantity and quality of data restricted TCADA's ability to accurately evaluate the effectiveness and efficiency of individual providers and the statewide service delivery system. A new approach was needed to improve client services, enhance provider productivity, and provide meaningful performance information in a timely manner.

The department created an automation solution to help improve the state-wide service delivery system. The guiding principle in the development of this automated solution was that there "should be absolutely nothing that the Department of State Health Services or a provider needs that can't be found in the record. The objectives for the development of BHIPS were:

- To provide a cost-efficient management information system with a technical configuration and software functionality comparable to private sector software systems,
- Improve the consistency and quality of care provided by DSHS-funded programs,
- Improve accuracy and completeness of data,
- Improve information sharing and continuity of care among service providers,
- Decrease the administrative burden for providers and increase the productivity of their staff,
- Enable nonprofit programs to benefit from current technology and the Internet by providing them with access to a state-of-the-art software system,
- Ensure compliance with state and federal reporting requirements,
- Provide an extensive database and tools to ensure comprehensive program evaluation and facilitate research,
- Provide feedback to service providers in an easy to understand format,
- To enable provider access to their data for local analysis and reporting, and
- Streamline state oversight activities.

*b) Project Organization*

The system effort is managed by the following teams:

- **BHIPS Management Team (BMT)** - This team is comprised of DSHS personnel from different business areas of the agency. Its functions are to guide the project and act as a conduit to agency senior management. The project's executive sponsor leads this team. The team meets monthly to effectively guide the project. This team is ultimately accountable for the project success, for the resources assigned to the team and prioritizing work based on current need. Internal and external subject matter experts are invited to the meeting as needed.

- BHIPS Support Team - This team is comprised of programmatic, clinical, financial and technical assistance specialists as well as IT personnel. Its functions are to provide training to internal and external users, handle on-call support, and support application testing. It meets as necessary to effectively support these functions.
- BHIPS Development Team - This team is comprised of the Project Manager, Project Leader, Technical Writer and all Developers. The membership of the team is somewhat fluid so as to respond to the resource needs of the project. Its function is to analyze, design, develop, test and deploy the application and any enhancements or defect corrections needed. The Development Team meets as needed to determine and document progress. This information is emailed to the BMT.

## Implementation

The Behavioral Health Integrated Provider System (BHIPS) is a nationally recognized, comprehensive, web-based clinical information system for substance abuse and mental health service providers that supports services delivered independently or through provider networks. It includes a guided clinical interview and other tools to help providers implement best clinical practices as it tracks client service utilization and progress, automates billing, and provides extensive reporting and analysis capabilities as a by-product of the clinical processes. The application database is part of the integrated database making financial and contract data directly available to the system.

The application is hosted and maintained at DSHS' central facility. The fact that it is a web application ensures centralized control over maintenance and additions made to the system, resulting in one cost for updating one system as opposed to each provider paying to amend their individual systems. When alpha testing is complete, the application is passed to the Training and Technical Assistance team for beta testing. For major releases, a pilot is usually conducted using volunteers from the service provider community. Any usability issues are resolved and then the application is deployed state-wide. This process is accomplished very quickly and providers have become adept at managing program level training and ensuring competencies are current.

### *a) Public Health Organization*

Initially, the system was only made available to DSHS funded providers and internal users. Over time additional organization types have been given access to the system to enable the department to evaluate the effectiveness of more treatment provider types:

DSHS Funded Providers – DSHS does not perform traditional substance abuse services but contracts with approximately 200 providers to provide those services. Funded providers are required by contract to use the BHIPS for documentation and billing.

### *DSHS Internal Staff:*

- Quality Improvement Staff – The Quality Management monitoring group uses the data in the BHIPS to evaluate client records for compliance purposes and to determine if a site visit is needed to help correct problems identified in the review. Prior to the BHIPS, travel to sites was always necessary. The BHIPS provides the ability to identify high risk providers where on-site visits are most needed; thereby greatly reducing time, cost and feedback cycle time.
- Contract Project Officers – evaluate service provider's contract performance using reports generated from data entered into the BHIPS. If contracted providers are not achieving their goals in service provision and/or expenditures on a monthly and quarterly basis, the project officer will contact the provider and offer technical assistance to help them meet their goals. They also use this data to identify and track providers that are at high risk of not meeting their contractual obligations. The following is an extract from one of the reports the project officers use to monitor performance:

**Contract Performance Management Division  
Prevention/Intervention Program Quarterly Review**

(Report run date: 2/23/2006. Report includes entire first and second quarter report period)

**Quarter 2**

Contractor Name:	Mid-Coast Family Services, Inc..
Program ID:	08-0855-062 OSAR
Contract #:	11338
Performance Benchmark:	50%

Key Performance Measures	q1	q2	q3	q4	FY Goal	YTD Served	% Goal Met	< 10 % Pts of Benchmark	
# adults receiving post-screening crisis intervention, and/or motivational instruction	103	103	103	104	413	404	98%	No	
# adults screened for substance abuse	396	396	396	396	1,584	868	55%	No	
# youth receiving post-screening crisis intervention, and/or motivational instruction	15	15	15	16	61	48	79%	No	Contract Project Officers also use the performance
# youth screened for substance abuse	52	52	52	53	209	108	52%	No	

If performance is < 10 Percentage points of benchmark, contractor contacted: Yes \_\_\_\_\_ No \_\_\_\_\_  
 data collected in BHIPS during the evaluation of applications for contract renewals and new contracts.

