Analysis for the Ten-Year Plan for the Provision of Services to Persons Served by State Psychiatric Hospitals (SPHs)

Consulting Services for DSHS Rider 83 RFP No. 529-14-0066

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Consulting Services Regarding DSHS Rider 83 RFP

Final Report

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Section 1. Acknowledgements

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Section 2. Scope of Study

As best practices continue to evolve, Texas is faced with a unique opportunity in the next few years to positively transform the behavioral health system across the State. The opportunity exists to create change while infusing best practices and care across an integrated system. A system built on best practices would provide the appropriate services and enable the desired outcomes for the citizens of the state of Texas suffering from behavioral health illness, leading these individuals to health and wellness.

The Texas Health and Human Commission (HHSC) in collaboration with the Department of State Health Services (DSHS) engaged CannonDesign, a full-service architecture, engineering, and interior design firm, and its subcontractors to develop an independent study that will serve to inform the long-term plan for the provision of services to persons residing in a state psychiatric hospital. The 2014-2015 budget enacted by the 83rd Texas Legislature, Regular Session, 2013, included DSHS Rider 83 requiring DSHS to consider the operational and infrastructure needs of the existing state psychiatric hospital (SPH) facilities, as well as the future demand needs for services to persons residing in an SPH. From April to August 2014, CannonDesign and its consultants met regularly with an advisory group of key DSHS stakeholders, interviewed over 85 individuals directly involved in the provision of services to persons with mental health and/or substance abuse issues, administered an electronic survey receiving over 580 responses, and toured the SPHs across Texas. Additionally, as requested in the RFP, CannonDesign and its subcontractors performed on-site facility condition assessments of existing buildings and site infrastructure at three (3) SPH campuses – Rusk State Hospital, North Texas State Hospital–Vernon, and San Antonio State Hospital. These three campuses represent the diverse conditions between urban and rural locations and were selected to be representatives for other campuses where the facilities were not assessed at the same level of detail.

This study evaluates the existing SPH infrastructure and services and assesses the care delivery model for behavioral health care delivered to the people of Texas today. The study identifies how best to address future demand, implement community strategies, and incorporate best practices across an integrated system. Recommendations for best practices in facility design and operations, future bed capacity and distribution of beds, and strategies to maximize appropriate community-based alternatives are also discussed in this report. As defined in the authorized scope of work, this study is primarily concerned with demand and provision of services for child, adolescent, and adult individuals served by the SPHs and those with substance abuse disorders; it does not include a review of the DSHS system.

Current State Assessment

Throughout the Current State Assessment, CannonDesign and subcontractors engaged a diverse group of stakeholders including state hospital leadership and directors, community advocate groups, direct consumers, and others. This collaborative team collected and reviewed relevant data to develop a clear understanding of the current strengths, challenges, and opportunities for the SPH system.

Final Report/ Future State Assessment

Future demand for state psychiatric services was projected in context of potential scenarios to incorporate the delivery of community health services in the future. Key deliverables included a draft of the final report and a presentation to review key assumptions used in determining the future forecast. In this phase, CannonDesign finalized recommendations for those options that best fit the vision of state psychiatric health services in the future.

Section 3. Executive Summary

In Texas, the Department of State Health Services operates state psychiatric hospitals (SPH) which provide the cornerstone of inpatient psychiatric services for Texans. The SPHs support DSHS' mission of improving the health and well-being of the people in Texas by providing inpatient mental health services to individuals within the state. SPHs are distributed across Texas: North Texas State Hospital (Vernon Campus and Wichita Falls Campus), Terrell State Hospital, Rusk State Hospial, Austin State Hospital, San Antonio State Hospital, Rio Grande State Center, Kerrville State Hospital, Big Spring State Hospital, Waco Center for Youth, and El Paso Psychiatric Center. The SPHs play a critical role in providing services to individuals with mental illness who may have limited access to inpatient behavioral health services and consecutive outpatient community support services upon discharge. These individuals represent the most complex and vulnerable population in the state. Over the past three years, annual admissions in the SPHs have declined steadily between fiscal years 2011 through 2013. In fiscal year 2013, 2,501 state psychiatric beds served 14,030 Texans with mental illness seeking treatment in one of the SPHs. In the most recent fiscal year, nearly every SPH operated at or greater than a 90 percent occupancy rate with the exception of Austin State Hospital, North Texas State Hospital, and Terrell State Hospital.

SPHs play a critical role in providing services to individuals with mental illness who may have limited access to inpatient services or outpatient community support

On average, the State of Texas spends more per capita than other comparable states on state-funded programs for inpatient psychiatric care. However, Texas ranks in the bottom quartile when compared to these other states regarding funding community programs. The increasing cost per capita is driven by several factors. The average cost per inpatient bed continues to rise as the consumer base presents with an increasing number of medical complexities and co-occurring conditions, as these are both more costly to treat. Individuals are also living longer; the incumbent aging population within the SPHs tends to have chronic complex medical and behavioral conditions, resulting in high utilization of services and resources. The increase in the number of forensic consumers is on the rise, requiring security provisions, heightened levels of care, and compression in the availability of civil beds. Finally, the SPH infrastructure in which care is being delivered is dated and costly to maintain.

Overall, individuals with complex comorbidities comprised nearly 96 percent of the population served at the SPHs in 2013

Overall, individuals with complex comorbidities comprised nearly 96 percent of the population served at the SPHs in 2013. As the consumer population becomes increasingly more complex and resource-intensive, DSHS will need to carefully manage the transitions of these individuals back to the home or community setting to ensure that the most optimal outcome can be achieved. This evolving consumer population will require a comprehensive array of services to ensure that

they are placed in the most supported setting possible where these individuals can achieve health and wellness.

The aging SPH facilities and infrastructure are a critical challenge, as they are functionally obsolete and are not conducive to current clinical, safety, quality, and workforce best practices. Best practices in behavioral health care indicate an approach that has shifted from passive treatment to one of active treatment, integration with primary care, normalizing environments, community care, consumer empowerment, and a focus on the overall continuum of care. Within the system, and across the 11 hospital sites, the newest buildings were constructed between 10 and 25 years ago. However, these "newer" structures tend to be in the minority, as the vast majority of building stock dates between the 1930s and 1970s and were intended to accommodate a different model of behavioral health care than today's standards. Renovations made over time have served to minimize the impact of aging on these buildings, but there is a limit to how far renovation can go before certain systemic features simply cannot be overcome.

From a systems perspective, the three assessed facilities (Rusk State Hospital, North Texas State Hospital – Vernon, and San Antonio State Hospital) were found to be in Poor to Critical Condition across all three campuses; within each facility there were significant deficiencies that require major repairs and/or system replacement. On average, across all three campuses, more than three quarters of all assessed buildings are either in poor or critical condition and only one in eight buildings was assessed to be in good condition. Currently, the average ten year capital and deferred maintenance deficiencies funding needs for each campus exceeds 34.8 million dollars. Diverting financial resources away from facilities and infrastructure will result in steady deterioration of building systems which, when allowed to persist without adequate funding, will require significant dollars to remedy.

Overall, SPHs are challenged with numerous roadblocks that make it difficult to provide the most effective service delivery within the continuum of care and to transition a greater number of consumers into the community settings. Most of the challenges stem from the mere size of the state and the current placement of resources and staff. State-owned and community-supported bed placement must take into account the appropriate service areas for projected future growth. Funding must also be directed to increase the availability and array of services in the community setting to care for individuals with increasingly complex needs, while continuing to support the vital services that the SPHs provide to this population.

Key Future Trends

Several key trends directly impact care delivery today and are expected to continue to compress an already challenged system. The rapid growth of the population and projected steady increase in the next ten years, the availability of mental health professional staff, and increase in the forensic population, will all influence the demand for inpatient and outpatient psychiatric services over the next ten years in Texas.

The Texas population is projected to grow 24 percent from 26.6 million in 2013 to over 33 million in 2024

According to the Office of the State Demographer, the Texas population is projected to grow 24 percent: from

26.6 million in 2013 to over 33 million in 2024. All age and gender cohorts are expected to experience growth; not surprisingly, the 60 and over age group is projected to experience the highest rate of growth with the number of females growing 52 percent and males growing 57 percent. Overall, the 60 and over age group is projected to comprise 21 percent of the population in 2024, which is up from 16 percent in 2013. This aging cohort of individuals is expected to present with complex co-morbidities and is proven to consume health care resources at a higher rate, given the corresponding rise in chronic diseases and age-related mental illnesses.

The largest population growth will be seen in urban and suburban hubs concentrated along the I35 corridor between San Antonio and Dallas as well as the Houston area. The current Austin and Brenham catchment areas are expected to experience the highest rates of growth while the San Angelo and Lubbock catchment areas are expected to experience the lowest rates of growth.

In addition to overall population changes, there have also been changes in the SPH system's consumer population. Over the past few years an increase in the number of consumers with forensic commitments presenting at SPHs has compressed the availability of civil beds. This population, on average, has a longer length of stay than civil consumers, and is expected to grow in volumes, thus further challenging the ability of the SPH system to care for the forensically-involved and to locate placement for these individuals in the community. At the same time, consumers with medical complexities and co-occurring conditions are on the rise, many of whom are part of the forensically- and civilly-committed population. Consumers with medical complexities and co-occurring conditions require additional care and support. Therefore, it is expected that consumers who are both medically complex or present with a co-occurring condition, and are forensically- or civilly-committed, will stress the SPH system as these consumers will require an additional layer of support.

Estimating Bed Need – Today and Tomorrow

Texas is a large state with unique strengths and needs related to geography, workforce, and local economies. With over 26 million residents today and rapid growth projected to reach over 30 million residents in 2024, understanding the current need for inpatient care and anticipating the future demand is critical. CannonDesign worked with HHSC and DSHS to develop a customized forecast, driven by population projections based on a variety of sources including data from the Texas Office of the State Demographer and the Center for Health Statistics. The outputs of this forecast were utilized to answer four fundamental questions.

1. How much inpatient capacity does Texas need today?
2. Who is shouldering the responsibility for inpatient care today?
3. How many persons are unable to gain access to inpatient care today?
4. How much inpatient capacity is Texas projected to need in 2024?

The answers to these questions provide a foundation for key policy decisions regarding inpatient care in Texas. This information is also the launching point for modeling the transformation of inpatient care in Texas to a system that works collaboratively to meet the needs of Texans with mental illness.

Forecasting Note: These figures should be interpreted as approximations of future needs used to aid in planning rather than definitive needs. Key assumptions and limitations are noted at the end of this section.

1. How much inpatient care does Texas need today?

The total number of beds that Texas requires today to provide inpatient psychiatric care to persons with and without a third party payer is 5,425 beds. This number is based on a calculation of observed demand plus unmet/latent need.

Observed Demand. (4,855 beds): This is the bed need for all persons receiving inpatient psychiatric care in Texas in the current year (April 2013 to March 2014). This bed count includes care delivered at state hospitals and community hospitals, and includes persons who have a public or private third party payer as well as those who are considered indigent.

Unmet/Latent Need (570 beds): This is an estimate of the number of individuals in need of inpatient psychiatric services who are not currently able to access care. It is assumed that these are individuals who require forensic and/or indigent care.

2. Who is shouldering the responsibility for inpatient care today?

Local communities, third party payers, and the State of Texas are all making significant contributions. As noted above, there is an observed need for 4,855 inpatient psychiatric beds in Texas. Existing care is broken out as follows:

- DSHS-Operated Hospitals (State Psychiatric Hospitals): 2,463 beds
- DSHS-Contracted Community Beds: 456 beds
- Other Community Operated Beds (publicly and privately funded): 1,936 beds

3. How many people are unable to obtain access today?

An estimated 570 additional beds would be required to ensure that all persons needing inpatient psychiatric care have prompt access and the proper resources. It is assumed that none of these individuals have a third party payer. CannonDesign determined Unmet/Latent Need by estimating the need as it relates to two groups:

- General Population (401 beds): These are defined as consumers in Texas with a Serious Mental Illness (SMI) requiring care but unable to access care. Using the Substance Abuse and Mental Health Services Administration (SAMHSA) prevalence rates, the inpatient need was estimated for the number of individuals with SMI in the general population that are not engaged in treatment. See Exhibit 3-1 for assumptions.

- Criminal Justice System (169 beds): These are defined as individuals with an SMI who are currently incarcerated but who may have been able to avoid incarceration had they

received care in a timely fashion. Using prevalence rates from SAMHSA, Treatment Advocacy Center, and Bureau of Justice, inpatient need was estimated for the population of individuals entering the criminal justice system in Texas (diversion opportunity) or discharging from this system (to avoid recidivism). See Exhibits 3-2 and 3-3 for assumptions related to these estimates.