NorthSTAR – A behavioral health managed care system used in seven counties around the Dallas County area. Local providers enter assessment data into the system and request approval for the managed care organization using the BHIPS, to admit a client to substance abuse and/or mental health treatment. The management organization accesses the data and either approves or disapproves the admission based on client need. The data entered by the NorthSTAR program is also loaded into the data warehouse where outcomes from NorthSTAR are compared to outcomes outside of the managed care program.

Texas Department of Criminal Justice-Community Justice Assistance Division (TDCJ-CJAD) –uses the system for the management of Diversion Programs. These programs are intended to strengthen community supervision by reducing caseloads, utilizing progressive sanctions models, and providing more residential treatment and aftercare.

Drug Courts/Probation Offices – Upon being awarded the federal grant for Access to Recovery (ATR), a voucher based demonstration project, Drug Courts and Probation Departments have access to client data that is managed by Assessment Providers, Treatment Providers and Recovery Support providers. Each of these entities uses the system for monitoring the provision of services and client progress for drug court and probation clients that have been given the opportunity to attend treatment in lieu of incarceration.

b) *Scope*

The current functionality of the system is represented in this table:

Functionality	Description
Client Profile (demographics)	When a client presents for treatment, the counselor collects basic demographic information in the Client Profile. This record becomes the anchor for the clinical file.
Screening Instrument	After the Client Profile is collected the clinician performs a brief Screening. If the score on the screening indicates potential substance abuse problems, the counselor completes a full assessment.
Addiction Severity Index Assessment (ASI-Lite)	The assessment instrument is based on the Addiction Severity Index (ASI)—Lite and collects information about the client's history and current status. It is divided into sections that include collection of general, medical, employment, substance use, legal, family, and psychiatric history and current status of the client. There is a summary that extracts significant information from all sections of the assessment onto one screen, providing a single place to view important information without having to page from section to section. This information helps the provider when making decisions regarding a client's need for treatment for a substance abuse, dependency problem or mental health problem and to make a diagnosis and determine the client's level of severity. If the client is eligible for services, placement criteria is used to determine the type of services the client needs and the client is admitted for treatment.
Clinician's Assessment	A progress assessment tool is also available to provide a quantitative measure of the client's clinical progress over the course of treatment. The Clinician's Assessment collects information about the clinician's observations of the client. It is somewhat subjective in nature but allows the clinician to capture educated opinions on the client's current status. To aid in selecting the correct rating, a description of the symptoms the client would exhibit were he/she extreme, is given. The rating may

Functionality	Description
	be scaled back based on the clinician’s observations and impressions. This assessment is repeated throughout the cycle of care. The first time this information is collected is in the initial assessment. It is also performed over the course of treatment and at the end of treatment, the counselor completes the Discharge Report which also contains the Clinician’s Assessment. When a rating is selected, it is stored with a numeric value, i.e., None = 0, Extreme = 4. A BHIPS report is available where the numbers from the various iterations of the clinician’s assessment are displayed. It provides a tool to aid in the determining whether the client is improving. Using this instrument, the clinician can see a picture of the client’s progress from the time the client presented for treatment, throughout treatment and at the time of Discharge.
DSM-IV Diagnostic Instrument	The DSM-IV Diagnostic instrument summarizes the assessment, collecting a diagnostic impression. This impression is multi-axial in that it captures the state of the client’s alcohol and drug abuse and mental health disorders, personality and mental retardation, medical conditions, psychosocial and environmental problems, and assessment of the client’s functioning.
Access to Recovery (ATR) Voucher	This functionality manages the treatment and recovery support services to clients involved in the criminal justice system through drug courts or probation offices. A client is evaluated by an independent assessment provider using the instruments in the BHIPS and determines the client’s needs. Services provided are residential and outpatient services as well as recovery support services including but not limited to Childcare, Transportation, Relapse Prevention, Family counseling, etc. A voucher is created for the client and is good for one year or until the client leaves the ATR program.
Financial Eligibility	Providers are required to determine whether an applicant is financially eligible to receive services funded by DSHS. The necessary information is gathered and the BHIPS calculates whether the applicant is financially eligible and whether or not the applicant will be responsible for payment of a portion of the treatment provided. Billing is blocked when a client is not financially eligible for state funded services or is responsible for a portion of his/her treatment. The federal poverty level is used along with a sliding fee scale to determine financial eligibility.
Treatment Plan	The information collected in the assessment is also used to develop a treatment plan for the client. The Treatment Plan is generated from a completed Assessment. A comprehensive list of client problems is created based on how the client responds to specific questions in the Assessment. This insures that no problems go unidentified and unaddressed. You may add goals, objectives and strategies to the problems to be treated. Clinician’s may also refer and defer problems. The Treatment Plan also includes a Discharge Plan. Multiple versions of the Treatment Plan are maintained so updates can be made and the history of the plan can be kept.
Treatment Plan Review	Periodically, the counselor completes a Treatment Plan Review and revises the Treatment Plan to adjust to the changing needs of the client. The Treatment Plan Review is generated from the Treatment Plan. Progress toward goals on all problems with a status of ‘Treat’ is a required element as well as justification for continued length of stay, transfer or discharge. A history of the Treatment Plan Review is also maintained.
OSAR Residential Approval	Treatment providers now need authorization to place a client in residential services. Outreach, Screening, Assessment and Referral (OSAR) providers evaluate clients and refer them to the appropriate treatment provider that offers the services needed as indicated by the client’s severity. If the client presents at the treatment provider instead of the OSAR, the treatment provider evaluates the client and requests approval for residential services if they are needed. OSAR approval is based on DSHS placement criteria. Should the client need more time in residential service than has been approved, there is an extension process where the OSAR approves or denies additional residential services.
Admission Report	An Admission Report is used to complete the admission process and capture the client’s baseline data. The BHIPS already knows whether the client is an adult or youth from the Client Profile record so the appropriate form is automatically loaded when you select the Admissions menu item. When this form is saved, the provider may begin submitting claims to DSHS for reimbursement.
Progress Notes	As services are delivered, the counselor documents the treatment in Progress Notes that are tied to objectives in the client’s treatment plan, ensuring that all services provided are matched with the client’s needs. The Progress Note captures the client's progress in counseling and reflects the results of a specific service provided. Once a progress note is saved for a billable service, a HIPAA Pending Claim is generated for submission to DSHS for payment.
Didactic/Educational Progress Notes	The Didactic/Educational Group Notes screen is used to capture and display the didactic and educational services provided for a large group. Up to 35 patients can be selected and when saved,