Exhibit 3-1. Unmet Needs Bed Count Methodology

Unmet Need	2014
Texas Population	26,623,655
Percent of Texas Population that is Incarcerated	6.0%
Non-Incarcerated Texas Population	25,026,236
Percent of Population with Serious Mental Illness (SMI)[1]	4.1%
SMI Population	1,026,076
Percent of SMI Population w/ Perceived Unmet Need for Treatment[1*]	38.6%
SMI Population w/ Perceived Unmet Need for Treatment	396,065
Percent of Population w/ SMI that Felt the Need for Treatment[1**]	82.8%
SMI Population that Felt the Need for Treatment	327,942
Percent of SMI Cases Requiring Inpatient Services[1]	6.0%
SMI Population that would Utilize Inpatient Services	19,677
Community Average Length of Stay[2]	6.7
Community Days	131,833
Planned Occupancy Rate	90%
Community Bed Need	**401**

[1] *SAMHSA. 2012 National Survey on Drug Use and Health: Mental Health Detailed Tables. http://www.samhsa.gov/data/NSDUH/2k12MH_FindingsandDetTables/MHDT/NSDUH-MHDetTabsTOC2012.htm*

[2] *Q3 State of Texas Inpatient Admissions Data; CannonDesign analysis 2014.*

**Unmet Need for Mental Health Treatment/Counseling is defined as a perceived need for treatment that was not received.*

***Excludes the 17.2 percent of SMI population with Unmet Need for Treatment whose reason for not receiving care was "Could handle the Problem without Help".*

Exhibit 3-2 Corrections (Admissions) Bed Count Methodology

Admissions	2014	Source Notes
Individuals Added to the Corrections System each Year	77,363	Includes all individuals in prison and state jails
Estimated Prevalence of SMI Among Incarcerated	10%	Treatment Advocacy Center Briefing Paper (1)
Estimated Number of Incarcerated Population w/ SMI	7,736	calculation
% of Population w/ SMI requiring Inpatient MH Services	6.0%	2012 National Survey on Drug Use and Health: Mental Health Findings(2)
Estimated Incarcerated Population w/ SMI Requiring Inpatient MH Services	464	calculation
ALOS for DSHS Population	55 Days	calculation
Total Forensic Days	25,530	Calculation
Bed Need to Accommodate Waiting @ 90%	**78**	calculation

(1) *Treatment Advocacy Center Briefing, "Jails and Prisons," April 2009 http://www.treatmentadvocacycenter.org/storage/documents/jails_and_prisons--apr_09.pdf*

(2) *2012 National Survey on Drug Use and Health Mental Health Findings, Table 1.29B` http://www.samhsa.gov/data/NSDUH/2k12MH_FindingsandDetTables/MHDT/NSDUH-MHDetTabsSect1peTabs2012.htm#Tab1.37B*

Exhibit 3-3 Corrections (Discharges) Bed Count Methodology

Discharges	2014	Source
Individuals Discharged from Corrections System each Year	90,429	Includes all individuals in prison and state jails
Estimated Prevalence of SMI Among Incarcerated	10%	Treatment Advocacy Center Briefing Paper (1)
Estimated Number of Incarcerated Population w/ SMI	9,043	calculation
% of Population w/ SMI requiring Inpatient MH Services	6.0%	2012 National Survey on Drug Use and Health: Mental Health Findings(2)
Estimated Incarcerated Population w/ SMI Requiring Inpatient MH Services	543	calculation
ALOS for DSHS Population	55 Days	calculation
Total Forensic Days	29,841	calculation
Bed Need to Accommodate Waiting @ 90%	**91**	calculation

**2012 average sentence length for Texas inmates is 6.1 years per Texas Department of Criminal Justice, by planning year 2024 the individuals being discharged would have theoretically already been accounted for in the "Admissions" bucket.*

(1) *Treatment Advocacy Center Briefing, "Jails and Prisons," April 2009 http://www.treatmentadvocacycenter.org/storage/documents/jails_and_prisons--apr_09.pdf*

(2) *2012 National Survey on Drug Use and Health Mental Health Findings, Table 1.29B http://www.samhsa.gov/data/NSDUH/2k12MH_FindingsandDetTables/MHDT/NSDUH-MHDetTabsSect1peTabs2012.htm#Tab1.37B*

4. How much inpatient capacity is Texas projected to need in 2024?

An additional 608 beds (for all payers) will be required by 2024.

Applying current inpatient psychiatric utilization rates at the age and gender cohort to the State of Texas Demographer's 10-year forecasted population growth provides an estimated projection of the following bed needs for the State of Texas regardless of payer in 2024:

- State of Texas: 6,033 Beds (all payers)

This report lays out a variety of community based services that have been shown to impact the need for inpatient care. Investments in these alternatives may "bend the curve" and offset this projected need for increased capacity by 2024.

A Transformed System –Market Share Analysis

CannonDesign worked with state agency staff and community stakeholders, drew from research and best practices, and compiled data to help outline a vision for a transformed approach to inpatient care in Texas. If the State of Texas adopts this vision, consumers and community stakeholders will begin to see:

- Increased access to assessment and acute inpatient care in local communities across the state
- State psychiatric hospitals that focus more on individuals who require longer lengths of stay, including the forensic population
- Access to State psychiatric hospitals for the small number of highly complex individuals who are unable to be served in the community

These concepts are discussed in more detail in the body of the report. In order to incorporate this portion of the vision into DSHS planning and projections, they have been translated into market share assumptions. Understanding that a period of transition would be required if Texas moves toward this vision, the chart below shows the anticipated balance of consumers in the state that state psychiatric hospitals would serve.

Exhibit 3-4 DSHS Proposed Market Capture by Group

Legal Status	Age Group	Admission Type / Comorbidities	Length of Stay (Days)		
			<7	7 - 14	14+
Forensic	Child/Adolescent	All	3%	7%	90%
	Adult	All	3%	7%	90%
	Geriatric	All	3%	7%	90%
Civil	Child/Adolescent	Involuntary Admission	5%	20%	75%
		Voluntary Admission	5%	10%	75%
		Medically Complex	0%	0%	0%
		Substance Abuse	0%	10%	80%
		Eating Disorder	0%	25%	90%
Civil	Adult	Involuntary Admission	10%	20%	95%
		Voluntary Admission	5%	20%	90%
		Medically Complex	0%	20%	90%
		Substance Abuse	0%	10%	70%
Civil	Geriatric	Involuntary Admission	10%	10%	10%
		Voluntary Admission	5%	10%	10%
		Medically Complex	10%	10%	10%
		Substance Abuse	5%	10%	10%

These assumptions have been applied to three broad populations: the population that is currently able to access care in a community-based or state psychiatric hospital (Observed Need), the estimated population that does not yet have access to care (Unmet Need), and the rising number of those who will present for care as the population grows and various trends impact the State of Texas (Population Growth and Trends). They are described separately to facilitate understanding and decision-making regarding each of these groups.

Observed Need: Applying the figures in Exhibit 3-4 Proposed Market Capture, CannonDesign estimates that state psychiatric hospitals will continue to assume a significant portion of the responsibility for the population receiving inpatient care in Texas today, although its focus would shift to longer-term, tertiary, and forensic care. The remaining portion of care in the transforming system would be delivered by community-based providers, some of which would continue to be supported by state dollars and some of which will continue to be supported by local dollars and third party payers. If this system was fully implemented in 2014, the beds would be distributed as follows.

- State Psychiatric Hospitals: 2,715 beds
- Community-Operated Hospitals (state contracted, locally funded , or 3rd party funded): 2,140 beds

Of the total 2,140 community-operated beds, slightly more than half will be supported by a public or private third party payer. The remaining 1,010 beds will be needed to serve the indigent population.

Latent Need: Applying the figures in Exhibit 3-4 Proposed Market Capture, if additional resources become available, CannonDesign estimates that state psychiatric hospitals will assume a portion of the responsibility for inpatient care for the population who has not been able to gain access to care. CannonDesign has estimated the sub-population in this group that would require longer-term, tertiary care, or highly complex care that is projected to be served by state psychiatric hospitals. The remaining portion of care for the latent need population would be delivered by community-based providers.

- State Psychiatric Hospitals: 272 beds
- Community-Operated Hospitals (increased access for indigent population): 298 beds

Population Growth and Trends: Applying the figures in Exhibit 3-4 Proposed Market Capture, and given the shift in focus to a longer-term, tertiary, and forensic operation; state psychiatric hospitals would assume a share of the increased need for inpatient care produced by population growth in Texas. The remaining portion of care in the transforming system would be delivered by community-based providers. The numbers below reflect increased capacity requirements based on population growth and demographic trends anticipated by 2024. As stated previously, if investments are made in a variety of community-based options, these projections may be able to be revised.

- State Psychiatric Hospitals: 348 beds
- Community-Operated hospitals (access for indigent population): 125 beds

The Community-operated hospital estimate only reflects the growth of the indigent population. Community-operated hospitals would also need to plan for increased capacity for those with third party payers as the overall population grows.

State Psychiatric Hospitals – Today and Tomorrow

The analysis of 2014 observed demand and latent need with applied Market Share assumptions produces an estimate of the recommended number of state-operated hospital beds today.

- 2014 State-operated hospitals: 2,987 beds
  (2,715 Observed Beds + 272 Unmet Needs Beds)

Adding the anticipated population growth and forensic trends produces an estimate of the recommended number of state-operated hospital beds that will be needed in ten years.

- 2024 State -operated hospitals: 3,335 beds
  (2,987 Current Need + 348 Population Growth)

The remainder of the report will build upon these basic assumptions regarding demand and state-operated capacity. It will lay out a variety of options for meeting this need and areas where further analysis is recommended.

Assumptions and Limitations

The projections in this report should be interpreted as approximations of future needs used to aid in planning rather than definitive needs. The forecast reflects the following assumptions and limitations:

1. The bed need methodology and the recommendations are based upon implementation of the model of care for inpatient services that is described in Section 4: Vision of this report.

2. The bed need projections are estimates. Like all projections, there is a margin of error that should be taken into account, and projections that are further out in time are likely to be less accurate. This forecast must be periodically updated with updated volumes as SPH volumes and population growth figures change over time.

3. There is no generally accepted methodology for determining unmet need, and the methodology used to estimate unmet need described in this report relies on assumptions and statistics as described in this section.

4. Services for persons with mental illness are interconnected, and any estimate of bed need must consider services across the full continuum of care. These projections assume the current configuration of community-based services and do not account for any future investments in services that can reduce the need for hospitalization.

5. These projections also do not account for initiatives that are already underway, such as the 1915i or 1115 waiver programs.

Redefined Service Area

Currently, nearly half of the individuals served by the SPHs are placed in a facility over 100 miles away from their county of origin. To better align with the future vision, right care at the right time and right place, the service area of each SPH was redefined as a two-hour drive time from each facility. Projected bed needs were broken down by county and reallocated according to the new service area definitions. Facility recommendations were then made based on the projected bed need by facility.

In general, the findings and factors were found to closely align with one another at each site (e.g., functionally obsolete campuses and facilities were usually accompanied by high capital and deferred maintenance costs, and vice versa). The bed analysis and demand forecast indicate that no SPH is presently located in a sub-optimal area though three potentially unserved areas in the Panhandle, Montgomery County, and Waco/Dallas/Arlington corridor were identified.

Bed need was broken up into several different bed types and reflects both current (FY14) and projected (FY24) need.

- State Psychiatric Hospital Beds – indicating beds needed in the state psychiatric hospital setting, and providing the level of care required for the forensic/tertiary population identified in the market share estimates.

- Community-Operated Beds – indicating beds needed in the community, representing both indigent care and non-SPH forensic beds. These beds can be either supported by community hospitals or fulfilled by state contracted beds.

- Unmet/Latent Demand – indicating beds needed to fulfill the unmet demand, or subset of consumers not currently presenting at an inpatient facility but potentially requiring inpatient psychiatric care. While it is difficult to predict the clinical needs of a population that has not accessed care, it is likely that a portion of these individuals may require forensic or teritiary care in a state-operated hospital.