<b>Functionality</b>	<b>Description</b>
	each patient's Activity List is populated with the group note. Billable claims are generated for submission to DSHS for payment.
Discharge Reports	The Discharge screen is used to collect discharge information and is filled out at the time a client is discharged or transferred from a provider facility. All of the DSHS required data is captured when filling out this form. The system determines if the client is an adult or youth from the Admission Report and automatically loads the appropriate discharge form. The system does not allow a client to receive additional services, progress reports, discharges, or follow-ups without having another active Admission Report.
Discharge Summary	A Discharge Summary is prepared that outlines the client's needs, treatments the client received, progress toward goals etc.
Follow-up Reports	The Follow-Up form is used to collect and display follow-up information. The BHIPS knows whether to display an Adult, Youth, or Detox Follow-up from the client's Admission report. Follow-up information is collected at various intervals after the client has been discharged. The frequency of follow-ups is determined by the provider and the number of Follow-up reports associated with the discharge is unlimited. All of the DSHS required data is captured when filling out this form.
HIPAA Compliant Billing Transactions	As a by-product of providers entering clinical data into the system, BHIPS generates HIPAA compliant transactions for payment of substance abuse and mental health services provided.
Automated Messaging/Reminders	Automated messages remind clinicians when processes and documentation are coming due. This helps the clinician stay current with each client's treatment and insures they are complying by DSHS rules and Federal and State reporting requirements. There is a My Desk screen that is displayed when logged on to BHIPS or when clicking the My Desk button on the BHIPS navigation menu. This screen displays a list of messages that were generated from within BHIPS, such as referrals, referral responses, assessment is due, treatment plan review is due, etc. and system messages. Navigation to the appropriate place in the BHIPS is accomplished by clicking on the message.
Automated Release of Confidential Information/Revoke of Consent	To facilitate continuity of care among different providers, BHIPS automates the process for obtaining client authorization to release confidential information and allows authorized providers to share information electronically. It is a federal law that a hard copy of the form must be filled out, printed, signed, and filed in his/her record to release. When the Consent form is saved in BHIPS, the disclosee has immediate access to the information indicated on the Consent form unless the consent is revoked by the client. When a Consent form is saved, changes to it are prohibited. If a mistake is made, the user may either revoke the Consent form previously saved, or create a new one to replace the original. Revoking Consent removes the ability of the disclosee to view the information.
Automated Client Referral/Transfer	When a client authorizes the release of confidential information, the clinician can refer a client to another service provider using the Referral screen. The Referral screen is used to collect and display referral information and to send the referral to the receiving provider. When the Send Referral button on the Referral screen is selected, BHIPS creates a Referral record and sends a message to the receiving provider's intake coordinator. Once a referral has been sent it cannot be changed or deleted. Note: Before you can send a referral you must obtain the client's signed consent to release confidential information to the receiving provider. If the client refuses to sign a Consent form, the referral may not be made using the BHIPS automated process. The BHIPS will display an error message if a referral is submitted with no active Consent form in the system for the receiving provider.
Wait List	The Wait List screen is used to place clients on a Wait List. The entire list is accessible by using the On-line Wait List report.
Available Capacity	The Available Capacity screen is used daily to report capacity. Reports are available to the public from the BHIPS homepage so individuals seeking services will know where there are openings.
Staff Member Tracking	The Provider Staff screen is used to collect and display general information about a staff member. If the staff member is currently employed, his/her name is available on all the forms in the system, where staff assignments are made.
Role Based Application Security	Access to the BHIPS requires that each staff member have a logon ID and a password. The staff member must also be assigned one or more roles. Roles are based on different jobs in the organization and are used to limit access to screens to only those needed to perform the job.
Reports and Downloads	The BHIPS has many reports that may be run on demand. These reports come from two different sources of data. A few reports come from the on-line system where the data is as up-to-date as the last transaction entered into the system. However, most of the reports are created using data from the BHIPS data warehouse. Each night all new and changed records are extracted from the BHIPS and