State Hospital Campus	State-Owned and Operated Bed Need	Community Bed Need	Unmet / Latent Demand
Austin State Hospital	▪ Current bed count: 299 ▪ Current SPH bed need: 314 ▪ Projected SPH bed need: 346 ▪ 10-Yr Diff: *+47*	▪ Current community need: 180 ▪ Projected community need: 200	▪ Current 2014 latent demand need: 85
Big Spring State Hospital	▪ Current bed count: 200 ▪ Current SPH bed need: 160 ▪ Projected SPH bed need:185 ▪ 10-Yr Diff: *(15)*	▪ Current community need: 59 ▪ Projected community need: 69	▪ Current latent demand need: 28
El Paso Psychiatric Center	▪ Current bed count: *74* ▪ Current SPH bed need: 92 ▪ Projected SPH bed need: 101 ▪ 10-Yr Diff: *+27*	▪ Current community need: 45 ▪ Projected community need: 51	▪ Current latent demand need: 15
Kerrville State Hospital	▪ Current bed count: 202 ▪ Current SPH bed need: 169 ▪ Projected SPH bed need: 212 ▪ 10-Yr Diff: *+10*	▪ Current community need: 61 ▪ Projected community need: 70	▪ Current latent demand need: 27
North Texas State Hospital – Wichita Falls	▪ Current bed count: 288 ▪ Current SPH bed need: 241 ▪ Projected SPH bed need: 267 ▪ 10-Yr Diff: *(21)*	▪ Current community need: 77 ▪ Projected community need: 87	▪ Current latent demand need: 40

State Hospital Campus	State-Owned and Operated Bed Need	Community Bed Need	Unmet / Latent Demand
North Texas State Hospital – Vernon	▪ Current bed count: 351 (288 after adolescent beds are moved to Victory Field) ▪ Current SPH bed need: 264 factoring out adolescent beds ▪ Projected SPH bed need: 322 factoring out adolescent beds ▪ 10-Yr Diff: *+34* factoring out adolescent beds	▪ Current community need: 13 ▪ Projected community need: 16	▪ Current latent demand need: 4
Rio Grande State Center	▪ Current bed count: 55 ▪ Current SPH bed need: 63 ▪ Projected SPH bed need: 70 ▪ 10-Yr Diff: *+15*	▪ Current community need: 21 ▪ Projected community need: 23	▪ Current latent demand need: 32
Rusk State Hospital	▪ Current bed count: 365 (325 after 7/2014) ▪ Current SPH bed need: 298 ▪ Projected SPH bed need: 337 ▪ 10-Yr Diff: *+12*	▪ Current community need: 71 ▪ Projected community need: 79	▪ Current latent demand need: 43
San Antonio State Hospital	▪ Current bed count: 302 ▪ Current SPH bed need: 316 ▪ Projected SPH bed need: 358 ▪ 10-Yr Diff: *+56*	▪ Current community need: 72 ▪ Projected community need: 83	▪ Current latent demand need: 45
Terrell State Hospital	▪ Current bed count: 288 ▪ Current SPH bed need: 335 ▪ Projected SPH bed need:363 ▪ 10-Yr Diff: *+75*	▪ Current community need: 107 ▪ Projected community need: 119	▪ Current latent demand need: 69
Potentially Unserved Areas	Waco / Dallas / Arlington ▪ Current SPH need:180 ▪ Projected SPH need: 193 Texas Panhandle (Amarillo) ▪ Current SPH need:58 ▪ Projected SPH need: 65 Montgomery / Harris County / Houston ▪ Current SPH need:202 ▪ Projected SPH need: 218	Waco / Dallas / Arlington ▪ Current community need:119 ▪ Projected community need: 134 Texas Panhandle (Amarillo) ▪ Current community need: 21 ▪ Projected community need: 23 Montgomery / Harris County / Houston ▪ Current community need: 165 ▪ Projected community need: 181	Waco / Dallas / Arlington ▪ Current unmet demand need: 68 Texas Panhandle (Amarillo) ▪ Current unmet demand need: 11 Montgomery / Harris County / Houston ▪ Current unmet demand need: 101

Global Themes

Over the course of this study, 11 key themes emerged across the five different assessment areas: infrastructure, real estate, care model, human capital, and community. These themes reflect the critical points around which the recommendations are structured and are supported by both qualitative and quantitative data. Additional detail and support for each key theme can be found in the following sections.

Infrastructure Themes

1. Aging facilities and infrastructure are functionally obsolete and are not conducive to current clinical, safety, quality, and workforce best practices.
2. Evolving consumer profiles and increases in aging and forensic populations are placing stress on existing facilities as they relate to the importance of appropriate and safe consumer cohorting.
3. The substantial number of abandoned and underutilized buildings on the SPH campuses diverts precious resources away from operational buildings, presents safety and security concerns, and represents a funding challenge related to demolition.
4. Multi-bedded rooms with four or more individuals per room are not reflective of current best practices.

Real Estate Theme

5. While most campuses have a large proportion of open spaces enabling access to nature and the outdoors, a large swath of many campuses is underutilized by consumers, visitors, and staff.

Care Model Themes

6. Individuals requiring behavioral health services in Texas lack an integrated continuum of care that seamlessly coordinates home, community, ambulatory, acute stabilization, and long-term management resources.
7. Inadequate linkages and coordination exist between the behavioral health network, substance abuse providers, criminal justice, and the medical system.
8. The current funding model for behavioral health in the state of Texas is focused on funding state-operated inpatient services. There is less focus and resource allocation directed toward community resources and evolving models of comprehensive integrated care management.

Human Capital Themes

9. Lack of professional staff in the workforce/applicant pool in rural areas of Texas place limitations on access, acute stabilization, and long-term management of consumers in these areas.

10. Current models of employee compensation, training, and staff development lag behind community offerings and create a competitive disadvantage with respect to recruitment and retention.

Community Themes

11. Many rural communities lack convenient access to acute assessment and stabilization programming due to poor proximity to behavioral health services, placing increased responsibility on local emergency departments and law enforcement agencies.

Key Recommendations

The next few years present Texas with a unique opportunity to transform the service delivery system for individuals with behavioral health needs across the State. Texas can build a system based on best practices that will support people with mental illnesses, provide the appropriate services and enable desired outcomes for individuals in the state with behavioral health needs.

The ten-year recommendations for SPHs focus on ensuring that individuals with mental illness in Texas receive the right care at the right place, at the right time, with the right resources. The recommendations support best practices in behavioral health, and the intent moving forward is that care delivery can be supported in a way that all Texans receive the most optimal care. Meaning, in the future, services aimed at serving individuals with mental illnesses will shift from an institutional model of care to one that is focused on the patient, leveraging all resources along the continuum. This ensures individuals will receive services and support that is person centric in their communities and as close to their home as possible. The concept of serving individuals in the right place mandates that all sites of service evolve their roles and scope of services to serve changing needs of individuals with varying mental illness diagnoses.

Key recommendations are divided into sections for Right Place, Right Care, Right Time, and Right Resources. In reviewing this section, it is important to keep in mind that these recommendations are not mutually exclusive and that implementing one recommendation in isolation may not have the desired optimal outcome. For example, actions related to increasing the number of beds to meet projected demand will need to take into account recommendations to update facilities to meet national standards of number of beds per room and consumers served per acre. Additionally, prior to implementing specific facility recommendations, it is further recommended that DSHS conduct an in-depth facility conditions assessment of the remaining eight sites to ensure that all sites are thoroughly evaluated in an equal manner. This ensures the most complete evaluation of all of facilities and will aid in determining urgency and prioritization of implementation.

Right Place

1. Deliver care to consumers in the “Right Place” by ensuring inpatient behavioral health services are available in locations convenient to the consumer. Projected bed capacity below assumes that the recommendations contained within this report will be implemented.
    a. <u>State Operated Beds: Observed Need.</u> To meet projected demand for state inpatient psychiatric services over the next ten years based on observed demand and population

growth, DSHS should plan to increase the capacity of its state psychiatric hospital beds to provide a total of 3,063 inpatient beds for psychiatric services.

b. Community-Operated Beds: Observed Need. To meet projected demand for community inpatient psychiatric services over the next ten years based on observed demand and population growth, DSHS should plan to partner with local community hospitals to provide a total of 1,135 inpatient beds for community psychiatric services. Projected demand for additional community-operated beds can be met in various ways, including contracted beds and/or locally supported beds.

c. Latent Need. The system will also require an additional 570 beds to address unmet need. It is assumed that none of these individuals will have a third party payer. It is difficult to determine how these beds should be allocated, given that this is a population that has not yet accessed care. For planning purposes, the market share assumptions set out in Exhibit 3-4 were used to allocate beds between state psychiatric hospitals and community hospitals. This analysis suggests there may be need for an additional 272 state-operated beds and an additional 298 community-operated beds.

2. Deliver care to consumers in the "Right Place" by seamlessly coordinating services along the behavioral health continuum in a manner best serving the needs of all constituency groups.

   a. Transition the responsibility for acute assessment and disposition determination to local mental health authorities and emergency departments with the goal of ending the practice of SPHs receiving consumers directly from community settings for acute assessment.

   b. Transition responsibility for initial inpatient stabilization and short-term inpatient admissions (under 14 days) for voluntary and involuntary civil admissions to community hospitals and/or psychiatric hospitals with appropriate inpatient behavioral health units. The goal would be to vastly decrease the SPH's role in this area, noting that specific specialized care is only available at the SPHs for the very acute consumers. This can be achieved by:

      i. Altering funding model to provide community hospitals with reimbursement for provision of initial inpatient stabilization and short-term admissions (under 14 days) for consumers without payment source.

      ii. Alternatively, contract inpatient beds for provision of initial inpatient stabilization and short-term admission services at specific community hospitals across the state of Texas.

   c. Transition role of SPHs to that of a tertiary regional referral center for the most complex consumers with behavioral health needs including:

      i. Voluntary and involuntary civil admissions requiring long-term inpatient management beyond the initial 14-day stabilization window.
      ii. Forensic consumers with complex behavioral issues.
      iii. Expanded scope of services offered to include all necessary therapies for appropriate consumers either at a SPH or in partnership with tertiary inpatient psychiatric programs in Texas.

d. Develop funding mechanism to encourage community hospitals to develop inpatient medical-psychiatric units to provide integrated care to consumers requiring simultaneous medical and psychiatric services, as well as inpatient dual diagnosis units to provide integrated care to consumers requiring simultaneous substance abuse and psychiatric services.

e. Transform long-term model of care for geriatric consumers with dementia and other cognitive disorders with a focus on partnering with long-term care facilities specializing in dementia care and establishing long-term care solutions within state SSLCs for consumers unable to locate community alternatives.

f. Support and enhance funding of local mental health authorities to support growth and development of partial hospitalization and day programming for consumers with behavioral health needs.

3. Deliver care to consumers in the "Right Place" by integrating behavioral health in primary care clinics and vice versa, facilitating interdisciplinary care delivery.

   a. Develop funding mechanism to encourage primary care centers to incorporate substance abuse and behavioral health care services in community primary care centers at sites including, but not necessarily limited to:
      i. Public Health Centers
      ii. Federally-Qualified Health Centers
      iii. Rural Health Centers
      iv. Mobile Health Clinics
      v. Homeless Shelters
      vi. Church/Faith-Based Clinics
      vii. Student (college/university) Health Centers

   b. Incorporate a behavioral health care manager and psychiatrist into the primary care setting. The care manager, with supervision from a psychiatrist, is responsible for tracking consumer progress with standard measures, providing follow-up to increase adherence and educating patients on tools for self-management. The primary care physician utilizes evidence-based algorithms to guide treatment.

4. Deliver care to consumers in the "Right Place" by expanding the technological infrastructure necessary to transition acute assessment services to community settings and community hospital emergency departments.

   a. Expand the reach of tele-health and/or tele-psychiatry so that it is available in other provider settings including emergency departments, rural areas, and other areas where access to psychiatric services may be limited.

   b. Establish tele-psychiatry host site at an academic medical center with a comprehensive behavioral health program to serve as the base center for tele-psychiatry services in Texas.

5. Deliver care to consumers in the "Right Place" by strengthening and expanding robust jail diversion programming to reduce over-reliance on criminal justice system and ensure access to the right services

a. Facilitate movement of forensic populations between the criminal justice system and behavioral health treatment through promotion of coordinated re-entry programs for jail and prison inmates needing behavioral health services upon release to the community. Improve collaboration with probation/parole to avoid non-behavioral health admission and coordination with behavioral health services in corrections including intake screening and valuation.

b. Expand existing forensic monitoring to facilitate earlier discharge and decrease readmissions to the SPHs and jails.

Right Care

6. Deliver the "Right Care" to consumers through strengthening the person centered recovery model of care.

    a. Transition DSHS to a "person first" model of service delivery where emphasis is placed on collaborating with local mental health authorities, community behavioral health providers, and other resources to ensure consumers have convenient access to all services necessary and to optimize care in the least restrictive setting and with the greatest amount of self-determination.

    b. Support continued growth and development of community resources to ensure consumers are able to access these services with the intention of reducing utilization of higher cost services such as emergency department, acute assessment and stabilization, and inpatient resources.