<b>Functionality</b>	<b>Description</b>
	added to the BHIPS data warehouse. This data is kept separate from the on-line system so large or complicated reports can run without degrading the response time of the on-line system. Any of the reports may be downloaded into a Microsoft Excel spreadsheet or a Microsoft Word document.
Assign Staff Access	With the Assign Staff Access screen, DSHS managers may assign view-only access to a provider's data for a specified amount of time. The client's name is masked so the staff member does not see it. This is useful in performing audits and monitoring.
Case Management	Using the Case Management functionality in the system allows case managers/counselors to keep track of services (treatment and non-treatment) provided for clients. Once a case is opened, a clinician can enter services, referrals, and referral follow-ups.
HEI Measures and Narrative	HIV Early Intervention (HEI) programs perform case management, provide services, client referrals and follow-ups to see if the client made contact. The HEI Measures and Narrative functionality generates a quarterly report, summing these activities and calculating performance measures from the data. It also has a narrative section for reporting progress, problems and plans for the program.
Performance and Activity Measures Monthly Report	Prevention and Intervention providers are required to report their performance and activity measures monthly. Measures include numbers served and demographics.
Check Capacity	Providers report bed capacity for residential programs each morning by 11:00 am. The Check Capacity functionality aids providers in finding openings with other organizations when they do not have room.
Pending Claims	Each time a billable service is recorded for outpatient or residential services, a claim is generated on the Pending Claims screen. Selecting a link on a claim will present the appropriate HIPAA transaction (837-Professional for Outpatient or 837-Institutional for Residential) for submission to DSHS for payment.
Outpatient or Residential Claim	Submitting a pending claim will bill DSHS for services provided. HIPAA transaction codes and modifiers are automatically generated based on the service type selected when the service is recorded.
Claim Status	Once a pending claim has been submitted, the Claim Status List screen is used to track the status of the claim. Each claim can be accessed using the link to the claim.
Payment Notification	When a payment is made, a HIPAA compliant 835 Payment Notification record is available for view by selecting the link to the record on the Claim Status screen.
BHIPS Forum	BHIPS has a bulletin board where users may communicate among themselves, sharing ideas and asking questions. DSHS also uses The Forum for communicating new and changed functionality in the system.
Curriculum Outcome Measures	Providers report quarterly on the outcomes of prevention and intervention classes provided at schools and community sites.

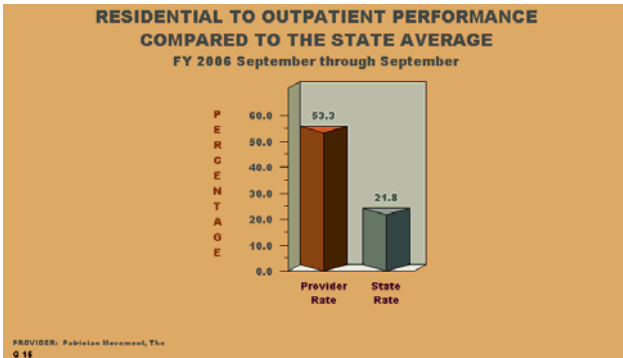
The BHIPS provides a complete set of clinical tools to manage and coordinate client care, guiding the counselor through the treatment process using structured interviews and data collection instruments. The system was designed for clinician's and the process flow matches that of their every-day duties. The BHIPS is intended to be used interactively with the client sitting with the clinician as data gets entered into the system. This interaction with the system tends to foster the client's ownership of the data therefore making it more accurate. Provider managers report clinician's with better clinical skills as a result of using the BHIPS because of its attention to detail and completeness during treatment.

The BHIPS has a separate component for prevention programs to track their aggregate performance and activity measures and outcomes. Additional functionality is being developed to provide prevention programs with a fully automated service record where data is collected at the event level, eliminating the need to calculate services provided and persons served at the end of a reporting period.

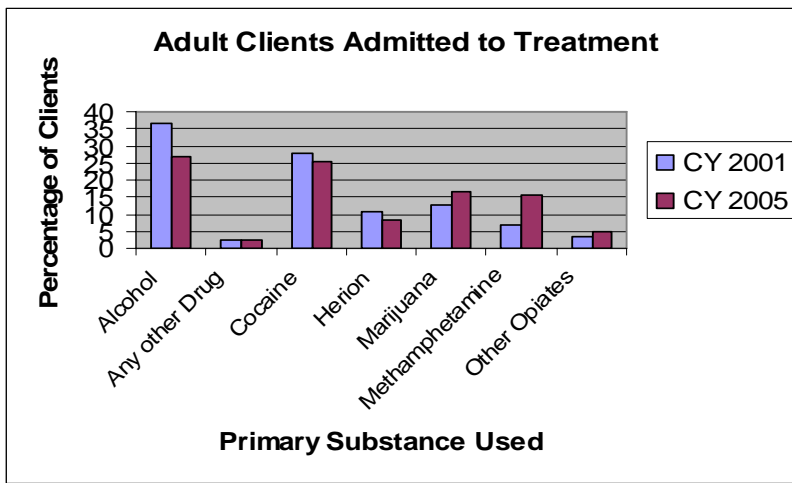
The BHIPS is an on-line, real-time, web-based electronic health record and billing system. All that is needed to use the system is a PC with an Internet connection and security access to the system. Funded providers, state-wide, are required to enter and access data through the system. DSHS provides reports to providers that indicate client progress while in treatment so that decisions about the treatment approach may be made when necessary. DSHS also provides on-demand reports to providers comparing their outcomes to contracted performance measures and comparing their outcomes to the rest of the State. The bar graph below shows how The Patrician Movement in San Antonio, a large comprehensive treatment organization, compares to the state average in successfully transitioning patients from residential to outpatient services. The table graph indicates the number of patients served to-date compared to the goals set in the contract. These reports help the providers identify performance shortcomings so they can improve their processes.