7. Deliver the "Right Care" to all consumers with behavioral health needs by establishing a self-directed consumer funding model for "non-traditional" services that prove beneficial to overall health and well-being.

    a. Expand funding strategies to provide consumers with funding/support for accessing the following services: health and wellness services, nutritional needs, housing, medications, transportation, education/vocational training.

8. Deliver the "Right Care" to consumers by expanding the use of peer support services to complement clinical care by licensed staff.

    a. Create a role for a peer support specialist to facilitate the transition from inpatient treatment to the community.

    b. Encourage the development of peer run crisis respite facilities to decrease the pressure on the medically driven acute crisis services.

    c. Establish community clubhouses to provide social support and facilitate partnerships with local businesses, housing, and other community services to help link consumers to housing and even supported employment.

9. Deliver the "Right Care" to consumers by seamlessly coordinating behavioral health services with medical care and substance abuse services.

    a. Provide annual funding to support continued growth and development of community substance abuse treatment programming.

b. Partner with local mental health authorities to incorporate substance abuse and primary care services in community behavioral health centers while ensuring consumers within SPHs have access to substance abuse services during hospitalization.

c. Improve interagency coordination and accountability:
   i. Create an Interagency Coordinating Committee to address cross-system issues, review regulations and incentives, and to establish common goals and approaches.
   ii. Development of policies and incentives that promote service integration and coordination and collaboration between agencies and services and across systems.

Right Time

10. Deliver care to consumers at the "Right Time" by providing access to on-demand access for services to reduce escalation.

    a. Replicate the model used in Bexar County between the University Health System and the Center for Health Care Services.

Right Resources

11. Aging facilities and infrastructure are functionally obsolete and are not conducive to current clinical, safety, quality, and workforce best practices.

(For campuses where the preliminary recommendation is for the replacement of a facility, the initial assumption is that the replacement would occur on the site of the existing SPH. However, these recommendations do not preclude the opportunity to replace the facility on a different site, while remaining within the same general service area. As such, there is flexibility within these facility recommendations to allow for further calibration and fine-tuning of the optimal location of any replacement. Further analysis would be warranted if alternate locations were considered, including the following key factors: Service Area, Economic Impact, Land, and Hospital Size)

    a. Based on an assessment of functional needs, projected bed requirements by service area and the facilities condition index, replacement facility construction is recommended for five SPHs: Austin State Hospital, North Texas State Hospital – Wichita Falls, Rusk State Hospital, San Antonio State Hospital, and Terrell State Hospital. Ongoing maintenance and renovation are recommended for the remaining five SPHs and the Waco Center for Youth.

    b. Due to the age of many of the buildings within the system and the impact on clinical functionality and maintenance costs, consideration should be given to gradual replacement across the state with new facilities that are capable of supporting contemporary behavioral health care models, have inherent flexibility to better adapt to shifts in the consumer profile, and embody the features of behavioral health care design current trends and best practices.

c. The age and nature of the existing facilities are generally not conducive to supporting ongoing population profile shifts, and therefore should be considered for replacement with more flexible physical accommodations.

d. Across the entire system, structures that have been deemed beyond reasonable repair, functionally obsolete, and not cost-effective to renovate should be demolished.

12. Develop facility design solutions within SPHs specialized for medically fragile, forensic, and behavioral consumers where appropriate, while maintaining other facilities designed to provide services to general consumer population.

    a. The system should move toward a higher percentage of private rooms or double-occupancy rooms. In order to achieve this while maintaining capacity, consideration should be given to increasing private room percentage through the replacement of facilities at targeted campuses.

13. Engage in a multi-pronged approach to generate funding to DSHS to support capital and operating expenditures across the system.

    a. Reduce the overall size of SPH campuses to a target size of one acre per eight to 12 staffed beds through sale or long-term lease of excess lands.

14. Continue processes to modernize technological infrastructure at all SPH campuses currently underway at many SPH sites.

    a. Improve network infrastructure to allow for future tele-health capabilities for educating community care providers and providing specialized care to remote individuals. Ensure this is in alignment with the Health Information Management (HIM) strategic plan.

    b. Add wireless networking and campus wide communication systems and ensure this is in alignment with the HIM strategic plan.

    c. Upgrade telecommunication systems to support new technologies

15. Where Facility Condition Indices (FCI) indicate that cost to maintain system deficiencies is well below the Current Replacement Value, upgrade and maintain infrastructure and systems when appropriate and necessary.

    a. Repair and/or upgrade exterior envelopes, i.e., cracked foundations, masonry tuck-pointing, roof replacements, and window replacements for longevity, safety and energy efficiency.

    b. Replace older interior finishes with more current materials, palettes, and textures to enhance quality of life environments of staff and care consumers.

    c. Construct central heating/cooling plants eliminating redundancy, increasing energy efficiency, and reducing maintenance footprint.

    d. Upgrade lighting fixtures and install automatic control systems.

    e. Repair/replace Air Handling Units and ductwork to reduce exfiltration and energy use. Install additional Variable Frequency Drives (VFD) and programmable controls.

f. Develop a campus energy manager position and measurable energy use reduction program.

g. Perform retro-commissioning on existing systems for optimal performance.

h. Provide accessible, barrier-free travel into/within facilities that are not currently ADA-compliant.

i. Perform protective device coordination study to improve reliability and arc-flash analysis to increase safety when maintaining electrical equipment.

j. Install fire suppression systems in buildings where appropriate.

k. Separate emergency power circuits into required branches in care areas.

16. Deliver care to consumers using the "Right Resources" by providing person centered recovery care coordinated by the local MHAs, leveraging local service via care & resource coordinators.

    a. Establish Care and Resource Coordinator role to include active coordination of all aspects of consumers with behavioral health needs including, but not necessarily limited to: wellness, nutrition, coping strategies, safety net services (housing, transportation, etc.), medical care services, substance abuse services, community behavioral health services, discharge planning and follow-up care for inpatient admissions

17. Deliver care to consumers using the "Right Resources" by responding to projected demand and ensuring Texas retains its existing behavioral health providers.

    a. Continue to examine compensation packages for direct care providers and support staff recognizing the importance of their role in the provision of behavioral health services at SPHs, mitigating the impact of market competition with the goal of moving compensation toward the 50th percentile relative to the local market.

    b. Continue annual continuing education/career development fund for appropriate employees to promote investment in professional development to benefit of SPHs.

    c. Establish loan-forgiveness programs for service commitments for difficult-to-fill positions.

    d. Fund additional mental health provider training programs (such as psychology and social work) to support expected workforce demands.

    e. Consider participation in H-1B visa program for difficult-to-fill licensed professional positions.

Section 4. Developing a Ten Year Vision

With a solid understanding of the current state strengths and opportunities identified, DSHS leadership embarked upon a collaborative working session with CannonDesign designed to inform the development of a ten-year vision for the agency. The process engaged stakeholders from across the behavioral health landscape in Texas and included: consumers, consumer advocates, clinicians, DSHS leadership, the criminal justice system, and a number of other organizations that work to advance behavioral health care in the state. A list of participating agencies is shown in Table 4-1.

Table 4-1: Agencies Participating in Collaborative Vision Working Session
▪ DSHS Leadership ▪ State Hospital Leadership ▪ Various Stakeholder Groups

During the day-long working session, participants engaged in a number of activities, facilitated by behavioral health experts at CannonDesign. The session began with a presentation of the current state assessment of behavioral health services in the SPHs. Participants were provided with a presentation highlighting global best practices in the delivery of behavioral health services with an emphasis on evolving models of care and increased performance and reduced utilization of inpatient services, favoring lower cost-of-care settings. With an understanding of the current state and an exploration of global best practices, the remainder of the working session was spent on an exploration of the needs of various constituents including consumers, family/support networks, care providers, and law enforcement with the intention of identifying the implicit, explicit, and latent needs of each group along the continuum of behavioral health care. To accomplish this, specific consumer scenarios were used to explore the nuances of different diagnoses and their corresponding needs.

The information gathered during the working session was combined with the current realities of the SPH system, the continuum of care for consumers with behavioral health needs in Texas, and an understanding of the evolution of the model-of-care and global best practices in order to develop the future-state vision for the next ten years. The vision developed focuses on ensuring consumers with behavioral health needs in the state of Texas receive: the right care, delivered in the right place, occurring at the right time, and being provided with the right resources.

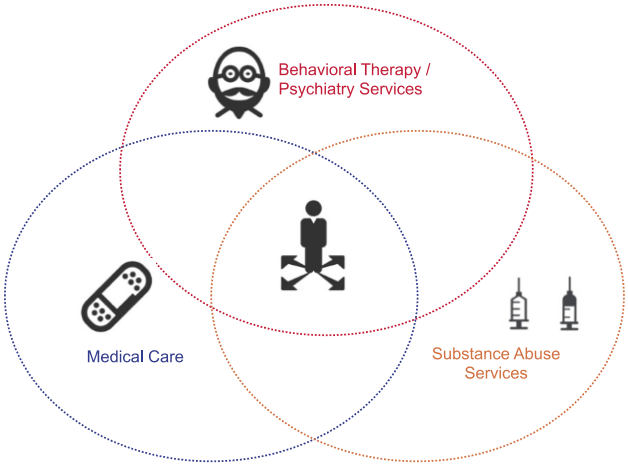
The Right Care

"The Right Care" at its core focuses on ensuring that consumers with behavioral health needs in Texas have access to and receive all services necessary along a continuum to ensure care has

been optimized in the least restrictive setting. Support and safety net services essential for the health and well-being of consumers should also be incorporated. This is the notion of a person centered recovery care model of care.

The person centered recovery care model of care understands that the condition of consumers with behavioral health needs cannot be optimized without attention to all aspects of their health and well-being. At the center is the assumption of a proactive model to address behavioral, wellness, medical, substance abuse, psychosocial, and basic survival needs, all in an integrated and coordinated manner.

The person centered recovery care model of care places an emphasis on supporting non-traditional services and needs such as wellness and fitness, nutrition and access to healthy foods, development of coping strategies, transportation to and from care and vocational activities, funding for educational and training programs that support gainful consumer employment, and housing support to prevent homelessness.



Also central to the person centered recovery care model of care is the recognition that many behavioral health consumers in Texas live with coexisting medical and/or substance abuse issues and that seamless coordination of access to and delivery of these services is necessary. The coordination of these services is about more than making sure different services providers are talking to one another. It is also about identifying opportunities to co-locate services, promoting simultaneous service delivery, integrating service delivery plans, and establishing funding to support needed services.

The Right Place

In the future, behavioral health services will shift from an institutional model of care to one that is focused on leveraging all resources along the continuum of care. This ensures consumers will receive services and support in their communities and as close to their home as possible. The concept of "The Right Place" mandates that all sites of service along the behavioral health care continuum rethink and evolve their roles and scope of services.

Home

Emphasis will be placed on ensuring consumers are able to continue living productive lives in the home environment of their choice, when possible. This is particularly important for child, adolescent, and geriatric consumers to demonstrate improved outcomes in home and residential environments. For many consumers, service delivery along the continuum of care can and will be best optimized by coordinating services for consumers while they remain in their homes.

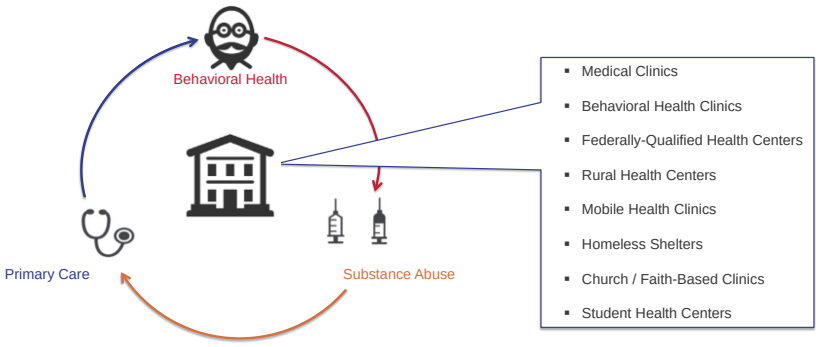
	Home	Virtual	Community	Community Hospital	SPHS	State SSLC	Long-Term Care
On-Going Management	✔	✔	✔				
Care and Service Coordination			✔	✔			
Acute Assessment & Intake				✔			
Acute Stabilization (length of stay ≤ 30 days)				✔			
On-going Management (length of stay > 30 days)				✔	✔		
Voluntary Admissions				✔	✔		
Involuntary - Civil				✔	✔		
IT Integration	✔	✔	✔	✔	✔	✔	✔
Involuntary - Forensic					✔		
Specialty Inpatient – Child & Adolescent	✔			✔	✔		
Specialty Inpatient - Geriatric				✔			
Specialty Long-Term Care - Geriatric	✔					✔	✔
Specialty Inpatient – Substance Abuse				✔	✔		
Specialty Inpatient – Medical - Psychiatric				✔			
Specialty Outpatient – Day Programs			✔				

Virtual

Virtual models of care are continuing their path forward. Internet and mobile phone-based technologies and care solutions are advancing early detection of the warning signs of acute decompensation and decompensation in-process while also supporting peer-to-peer interactions, medication compliance, and communication with care coordinators, support networks, and care providers. For consumers with behavioral health needs, the right place for service delivery will increasingly shift to virtual settings where on-demand services and real-time information can be provided to support care optimization.

Community Resources

Community resources will continue to be a mainstay for the delivery of behavioral health services to consumers in Texas. Leveraging the critical role of the local authorities and a wide range of other community care providers, the community will continue its emphasis on on-going management, care and service coordination, acute assessment, and post-inpatient follow-up and care coordination for consumers across the state.

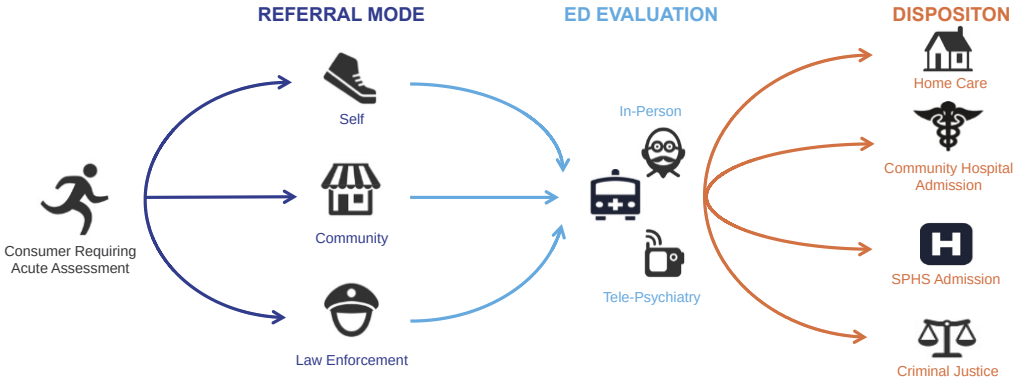


In addition, growth and development of partial hospitalization/day programming by community agencies will support the continued efforts to provide services in the least-restrictive, lowest-cost settings while avoiding inpatient admission where appropriate.

As a part of re-envisioning the role of community providers, it is important to revisit the concept of ensuring seamless coordination and integration of medical and substance abuse services into the model of care for consumers with behavioral health needs. A critical component to this vision will be to advance sites of care that deliver integrated services at the same physical location to ensure improved compliance and follow-up for consumers with complex co-existing medical and/or substance abuse needs. There are a number of potential locations for such integrated services and, depending on the community's need and profile, multiple sites could be targeted for integrated clinic models.

Community Hospitals

In the evolving model of care, community hospitals can expect to see some of the more important changes to their role in providing services to consumers with behavioral health needs. The consumer's engagement with community hospitals should begin at the point of requiring acute assessment services. If community agencies are unable to provide this service, consumers should be able to rely on their local emergency department to provide acute assessment services in coordination with community agencies and mobile crisis response teams, through in-house behavioral health clinicians, or through linkages to behavioral health facilities via tele-psychiatry services. Allowing consumers to count on emergency departments for acute assessment services will create a more convenient access point for acute services while reducing the burden on consumers and law enforcement to travel great distances for acute assessment services.



In addition to receiving acute assessment services at the emergency department, consumers should be able to count on community based inpatient psychiatric services regardless of their ability to pay or their funding status. Ensuring that civil consumers can receive short-term acute inpatient stabilization services closer to their home than is usually possible will promote better collaboration between inpatient and community providers while reducing the travel requirements for consumers and their support network.

State Psychiatric Hospitals

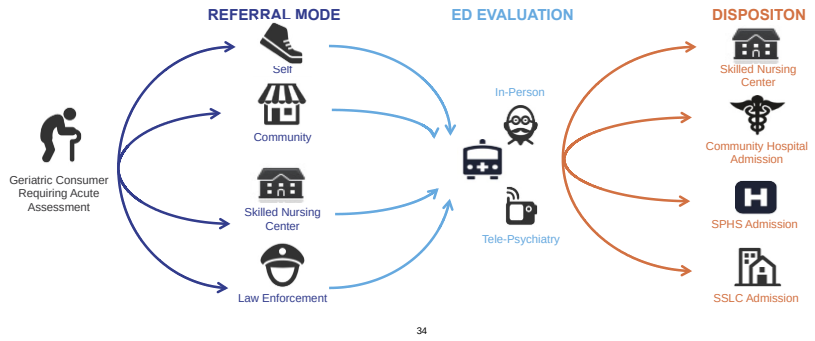
In ensuring care is delivered in the right place, the SPHs can also expect their role to evolve with the implementation of a new vision for service delivery. With local emergency departments providing acute assessment services, SPHs will end their practice of accepting consumers by walk-in, via law enforcement or transfer simply for acute assessment and disposition. In addition, the SPHs will experience a significant reduction in their role in providing acute inpatient stabilization services for civil consumers.

This evolution in scope of services will allow the SPHs to transition their role to provide care for only the civil consumers with the most complex and/or severe needs as well as specialty populations not cared for in community settings, including the forensic population. This evolution, consistent with the most forward-thinking behavioral health systems across the United States, will allow the SPH to serve as a regional resource center for their respective communities

State-Supported Living Centers

Ensuring the right care in the right place mandates that agencies involved in caring for consumers with behavioral health needs will collaborate and seek opportunities to establish new relationships with organizations that support the vision being advanced. In no situation is this opportunity greater than with geriatric consumers.

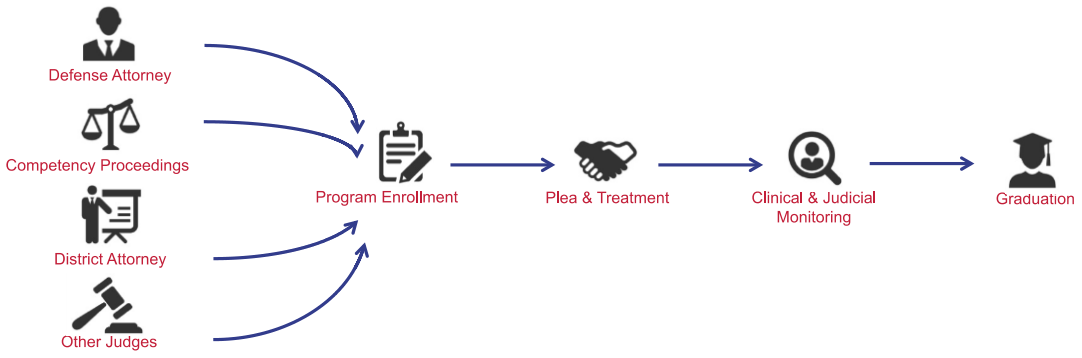
In many communities, geriatric consumers with evolving dementia are erroneously approached as consumers with behavioral health needs in need of acute and long-term psychiatric services. As dementia is not a psychiatric disorder, but rather a disorder of memory and cognition, these consumers are better served in environments accustomed to caring for these types of conditions. In the case of dementia care, the most appropriate environment for long-term care when community alternatives are not available would be state supported living centers (SSLCs). The Texas SSLCs have considerable experience and expertise in managing the behavioral and physical complications that are a natural progression of dementia for many consumers. Their philosophy of care and approach to consumer engagement will support a reduced reliance on inpatient psychiatric hospitalization for consumers with dementia.



Long-Term Care

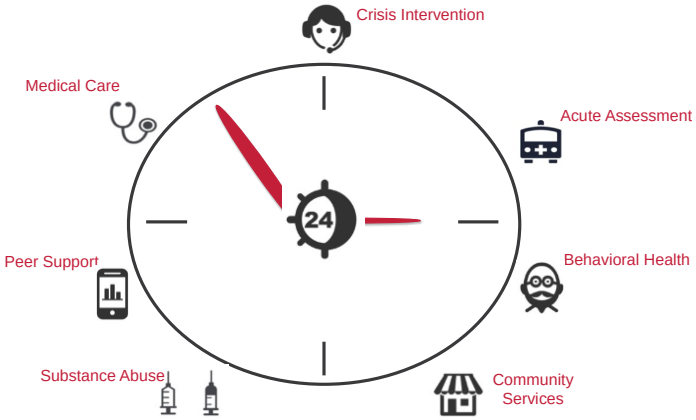
The long-term care community will continue to play a vital role for consumers with behavioral health needs in Texas. This is particularly the case for geriatric consumers with cognitive and memory impairments as well as consumers with lower levels of function who require daily support. While more institutional skilled nursing models of long-term care may be required by some consumers, many consumers will benefit from less restrictive models including assisted living facilities and family or group homes tailored to the unique needs of these consumers.

Another central component to ensure that consumers with behavioral health needs receive the right care in the right place is establishing comprehensive jail diversion programming (with the goal of offering these services state-wide). Jail diversion programs that link eligible defendants to long-term treatment and monitoring of their behavioral health problems are an alternative to incarceration and will reduce the burden on the criminal justice and prison systems while enabling eligible consumers to receive care in a less-restrictive yet appropriate setting.



The Right Time

Behavioral health issues can arise at any hour; which is why behavioral health care services should be provided on a 24/7 basis, not just during normal business hours. Central to a successful behavioral health model in Texas is the ability of consumers to receive services on-demand regardless of the time of day or day of week. Acceleration of access to services provides numerous benefits that elevate quality, increase satisfaction, and lower the overall cost of care, including reduced use of emergency department services, earlier detection and management of acute decompensation, and increased compliance with post-discharge plan of care.

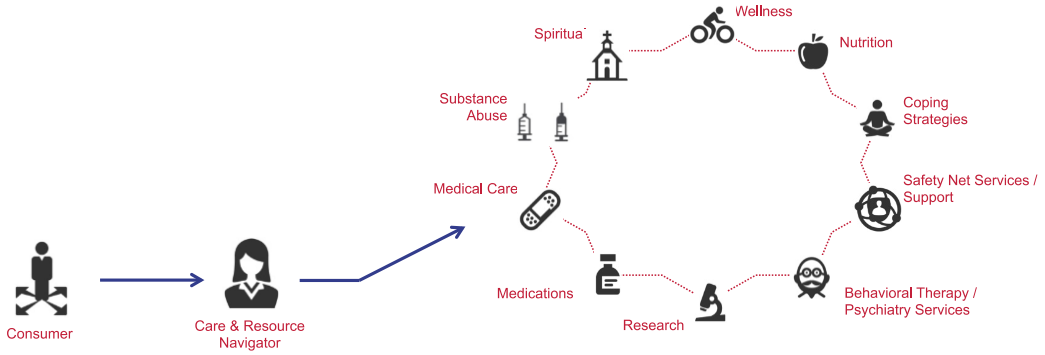


The Right Resources

Many consumers struggle with coordinating and accessing services across different agencies and sites. To ensure the right care is provided in the right place at the right time, many consumers require support in navigating the complexities of the system, funding to support care delivery, and accessing medications, safety net services, vocational training, housing, and other services. Returning to the person centered recovery care model, there is a need in Texas, as in other states, to rethink the role of the traditional behavioral health "case manager" with the migration toward a more robust navigation role, such as a Care & Resource Navigator.

Care & Resource Navigators offer consumers the opportunity to liaise with a single person whose sole responsibility is to ensure the consumer is receiving the right care in the right place at

the right time with the right resources regardless of where along the continuum it is needed. At their core, Care & Resource Navigators will seek to improve engagement in behavioral health care by addressing each consumer's individual barriers to care. In addition to improving outcomes and reducing reliance on more costly sites of care, the Care & Resource Navigators can also serve a critical education and support role to consumers by providing customized and real-time interventions based on each consumer's unique needs while providing positive reinforcement.



While rethinking the role of the case manager is an important component of ensuring the right resources, the future success of delivering behavioral health services to Texas consumers also rests on the ability of the entire system to meet future workforce demands. As the fastest growth state in the union with respect to absolute population growth, Texas's staffing challenges for behavioral health services will only be further stressed without a multi-pronged approach aimed at retaining existing staff while at the same time increasing the number of licensed behavioral health providers across the state, especially in more rural communities.