Austin Recovery, Inc.  
Number Served Compared to Award Goal  
FY 2006 September Through February

Award	Region	Description	Total Served	Goal	Pct of Goal
070810063KTO	07	Outpatient Individual/Specialized Female	0	194	0.0
070810063KTO	07	Outpatient Individual	0	137	0.0
070782063TRA	07	Intensive Residential	228	352	64.8
070782063TRA	07	Intensive Residential/Specialized Female	27	73	37.0
070782063TRA	07	Intensive Residential/Women and Children	46	73	63.0
070782063TRA	07	Outpatient Group/Specialized Female	65	233	27.9
070782063TRA	07	Outpatient Individual/Specialized Female	54	233	23.2
070782063TRA	07	Outpatient Group	231	382	60.5
070782063TRA	07	Outpatient Individual	201	382	52.6



Data is used by DSHS research staff and other research partners, such as the University of Texas, to identify trends in drug use, treatment practices that are working and those that are not, and funding needs across the State. For example, research performed by Jane C. Maxwell, Ph.D.<sup>1</sup> indicated a significant increase in the use of methamphetamines over the past five years as shown by the chart below:



The statistics in this graph show that during the past 5 years the number of admissions to clinics for patients who identified methamphetamine as the primary drug has increased from 7 percent in 2001 to 15.7 percent in 2005. Methamphetamine presents the greatest change in comparison to all other drugs.

The increasing prevalence of methamphetamine abuse may be slowed down if measures such as legislation restricting the purchase of the chemicals necessary to make the drug are effective and prevention programs are effective.

Sharing this information with the providers and policy makers as it emerges greatly improves response time in dealing with changing trends.

The BHIPS was developed using state-of-the-art technology. The application is currently developed using Active Server Pages (ASP) and Microsoft Visual Basic and is being converted to a standard framework using Microsoft .NET and Web Services. This rewrite will enable other functionality built on the same framework to be shared across business entities or states. Sybase is used as the database and development standards are strictly enforced. However, the framework is generic and can be used with any other database, making the BHIPS extremely portable for use by other organizations.

c) *Integration Level* – The BHIPS is a tool to facilitate the integration of physical and behavioral health services. Projects have begun to integrate BHIPS with existing mental health and other health services systems. One of these projects is to provide a common front-end so where the data comes from is seamless for the client, regardless of whether the user is substance abuse or mental health related.

The integration project will combine the substance abuse and mental health data into a consolidated warehouse. This will help track clients previously in both systems and identify overall behavioral health treatment needs. Future effort will endeavor to connect client level data within DSHS and across other agencies and providers.

d) *Privacy Protection* – The BHIPS uses Versign’s Secure Socket Layers (SSL) encryption tool to secure data as it is transmitted across the Internet. SSL is the industry standard used by banks, credit card companies and other financial institutions to protect electronic data. Each user has his/her ID and password that is encrypted in the database.

Access to data is controlled by role assignment. For example, as an intake clerk enters demographic information about a patient, they are assigned the Intake Clerk role. This role has very limited access to the various screens and therefore the clerk is unable to see clinical information about clients. All of these features help prevent fraud and misuse of the system.

<sup>1</sup> Jane C. Maxwell, Ph.D., University of Texas, Substance Abuse Trends in Texas, January 2006

Individual client identifying information is shared across provider organizations using the BHIPS; however, this is strictly controlled. A consent form is prompted on the BHIPS to be signed by the client and must be on file for information to be released electronically. Even then, only records the client authorizes can be released.

De-identified data is created from the on-line information system and stored in the data warehouse. Therefore, client-identifying information is not generally available to DSHS staff.

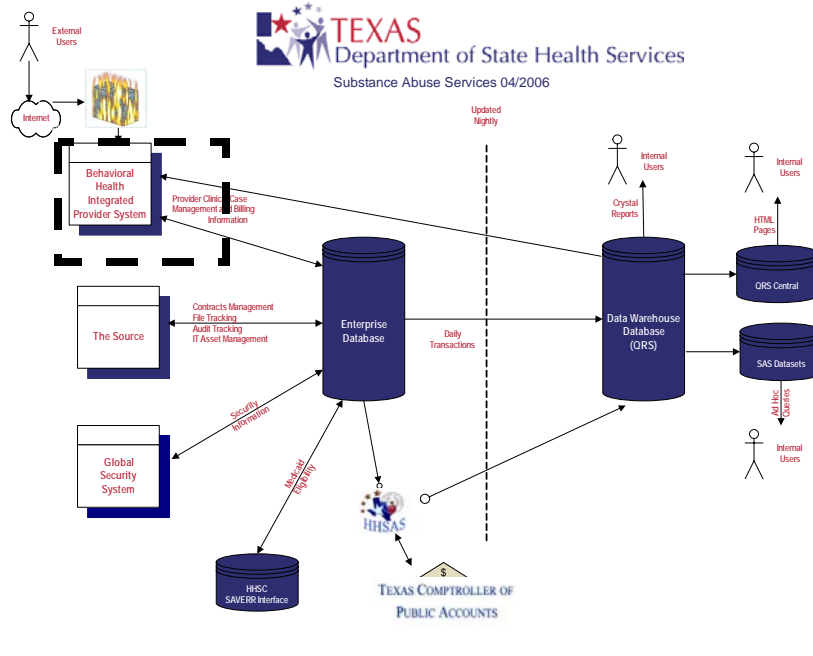
The BHIPS is compliant with all current rules and regulations for the protection of client identifying information including Federal Register 42 CFR, Part 2 and HIPAA.