Section 5. Current and Future Demand Summary

The overall population in Texas is expected to grow 24 percent over the next ten years. In particular, people ages 18 to 64 will comprise the fastest growing age groups, driven by families migrating to Texas for work opportunities. Aging cohorts such as the 60+ age group will continue to expand, with 60+ females growing by 52 percent and 60+ males growing by 57 percent; this unique cohort of consumers has been proven to consume health care resources at a higher rate, given the accompanying prevalence in age-related chronic diseases and behavioral health conditions.

In addition to overall population changes, there have also been changes in the SPH consumer population. Over the past few years, an increase in the number of consumers with forensic commitments presenting at SPHs has compressed the availability of civil beds. This population, on average, has a longer length of stay than the civil consumer base, constraining bed availability. The number of consumers with forensic commitments is only expected to increase among individuals with behavioral health conditions in the future, thus further challenging the ability of the SPH system to care for those who are forensically-involved and to enable them to locate placement in the community. Moreover, consumers with medical complexities and co-occurring diagnoses are also on the rise in Texas. This population poses challenges to the SPH system as they require additional care and support with their comorbid conditions.

Current State Psychiatric Hospital Bed Capacity

The Department of State Health Services (DSHS) currently operates 2,463 beds across their 11 state psychiatric hospitals. These beds are broken out by legal status (civil and forensic) as well as age group (child/adolescent, adult, and geriatric). In addition to the beds located within state psychiatric hospitals, DSHS also contracts out 456 beds across 13 community settings resulting in a total of 2,919 beds owned or contracted by DSHS in Texas.

Exhibit 5-1 Current DSHS Bed Capacity

Legal Status	Age Group (except for Misc.)	Austin	Big Spring	El Paso	Kerrville	North Texas*	Rio Grande	Rusk	San Antonio	Terrell	Waco	Total
Civil	Child / Adolescent	30	0	7	0	24	0	0	30	35	78	204
	Adult	165	92	51	0	220	40	190	168	144	0	1,070
	Geriatric	66	0	0	0	33	0	28	20	79	0	226
	Total Civil	**261**	**92**	**58**	**0**	**277**	**40**	**218**	**210**	**258**	**78**	**1,500**
Forensic	Child / Adolescent	0	0	0	0	77	0	0	0	0	0	77
	Adult	38	78	16	202	286	15	107	84	30	0	856
	Geriatric	0	0	0	0	0	0	0	0	0	0	0
	Total Forensic	**38**	**78**	**16**	**202**	**363**	**15**	**107**	**84**	**30**	**0**	**933**
Miscellaneous Infirmary		0	22	0	0	0	0	0	0	0	0	22
	VA Contracted	0	8	0	0	0	0	0	0	0	0	8
	Total Miscellaneous	**0**	**30**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**30**
	Total Beds:	**299**	**200**	**74**	**202**	**640**	**55**	**325**	**302**	**288**	**78**	**2,463**

**North Texas is an aggregate of both the Wichita Falls and Vernon campus*

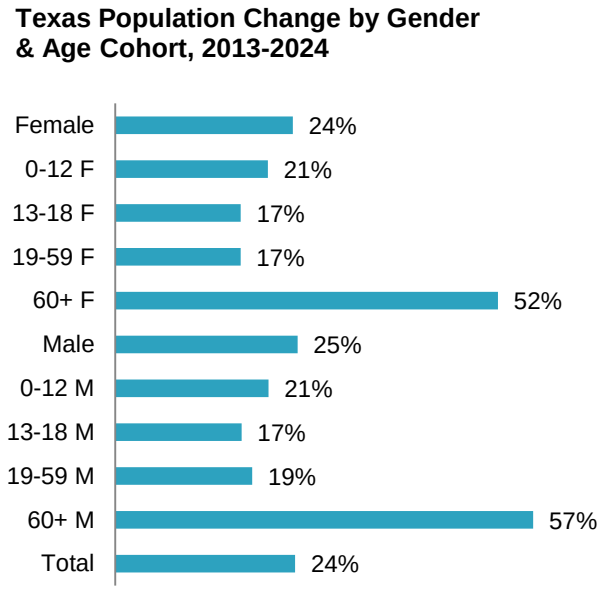
State-Contracted Beds: 456
Total DSHS Owned or Contracted Beds: 2,919

The changes in the general population and the expected increases in the population with forensic or civil commitments will continue to challenge the State of Texas and DSHS to provide the appropriate services that respond to the expected increases in demand for behavioral health services. Future bed need projections were developed in response to the defined ten-year vision for DSHS SPHs as described earlier in this report. The analysis indicates the type and quantity of beds needed to support the defined consumer population in 2014 and in 2024.

State of Texas Future Demographics

The rapid population growth is one of the major impact factors driving up the projected state psychiatric bed need in Texas by 2024. Texas's population is expected to outpace the average growth in the United States, with a growth rate of 24 percent by 2024. The over-60 age cohort is projected to comprise 21 percent of the population in the next ten years. Historic use rates indicate older age cohorts present with more medical complexities, thus a higher level of care and more resources are often required. Texas SPHs need to be prepared to address changes in the consumer demographics and respond to the exponential growth of the population.

Exhibit 5-2. Texas Population Change by Gender and Age Cohort, 2013 – 2024



Texas	2013	% Mix	2024	% Mix
Female	13,411,010	50%	16,364,835	50%
0-12	2,533,222	9%	3,056,821	9%
13-18	1,141,451	4%	1,335,484	4%
19-59	7,288,876	28%	8,526,407	26%
60+	2,447,461	9%	3,716,123	11%
Male	13,253,565	50%	16,525,825	50%
0-12	2,634,729	10%	3,181,688	10%
13-18	1,205,397	5%	1,411,655	5%
19-59	7,378,180	28%	8,744,986	26%
60+	2,035,259	7%	3,187,496	10%
Total	26,664,575	100%	33,160,660	100%

Note: 2024 Population Projection is from the Texas Population Projections Program Data, produced by The Texas State Data Center and The Office of the State Demographer. The 2013 and 2024 population projections reflect the 1.0 scenario.

Ten Year Forecast

With over 26 million residents today and rapid growth projecting over 30 million residents in 2024, forecasting the demand for SPH services is critical to ensure that DSHS can support the delivery of the best, most appropriate care for individuals with behavioral health needs. To gain a better understanding of Texas and its future consumer population, CannonDesign worked with HHSC and DSHS to develop a customized forecast, driven off of population projections from the

Office of the State Demographer, State of Texas inpatient data, and subsequent projected needs for services.

The forecast was broken into two high level components: observed demand and latent demand. Observed demand is composed of consumers utilizing behavioral health services today. Latent demand represents consumers who are in need of behavioral health services but are unable to access the necessary care.

Observed Demand Methodology

The following six steps outline the methodology for determining current needs under the recommended model of care based on the observed demand for services, and then projecting those needs in 2024 based on population growth and related demographic trends. These projections do not include unmet need, which is described in the following section.

Step 1: Build a Service Base

Through the assistance of DSHS, CannonDesign accessed Q3 2013 State of Texas hospital admissions data from the Texas Health Care Information Collection. These data were cleansed to parse out only psychiatric admissions and determine those that also suffered from a co-occurring substance abuse disorder or were medically complex. The resulting admissions were annualized.

Step 2: Create Consumer Groups

With the appropriate consumer population gathered, the admissions were then broken into 48 distinct groups based on the following factors:

Exhibit 5-3. Consumer Group Variables

Factors	Variables
Legal Status	• Forensic • Civil
Age	• Child / Adolescent (Age: Under 18) • Adult (Age: 18-64) • Geriatric (Age: 65 and Older)
Length of Stay	• Less than 7 days • 7 to 14 days • Greater than 14 days
Admission Type	• Elective • Involuntary
Comorbidities	• Medically Complex • Substance Abuse • Eating Disorder

In addition to these factors, each consumer group was then further parsed out by their payer source:

Exhibit 5-4. Payer Groups

Payer Group	Payers
Private	Central Certification PPO POS EPO HMO Indemnity Insurance Automobile Medical Blue Cross /Blue Shield Commercial Insurance Liability Liability Medical Workers Comp Health Claim

Payer Group	Payers
Public, CMS	Medicare Part A Medicare Part B Medicaid HMO Medicare Risk
Public, Other	CHAMPUS Title V Veteran Administration Plan Other Federal Program Other Non-Federal Program
Indigent / Charity	Indigent / Charity
Forensic	Forensic Legal Status
Unknown	Invalid

Step 3: Determine Appropriate Market Share

After the patient groups were created, CannonDesign worked with DSHS to determine what percent of each group was appropriate to be cared for within the state psychiatric hospital regardless of payer group, based upon the DSHS vision. See below for the full breakout of consumer groups and proposed DSHS share:

Exhibit 5-5. DSHS Proposed Market Capture by Consumer Group

Legal Status	Age Group	Admission Type / Comorbidities	Length of Stay (Days)		
			<7	7 - 14	14+
Forensic	Child/Adolescent	All	3%	7%	90%
	Adult	All	3%	7%	90%
	Geriatric	All	3%	7%	90%
Civil	Child/Adolescent	Involuntary Admission	5%	20%	75%
		Voluntary Admission	5%	10%	75%
		Medically Complex	0%	0%	0%
		Substance Abuse	0%	10%	80%
		Eating Disorder	0%	25%	90%
Civil	Adult	Involuntary Admission	10%	20%	95%
		Voluntary Admission	5%	20%	90%
		Medically Complex	0%	20%	90%
		Substance Abuse	0%	10%	70%
Civil	Geriatric	Involuntary Admission	10%	10%	10%
		Voluntary Admission	5%	10%	10%
		Medically Complex	10%	10%	10%
		Substance Abuse	5%	10%	10%

Step 4: Calculate Current Proposed State Operated Bed Need

Applying the proposed shares of the consumer groups to be seen in the state psychiatric hospital to their aggregate length of stay and factoring in a 90 percent target occupancy allowed CannonDesign to determine that 2,715 beds would be needed to support these volumes today. This equates to approximately 56 percent of the 2014 total psychiatric inpatient population in Texas.

Exhibit 5-6. 2014 SPH and State of Texas Bed Need by Payer Group

	State Psychiatric Hospital		State of Texas		% of Market
	Bed Need	Bus Mix	Bed Need	Bus Mix	Seen in Community
Total Beds	2,715	100%	4,855	100%	56%
Indigent/Charity	1,416	52%	2,340	48%	61%
Public, CMS	234	9%	881	18%	27%
Public, Non-CMS	152	6%	231	5%	66%
Private	144	5%	547	11%	26%
Forensic	*770*	*28%*	*856*	*18%*	*90%*

Step 5: Determine Remaining Community Operated Bed Need

DSHS realizes state psychiatric hospitals will only be supporting a portion of the market. There will be a need for beds in the community to provide care for the consumers that will not require care in a state psychiatric hospital. Once the proposed state psychiatric hospital share of the market was captured, a bed need was calculated based on the remaining days. A target occupancy rate of 90 percent results in a need of 2,140 community operated beds to provide care for the remaining 44 percent of the behavioral health inpatient market. This figure includes beds for medically indigent and forensic patients, as well as those with a third party payer.

Exhibit 5-7. 2014 Community and State of Texas Bed Need by Payer Group

	Community		State of Texas		% of Market
	Bed Need	Bus Mix	Bed Need	Bus Mix	Seen in Community
Total Beds	2,140	100%	4,855	100%	44%
Indigent/Charity	924	43%	2,340	48%	39%
Public, CMS	647	30%	881	18%	73%
Public, Non-CMS	79	4%	231	5%	34%
Private	403	19%	547	11%	74%
Forensic	*86*	*4%*	*856*	*18%*	*10%*

Excluding the portion of the market supported by public and private third-party payers, the remaining 924 indigent beds and 86 forensic beds constitute the 1,010 beds that will require community inpatient care supported by state and/or local dollars. As was previously stated, DSHS contracts beds in the community to better serve consumers. Currently, DSHS is funding 456 community-operated beds.

Step 6: Projecting Future Needs

To project volumes forward, use rates were calculated based on the State Inpatient Data as well as the most recent U.S. Census estimates for 2014 at the Age and Gender level. These use rates

were then held constant and applied to blended population growth scenarios from the Office of the State Demographer. These blended rates reflect approximately 75 percent of Scenario 0.5 and 25 percent of Scenario 1.0. Utilizing the same average length of stay, proposed SPH market share, and 90 percent target occupancy, a future need of 3,063 beds for state psychiatric hospitals and 1,135 community beds for forensic and indigent care was calculated.

Exhibit 5-8. 2024 SPH and State of Texas Bed Need by Payer Group

	State Psychiatric Hospital		State of Texas		% of Market
	Bed Need	Bus Mix	Bed Need	Bus Mix	Seen in Community
Total Beds	3,063	100%	5,463	100%	56%
Indigent/Charity	1,499	49%	2,525	46%	59%
Public, CMS	263	9%	988	18%	27%
Public, Non-CMS	171	6%	260	5%	66%
Private	162	5%	614	11%	26%
Forensic	*968*	*32%*	*1,076*	*20%*	*90%*

Exhibit 5-9. 2024 Community and State of Texas Bed Need by Payer Group

	Community		State of Texas		% of Market
	Bed Need	Bus Mix	Bed Need	Bus Mix	Seen in Community
Total Beds	2,400	100%	5,463	100%	44%
Indigent/Charity	1,026	43%	2,525	46%	41%
Public, CMS	725	30%	988	18%	73%
Public, Non-CMS	89	4%	260	5%	34%
Private	451	19%	614	11%	74%
Forensic	*108*	*5%*	*1,076*	*20%*	*10%*

Notes:Totals may not tie out to the sum of their parts due to rounding. For example, the indigent/charity beds (1,026) and forensic beds (108) sums to 1,134 while throughout the report, the rounding up of these bed figures ties out to 1,135.

Latent Demand Methodology

The Observed Demand analysis took into consideration the patients receiving care today. However, it did not capture consumer population in the State of Texas that have a Serious Mental Illness (SMI) but are not getting the care they need. The Latent Demand analysis strives to calculate bed needs for the portion of the population in Texas that needs inpatient behavioral health services but is unable to access care. There are two distinct groups that constituted this demand; civil population suffering with an SMI with unmet needs and individuals in the corrections system suffering from SMI.

Attempting to determine the bed numbers for a population that is not actively present is difficult. Compounding this difficulty is the enormity and diversity of the State of Texas which hindered the ability to attain statistically appropriate sample sizes from community focus groups or inquiries into community hospitals. To circumvent these issues, CannonDesign relied heavily on national prevalence and use rate statistics from the Substance Abuse and Mental Health Services Administration's (SAMHSA) 2012 National Survey on Drug Use and Health.

Unmet Needs

As stated above, the Unmet Needs component of Latent Demand is the civil population with an SMI that need inpatient care but are unable to access it. The ability for DSHS to proactively meet this group's need aids in reducing stresses on the health care system where these patients would otherwise present as a last alternative, namely emergency departments. The methodology for calculating the bed need to support this consumer group is detailed in Exhibit 5-10 and results in a current estimated bed need of 401.

Exhibit 5-10. Unmet Needs Bed Count Methodology

Unmet Need	2014
Texas Population	26,623,655
Percent of Texas Population that is Incarcerated	6.0%
Non-Incarcerated Texas Population	25,026,236
Percent of Population with Serious Mental Illness (SMI)[1]	4.1%
SMI Population	1,026,076
Percent of SMI Population w/ Perceived Unmet Need for Treatment[1*]	38.6%
SMI Population w/ Perceived Unmet Need for Treatment	396,065
Percent of Population w/ SMI that Felt the Need for Treatment[1**]	82.8%
SMI Population that Felt the Need for Treatment	327,942
Percent of SMI Cases Requiring IP Services[1]	6.0%
SMI Population that would Utilize IP Services	19,677
Community Average Length of Stay[2]	6.7
Community Days	131,833
Planned Occupancy Rate	90%
Community Bed Need	**401**

(1) SAMHSA. 2012 National Survey on Drug Use and Health: Mental Health Detailed Tables. http://www.samhsa.gov/data/NSDUH/2k12MH_FindingsandDetTables/MHDT/NSDUH-MHDetTabsTOC2012.htm

(2) Q3 State of Texas Inpatient Admissions Data; CannonDesign analysis 2014.

**Unmet Need for Mental Health Treatment/Counseling is defined as a perceived need for treatment that was not received.*

***Excludes the 17.2 percent of SMI population with Unmet Need for Treatment whose reason for not receiving care was "Could handle the Problem without Help."*

Unmet Criminal Justice System Demand

The Corrections component of Latent Demand is the bed need to support consumers in the corrections system with an SMI. This population has a higher prevalence of SMI than the general population, requiring a separate calculation. The assumption here is that if a current inmate with an SMI had been identified in a timely fashion and received the appropriate care, they could have avoided incarceration. However, like the general population, a small percentage of these individuals will require inpatient care. The bed need to support this population for 2014 is 78.

Exhibit 5-11. Corrections Bed Count Methodology

Admissions	2014	Source Notes
Individuals Added to the Corrections System each Year	77,363	Includes all individuals in prison and state jails
Estimated Prevalence of SMI Among Incarcerated	10%	Treatment Advocacy Center Briefing Paper (1)
Estimated Number of Incarcerated Population w/ SMI	7,736	calculation
% of Population w/ SMI requiring IP MH Services	6.0%	2012 National Survey on Drug Use and Health: Mental Health Findings(2)
Estimated Incarcerated Population w/ SMI Requiring IP MH Services	464	calculation
ALOS for DSHS Population	55 Days	calculation
Total Forensic Days	25,530	Calculation
Bed Need to Accommodate Waiting @ 90%	**78**	calculation

(1) *Treatment Advocacy Center Briefing, "Jails and Prisons," April 2009 http://www.treatmentadvocacycenter.org/storage/documents/jails_and_prisons--apr_09.pdf*

(2) *2012 National Survey on Drug Use and Health Mental Health Findings, Table 1.29B http://www.samhsa.gov/data/NSDUH/2k12MH_FindingsandDetTables/MHDT/NSDUH-MHDetTabsSect1peTabs2012.htm#Tab1.37B*

The methodology laid out in Exhibit 5-11 calculates a bed need for consumers who would normally be admitted to the corrections system. The methodology in Exhibit 5-12 is to anticipate the bed needs of the inmates with an SMI who are being discharged from a corrections facility. The bed needs to support this patient group for 2014 is 91 beds.

Exhibit 5-12. Corrections (2014 Discharges) Bed Count Methodology

Discharges	2014	Source
Individuals Discharged from Corrections System each Year	90,429	Includes all individuals in prison and state jails
Estimated Prevalence of SMI Among Incarcerated	10%	Treatment Advocacy Center Briefing Paper (1)
Estimated Number of Incarcerated Population w/ SMI	9,043	calculation
% of Population w/ SMI requiring IP MH Services	6.0%	2012 National Survey on Drug Use and Health: Mental Health Findings(2)
Estimated Incarcerated Population w/ SMI Requiring IP MH Services	543	calculation
ALOS for DSHS Population	55 Days	calculation
Total Forensic Days	29,841	Calculation
Bed Need to Accommodate Waiting @ 90%	**91**	calculation

**2012 average sentence length for Texas inmates is 6.1 years per Texas Department of Criminal Justice, by planning year 2024 the individuals being discharged would have theoretically already been accounted for in the "Admissions" bucket.*

(1) Treatment Advocacy Center Briefing, "Jails and Prisons," April 2009 http://www.treatmentadvocacycenter.org/storage/documents/jails_and_prisons--apr_09.pdf

(2) 2012 National Survey on Drug Use and Health Mental Health Findings, Table 1.29B http://www.samhsa.gov/data/NSDUH/2k12MH_FindingsandDetTables/MHDT/NSDUH-MHDetTabsSect1peTabs2012.htm#Tab1.37B

Total Bed Needs (State-Operated Beds and Community-Operated Beds for Indigent Care)

As described above, the total bed need has three parts: observed need for state-operated beds, observed need for community-operated beds for indigent care, and latent or unmet need. The previous sections detail the methodology used to estimate the bed need for each of these components, based on the assumption that the primary role of the state psychiatric hospitals will be to provide forensic and tertiary care. Combining the SPH proposed share of the market, indigent community-operated need, and the latent need results in a total projected bed need of 4,768 beds by the year 2024. These figures do not include beds for the community market share supported by public and private third party payers.

Exhibit 5-13. Total Bed Need Summary State-Operated Beds and Community-Operated Beds for Indigent Care

	2014	2024
Total Bed Need (State Operated Beds and Community Operated Beds for Indigent Care)	**4,295 Beds**	**4,768** Beds
Observed Need	**3,725 Beds**	**4,198** Beds
State Operated	2,715 Beds	3,063 Beds
Community Operated (Indigent)	924 Beds	1,026 Beds
Community Operated (Forensic)	86 Beds	108 Beds
Current Latent Need: State Operated	**272 Beds**	*Latent need assumed to be addressed in 2014*
Corrections (Admissions)	70 Beds	
Corrections (Discharges)	82 Beds	
Unmet Need	120 Beds	
Current Latent Need: Community Operated	**298 Beds**	
Corrections (Admissions)	8 Beds	
Corrections (Discharges)	9 Beds	
Unmet Need	281 Beds	
Current State-Funded Capacity	**2,919 Beds**	
State Operated	2,463 Beds	
Community Operated	456 Beds	
Difference Between Current State-Funded Capacity and Total Bed Need (State Operated Beds and Community Operated Beds for Indigent Care)	**1,376**	**1,849**

Notes: All forensic beds are assumed to be indigent. Current latent need does not factor in population growth.

Bed Need by Service Area

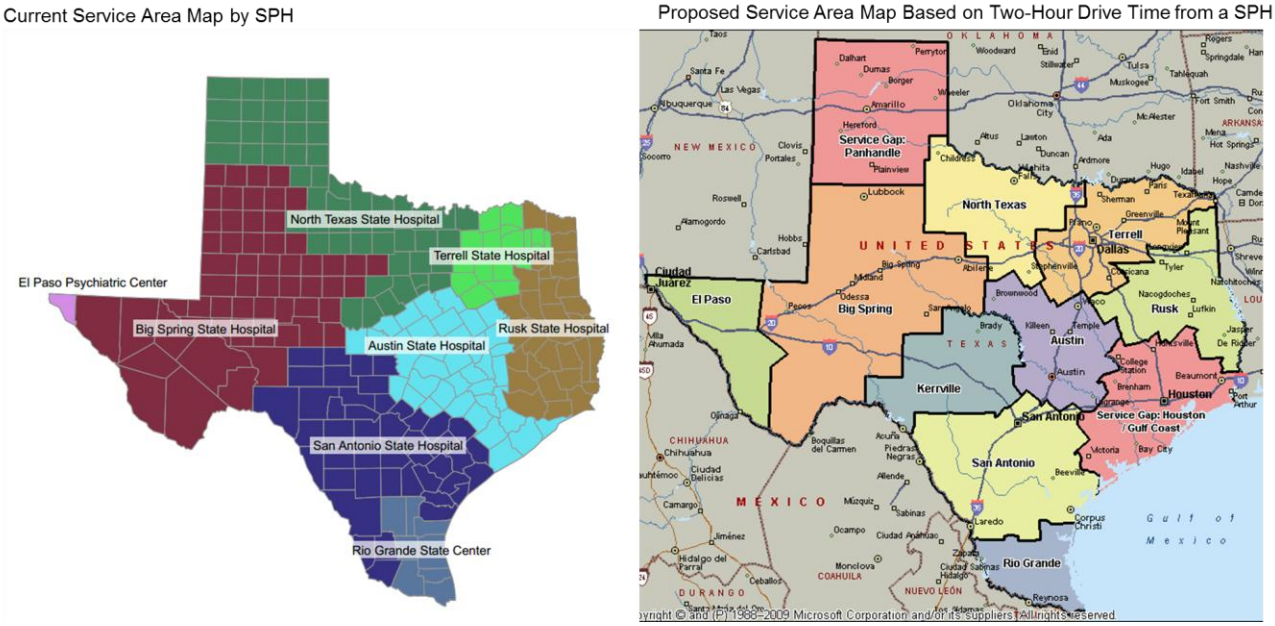
Currently, nearly half of the individuals served by the SPHs are placed in a facility over 100 miles away from their county of origin. To better align with the future vision of right care at the right time and right place, the service area of each SPH was redefined as a two-hour drive time

from each facility (see Exhibit H-7, Appendix H). Projected bed needs were broken down by county and reallocated according to the new service area definitions.