e) *System Implementation* – The system has been developed and implemented in logical blocks of functionality. The core functionality of the system was piloted for a year. During this time, pilot providers used the system and provided feedback on the usability and function of the system. Pilot providers were surveyed 60 days into the pilot and there was an 89% overall approval rating. As a result of provider feed-back, several processes were slightly re-designed to improve usability and performance before rolling the system out June 2001.

DSHS, formerly TCADA, surveyed providers about technical readiness prior to roll-out. Each provider was classified as either 1=Ready, 2=Borderline or 3=Not Ready. Providers that were ready were trained and converted first. Borderline providers were given a timeframe to become ready and were trained and converted next. Those not ready were given a later timeline and were trained and converted last. Providers that were financially unable to comply by the technical requirements for using the BHIPS were given a one-time payment to purchase necessary equipment to become ready. This state-wide roll-out took approximately one year.

Internal training and technical support staff was trained by the clinical and IT staff that developed the system. They trained the providers using the train-the-trainer approach. Two to four staff members from each organization were trained either locally across the State or at DSHS. These staff members went back to their organizations and trained their own staff. On-going training at DSHS is provided to accommodate provider staff turn-over and refresher courses. The system has extensive and comprehensive on-line help and on-line training manuals that are kept current on a daily basis. All new functionality also has multi-media presentations associated with it. DSHS provides a HelpLine that is manned during regular office hours.

f) *Current State* – The system has been in production for 5+ years and is currently required to be used by every DSHS-funded substance abuse provider in the State of Texas. This includes treatment providers who enter client treatment data into the clinical record, billing staff that submit HIPAA compliant claims to DSHS for payment, prevention and intervention service providers who enter reports of numbers served and performance outcomes, and administrative staff that are supervisory in nature or are security administrators for their organization and use data for management purposes. The BHIPS is a component of a much larger system. It sits on top of a fully integrated database that not only contains BHIPS data but also includes all other departmental related data such as contracts, budget, billing, etc. See the figure below:



**Adoption and Interoperability**

The BHIPS was the impetus for the Web Integrated Treatment System (WITS) created by the federal Substance Abuse Mental Health Services Administration (SAMHSA) for other states interested in using shared technology. The BHIPS has recently been re-written in Microsoft .NET using the framework that allows the application to be database independent. It also allows the sharing of functionality across states reducing the effort on all using the common framework. There are 5 states and 1 urban county using the BHIPS/WITS for their substance abuse service systems. Several other states are in negotiation regarding implementation of one of these systems, as code is made available upon request. In fact, versions of BHIPS have been implemented by Nevada and are planned for implementation in Ohio. The Texas Department of Criminal Justice and local courts have also been able to adopt BHIPS for their own uses.

Due to the nature of the confidential data, the public is limited to accessing provider demographic information such as name, location, services provided and available capacity or to performance informational reports created by DSHS staff. Any additional access is controlled by the security measures described above. Graphs are available to the public that show overall State performance for the last two fiscal years.

Providers can monitor their contract and clinical performance on a to-date basis through graphs that compare their performance to that of the State in general.

**Scalability**

Hurricane Katrina, the Category 5 disaster that ripped through the Gulf Coast on August 29, 2005, had a multitude of ripple effects. Patients that fled the effected states, essentially becoming refugees, were at a loss for medical records and treatment providers. Literally overnight, 470,000 people came to Texas and the dynamic, interactive design of BHIPS allowed it to respond within a matter of hours to the public health need to identify and capture services to these patients electronically.

**Value**

a) *Success in Meeting Objectives:*

Since implementation, the BHIPS has informed and allowed the state to use data to make decisions at several levels. Patient level analyses informs improvement and understanding of the treatment process and client outcomes; program provider level analyses informs about treatment effectiveness, coordination of care, and management of clinical and business processes; and policy level of analyses allows for better decisions regarding treatment service array, gaps in access and service availability, service purchasing needs and use of limited resources, and improving clinical practice.

**Standardized Clinical Documentation** – The logic of BHIPS is that of a guided clinical interview. Standard screening and assessment tools are used. These tools lead the clinician and client through the evaluation process and insure that no areas of importance to treatment are neglected. This process is widely reported as an excellent tracking tool. All clients are

diagnosed using DSM-IV criteria and every admission is justified. Standardized treatment plan problems are automatically generated from the assessment based on how the client answers specific questions. The generated treatment plan ensures complete non-redundant, pre-populated problems are identified and addressed in treatment. Standard treatment plan reviews are performed and treatment plans are revised, on-line, based on client progress as indicated by clinician reports. In the 2005 peer review activity, 100% of client records examined in the BHIPS had a comprehensive assessment and a diagnosis that was consistent with the documentation in the file as compared to 30% in 1999. This review was conducted at DSHS by a panel of providers who evaluated a sample of client records from a sample of provider organizations. As the entire clinical record is available, the peer reviews can be conducted without travel to each organization, an enormous savings in a state as large as Texas.

Reduction of Administrative Costs – HIPAA compliant billings are now tied to services provided and to one or more objectives in the treatment plan. Using this data, DSHS is now able to determine what it is paying for and if it is appropriate for the client. The department can calculate the cost of treatment and billing and Federal and State reporting requirements are now a by-product of a clinician's daily work, eliminating the requirement to report this data separately. Now that claims are a by-product of a clinical activity, the department has been able to significantly reduce payment processing to an average of 10 days. Many states take 30 days or more to reimburse providers.

Individual clinician's no longer have to use a records room for a paper file. All records are available on the counselor's desktop, at the click of a mouse. The reduction in paper documents is approximately 80% and providers no longer have to copy documents and pay for mailing; the documents are available on-line in an organized fashion. The automated consent and referral process fosters providers working together to insure a patient receives a full continuum of care and allows providers to better plan for client caseload. Automated messages and reminders help clinician's manage their caseload and organize their activities such as treatment plan reviews and updates.

Service Quality Improvement – By accessing the system from DSHS, Quality Management (QM) staff have reduced travel and associated costs by 60%. The availability of the data in the BHIPS allows for desk review, more reviews during the course of the year, and more immediate action and communication with the provider if issues are identified.

Use of the BHIPS by providers has improved the overall quality of clinical documentation which results in fewer compliance problems and corrective actions. The system contains many on-line management reports for the routine evaluation of key business processes which has resulted in improved clinical care. The BHIPS data enables not only short-term but also long-term analysis of program quality.

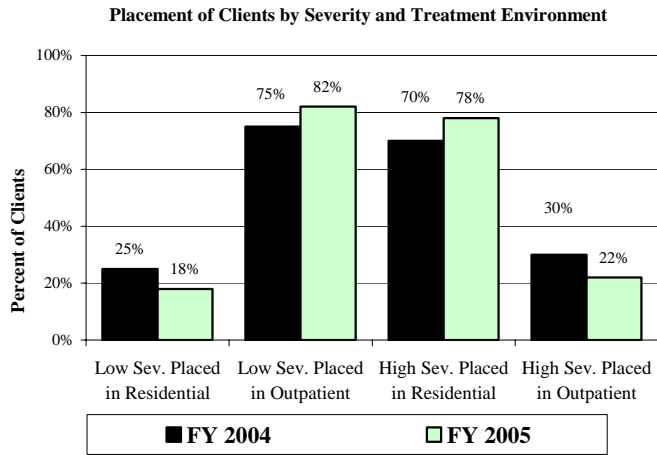
The BHIPS has been instrumental in helping providers adopt a continuous quality improvement culture. An example of this scenario is the federally funded, Center for Substance Abuse Treatment (CSAT), Strengthening Access and Retention in Treatment (STAR) project at the Patrician Movement (PM) in San Antonio, Texas. QM staff has worked with the provider to more fully utilize BHIPS data and measure 18 factors related to access and retention. By using this data to inform changes in the system, the PM adjusts their practice for improvement. Among the program successes are:

- Reduced the time a client is on the wait list from 60 days to seven days,
- Increased admissions by 20 percent,
- Twenty percent more of their patients stay past the 4<sup>th</sup> day, (the most crucial time for dropout),

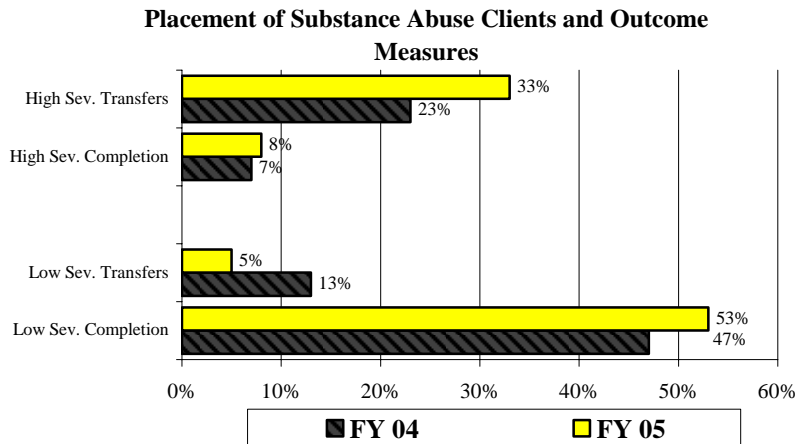
Without the BHIPS data, these improvements would not have been possible.

Healthcare Improvements – By integrating placement criteria in the BHIPS client assignment to appropriate levels of substance abuse treatment, the department improved placement of clients in treatment on the evaluation of selected variables included in the Addition Severity Index:

As the figure below indicates, a greater percent of low severity clients were placed in outpatient services across study years. Also, a greater percentage of high severity clients were placed in residential services. A recent analysis regarding this process change indicates a 6% increase in number of clients served at the appropriate level, freeing up thousands of dollars for additional clients to be served. By providing data such as this, BHIPS allows proper allocation of clinical resources, budgetary control and the ability to provide population health information on the impacted group.



As a result of proper placement, the following figure shows a higher percentage of high severity clients in residential service transferred to a lower intensity level of care as opposed to leaving treatment after residential services. Also, a higher percentage of low severity clients placed in outpatient services completed the continuum of care:



On-line Help and Training – The BHIPS contains a comprehensive on-line help system that defines each page, field and expectations for the clinical data to be entered into each field. There is a how to/user guide that lists prerequisites for each page, step-by-step instructions for completing a document, links to help for actions to be taken next and definitions of possible errors and how to correct these errors. The help also contains packaged tutorials for conducting hands-on training. By using the train-the-trainer approach, providers are able to use tutorials to provide “just-in-time” training for their own staff using the most up-to-date training materials. This saves the provider time and money they would have had to expend traveling to DSHS for training and increases the amount of time clinician’s spend with clients.

b) *Costs and Benefits Offsetting Costs* – The development of the BHIPS was primarily funded with federal block grant money (approximately 85%), which was supplemented with state general revenue (approximately 15%).

Development Costs (9/1/98 through 3/1/02)

Contract Services	\$1,664,748
Information technology Staff Salaries (2.18 FTEs)	\$154,659
Information technology Training	\$3,500
Computer Hardware	\$38,146
Software	\$6,711
Supplies	\$3,524
Other	\$2,461
<b>Total</b>	<b>\$1,873,749</b>

External contractors were hired to develop BHIPS, but many of the DSHS' internal information technology staff also played a role in BHIPS development and/or support—the equivalent of 2.18 full-time staff. The agency already had a robust information technology infrastructure to support other applications, including the enterprise database, servers, data warehouse and an Internet access system. Some hardware and software components were required to supplement the existing architecture.

The availability of precise cost data associated with the development of BHIPS can help other states project development costs for similar systems, which is often the greatest challenge in planning automation projects. By starting with the BHIPS application and making minor changes, the state of Nevada was able to implement the system with providers, state-wide for approximately \$50,000.

Implementation Costs (9/1/98 through 3/1/02)

Staff salaries for training and technical assistance (2 FTEs)	\$80,000
Travel	\$7,500
Computer hardware for providers	\$154,000
Beepers and toll-free helpline	360
<b>Total</b>	<b>\$241,860</b>

DSHS surveyed contractors on their technology readiness. Although most had sufficient computer infrastructure, nine providers needed additions or upgrades to accommodate BHIPS. The agency allocated additional funds to enable these organizations to acquire the necessary hardware.

Key performance measures were derived at the beginning of the project by interviewing management staff at provider organizations to determine critical business issues. Upon determining where the new system could be of the most help, a survey was conducted to determine current costs for performing tasks. In February 2001, the pilot providers who had been using the system for over a year, were surveyed to determine actual savings. For example, in the initial survey, it took an average of 1050 hours per week for a large contractor to enter the required data into the reporting system. In the new survey the average from all contractors indicated BHIPS saves them 50% of their time completing paperwork. The cost savings is then calculated by multiplying the originally estimated amount by the percentage saved.

The following chart indicates the overall projected and actual savings achieved by implementation of the system:

*Annualized Cost Savings*

		<b>Number of Agencies</b>	<b>Annual Benefit per Agency</b>	<b>Total Annual Benefit</b>
Original Estimated Cost Savings	Large Contractors	1*	\$276,329	\$276,329
	Small Contractors	4*	\$55,616	\$222,464
	<b>Total</b>			<b>\$ 498,793</b>
Current Estimated Cost Savings	Large Contractors	1**	\$645,766	\$645,766
	Small Contractors	4**	\$97,506	\$390,024
	<b>Total</b>			<b>\$1,035,790</b>
	Net Variance			\$536,997

\* original estimates relative to the number of survey responses for projected savings for 1 large contractor.

\*\* current estimates relative to the number of survey responses for average actual savings for 4 small contractors .

**Annual Operational Costs:**

Staff salaries for training (1.5 FTEs)	\$69,600
Staff salaries for functional user support (1.2 FTE)	\$55,680
Staff salaries for technological support & maintenance (1.6 FTEs)	\$97,200
Contract salaries for technological support, maintenance (2.2 FTEs)	\$292,424
Beepers and toll-free helpline	\$450
<b>Total</b>	<b>\$515,345</b>

Having a centralized system as flexible as the BHIPS results in cost savings on a regular basis. The flexibility of the application saves downstream provider costs which if able to be calculated would be substantial. For example, it took less than a day to adapt the BHIPS to capture data to identify hurricanes Katrina and Rita evacuees that were seeking services state-wide. Otherwise, many of these clients might have been lost while providers scrambled to modify individual, parallel systems.

DSHS has assigned 2.7 staff persons to provide training and functional support for BHIPS on a full-time basis. Other members of the agency's training and technical assistance department provide back-up and assist with training. Two-day training sessions are offered approximately twice a month to accommodate new contractors and staff turnover at existing contractors. The development of multi-media, online, teleconference presentations are a regular part of the training effort. Technological support requires the equivalent of 3.8 full time staff.

The system went into full production in June 2001. As indicated, by the chart above, the system paid for itself in a very short amount of time and these cost savings continue to be realized on an annual basis. The system is updated continuously with patches completed as necessary.