The exceptions to the two-hour drive time service area were:

- North Texas State Hospital – Vernon Campus, the state's maximum security forensic facility, which currently serves forensic consumers across the entire state. Thus, the two-hour maximum drive time has not been utilized as a measure of this facility's geographic appropriateness.
- Child and adolescent beds were allocated according to the current breakout of beds at Austin State Hospital, El Paso Psychiatric Center, North Texas State Hospital – Wichita Falls, San Antonio State Hospital and Terrell State Hospital. Forensic adolescent beds were allocated to North Texas State Hospital – Vernon.
- Beds currently staffed at Waco Center for Youth were assumed to serve as residential beds for child and adolescents and not appropriate for inpatient psychiatric care.
- Projected bed need along the north-south Interstate 35 corridor from Austin to San Antonio was split between the Austin State Hospital and San Antonio State Hospital. Additionally, a potentially unserved region in the Laredo and Acuna areas were identified. These projected bed needs were allocated to San Antonio State Hospital.
- Three additional potentially unserved areas were identified (with limited state psychiatric hospital capacity or contracted bed availability) – Montgomery County, Texas Panhandle and Waco/Dallas/Arlington area. For these unserved areas, it is recommended that additional community purchased beds or additional state psychiatric facilities be considered to address demand.

Exhibit 5-14. Proposed New Service Area Map



To determine facility recommendations based on projected need, a number of factors that play a role in whether an existing facility should be maintained, replaced, abandoned, or otherwise augmented, were considered and analyzed collectively. Three elements specifically were looked at per site:

- Planning Assessment – are the SPH facilities functionally adequate?
- Bed Need Assessment – are the SPH facilities appropriately located to support future demand?
- Physical Assessment – are the SPH facilities no longer cost-effective to maintain?

Viewed in isolation, each of these factors could lead to a slightly different set of conclusions. As they each play an important role in the ability to deliver adequate behavioral health care, each factor was organized into a consolidated matrix that concludes with a preliminary recommendation for each individual site (see Exhibit 5-15). In general, the findings and factors were found to align closely with one another at each site (e.g., functionally obsolete campuses and facilities were usually accompanied by high capital and deferred maintenance costs, and vice versa). Also, the bed analysis and demand forecast indicate that no current state hospital is presently located in a sub-optimal area.
For campuses where the preliminary recommendation is for the replacement of a facility, the initial assumption is that the replacement would occur on the current site of the existing state hospital. However, these recommendations do not preclude the opportunity to replace the facility on a different site, while remaining within the same general service area. As such, there is flexibility within these facility recommendations to allow for further calibration and fine-tuning of the optimal location of any replacement. Further analysis would be warranted if alternate locations were considered, including the following key factors:

- **Service Area**: Any shift in location of an existing state hospital will impact the two-hour drive time perimeter. While this could have minimal impact if a new site was relatively close to the existing campus, a more significant shift would likely influence (positively or negatively) the overall number of consumers within two hours of any one facility. For example, if San Antonio State Hospital were replaced on a new site further south, this would potentially improve access for consumers in Laredo and other communities in the Rio Grande Valley. It would also simultaneously have an impact on consumers living between San Antonio and Austin, as they would now potentially shift to being within Austin's service area, or perhaps fall outside of the two hour perimeter of either facility.
- **Economic Impact:** Any shift in location of an existing state hospital must be considered with respect to the impact on a community's local economy. As stated in the real estate portion of this report, rural communities such as Rusk, Terrell, and Wichita Falls would be severely impacted by any move of the facility away from those areas. Alternatively, a shift in location in San Antonio or Austin would have much less local impact, given the highly urban nature of these cities.
- **Land:** The ability to replace a facility on its existing site has the obvious benefit of knowledge of the site's attributes, and no cost for land acquisition. Consideration of any new location would need to consider the availability, suitability, and cost of land for

purchase. For example, Rusk State Hospital currently sits on a campus that includes amenities that may not be readily available elsewhere (including significant greenspace, lake with campground amenities, etc.).

- **Hospital Size:** Theoretically, a replacement hospital could be any size (bed capacity). However, there is a practical bed capacity range that will permit beneficial economies of scale and efficiencies. As outlined in the facility benchmark portion of this report, the average bed capacity is 300, with a range generally spanning 200 to 350 beds. While it may be worth considering splitting a large state hospital into two smaller campuses to decrease drive times for consumers and their families, this always needs to be weighed against those ideal bed capacity ranges (along with ongoing operational and staffing costs which tend to increase with more numerous, yet smaller, facilities).

Exhibit 5-15. Bed Need Assessment by Facility and Facility Recommendations

State Hospital Campus	Planning Assessment Are the campus and its facilities functionally adequate to support contemporary behavioral health care?	Bed Need Assessment Is the campus optimally located to support consumer demand now and into the future? Optimal location defined as two hours drive time from SPH[3][4][7]	Physical Assessment Has the facility reached a point where renovation and maintenance costs provide poor return on investment?[5]	Facility Recommendations
Austin State Hospital	▪ Primary consumer buildings date to the 1950s; child and adolescent structures were built in 1973 ▪ Historically significant building dates to the 1850s ▪ Aging infrastructure is old and is poorly suited to support contemporary care ▪ Campus is extensive and many consumer destinations are located in different buildings	▪ Current bed count: 299 ▪ Current SPH bed need: 314 ▪ Projected SPH bed need: 346 ▪ 10-Yr Diff (current to projected): *+47* Note: Civil adult beds split between San Antonio and Austin. Drive times extended slightly >2 hrs ▪ Current community need: 180 ▪ Projected community need: 200 ▪ Current 2014 latent demand need: 85	2004 Assessment ▪ Austin State Hospital - $13.8M in capital and deferred maintenance funding needs ▪ 22% in Critical condition ▪ 27% in Poor condition ▪ 24% in Fair condition ▪ 27% in Good condition ▪ Overall FCI = 0.14 (Poor condition) ▪ Average FCI for Primary Consumer Buildings only = 0.12	**Replacement Facility** Replace facility at Austin State Hospital site: 350 bed facility ($175M) [2]
Big Spring State Hospital	▪ Primary activity and therapy building is adequate (built in 1992) ▪ Primary consumer buildings date to the 1950s; some renovation has occurred to improve functionality ▪ Campus is moderately spread out (inpatient, activity, and admin. spaces are in different buildings)	▪ Current bed count: 200 ▪ Current SPH bed need: 160 ▪ Projected SPH bed need:185 ▪ 10-Yr Diff (current to projected): *(15)* Note: Unserved need from Amarillo split between Big Spring and Wichita Falls ▪ Current community need: 59 ▪ Projected community need: 69 ▪ Current latent demand need: 28	2004 Assessment ▪ Big Spring State Hospital - $12.6M in capital and deferred maintenance funding needs ▪ 39% in Critical condition ▪ 23% in Poor condition ▪ 19% in Fair condition ▪ 19% in Good condition ▪ Overall FCI = 0.20 (Poor condition) ▪ Average FCI for Primary Consumer Buildings only = 0.12	**Maintain and Renovate** Continue periodic renovation and ongoing maintenance
El Paso Psychiatric Center	▪ Newest campus in system (built in 1996) ▪ Only campus with a single building	▪ Current bed count: *74* ▪ Current SPH bed need: 92 ▪ Projected SPH bed need: 101 ▪ 10-Yr Diff (current to projected): *+27* ▪ Current community need: 45 ▪ Projected community need:51 ▪ Current latent demand need: 15	2004 Assessment ▪ El Paso State Hospital - $259K in capital and deferred maintenance funding needs ▪ 0% in Critical condition ▪ 0% in Poor condition ▪ 0% in Fair condition ▪ 100% in Good condition ▪ FCI = 0.04 (Good condition)	**Maintain & Add Capacity** Continue periodic renovation and ongoing maintenance

State Hospital Campus	Planning Assessment **Are the campus and its facilities functionally adequate to support contemporary behavioral health care?**	Bed Need Assessment **Is the campus optimally located to support consumer demand now and into the future? Optimal location defined as two hours drive time from SPH[3][4][7]**	Physical Assessment **Has the facility reached a point where renovation and maintenance costs provide poor return on investment?[5]**	Facility Recommendations
Kerrville State Hospital	▪ Primary consumer building is adequate (Ross Building, built in 1994) ▪ Other buildings are much older, though they are primarily used for administrative and support functions	▪ Current bed count: 202 ▪ Current SPH bed need: 169 ▪ Projected SPH bed need: 212 ▪ 10-Yr Diff (current to projected): *+10* Note: Adult civil beds reallocated to new proposed facility to serve the Waco area ▪ Current community need: 61 ▪ Projected community need: 70 ▪ Current latent demand need: 27	2004 Assessment ▪ Kerrville State Hospital - $10.8M in capital and deferred maintenance funding needs; ▪ 24% in Critical condition ▪ 16% in Poor condition ▪ 12% in Fair condition ▪ 48% in Good condition ▪ Overall FCI = 0.19 (Poor condition) ▪ Average FCI for Primary Consumer Buildings only = 0.10	**Maintain and Renovate** Continue periodic renovation and ongoing maintenance
North Texas State Hospital – Wichita Falls	▪ Primary consumer buildings date to the 1920s and 1930s and are poorly suited to support contemporary care ▪ Campus is extensive and many consumer destinations are located in different buildings ▪ Care units are in several different buildings	▪ Current bed count: 288 ▪ Current SPH bed need: 241 ▪ Projected SPH bed need: 267 ▪ 10-Yr Diff (current to projected): *(21)* Note: Unserved Amarillo need split between Big Spring and Wichita. Some civil bed capture from Vernon ▪ Current community need: 77 ▪ Projected community need: 87 ▪ Current latent demand need: 40	2004 Assessment ▪ NTSH - Wichita - $28.6M in capital and deferred maintenance funding needs; ▪ 37% in Critical condition ▪ 43% in Poor condition ▪ 10% in Fair condition ▪ 10% in Good condition ▪ Overall FCI = 0.24 (Poor condition) ▪ Average FCI for Primary Consumer Buildings only = 0.30	**Replacement Facility** Replace facility at Wichita Falls site: 250 bed facility ($123M) [2]
North Texas State Hospital – Vernon [1]	▪ One consumer building and the primary activity / therapy buildings are adequate (built in 1989 and 1996) ▪ Adolescent program (+/-75 beds) is moving to Victory Field site, opening up capacity and renovation opportunities on site ▪ Campus is moderately spread out (inpatient, activity, and admin. spaces are in different	▪ Current bed count: 351 (279 after adolescent beds are moved) ▪ Current SPH bed need: 264 factoring out adolescent beds ▪ Projected SPH bed need: 322 factoring out adolescent beds ▪ 10-Yr Diff (current to projected): *+29* factoring out adolescent beds Note: As the only maximum security SPH, consumer origin is spread across the state.	2014 Assessment ▪ NTSH – Vernon - $20.9M in capital and deferred maintenance funding needs ▪ 24% in Critical condition ▪ 48% in Poor condition ▪ 6% in Fair condition ▪ 22% in Good condition ▪ Overall FCI = 0.23 (Poor condition) ▪ Average FCI for Primary Consumer	**Maintain and Renovate** Continue periodic renovation and ongoing maintenance

State Hospital Campus	Planning Assessment Are the campus and its facilities functionally adequate to support contemporary behavioral health care?	Bed Need Assessment Is the campus optimally located to support consumer demand now and into the future? Optimal location defined as two hours drive time from SPH[3][4][7]	Physical Assessment Has the facility reached a point where renovation and maintenance costs provide poor return on investment?[5]	Facility Recommendations
	buildings)	Maximum forensic volumes will continue to be consolidated at Vernon. Adolescent beds will be moved to Victory Field Site ▪ Current community need: 13 ▪ Projected community need: 16 ▪ Current latent demand need: 4	Buildings only = 0.23 2004 Assessment ▪ NTSH – Vernon - $5.9M in capital and deferred maintenance funding needs; FCI = 0.12 (Poor condition) ▪ 10% in Critical condition ▪ 45% in Poor condition ▪ 30% in Fair condition ▪ 15% in Good condition	
Rio Grande State Center	▪ Primary behavioral health building is adequate (Wayne Potter Building, built in 1991) ▪ The presence of the recently renovated outpatient building (Building 500) provides opportunities for improved integration of primary and behavioral health care ▪ Ancillary buildings are older (1950s) and are candidates for renovation or replacement, though some of these are utilized for SSLC functions	▪ Current bed count: 55 ▪ Current SPH bed need: 63 ▪ Projected SPH bed need: 70 ▪ 10-Yr Diff (current to projected): *+15* ▪ Current community need: 21 ▪ Projected community need: 23 ▪ Current latent demand need: 32	2004 Assessment ▪ Rio Grande - $5.5M in capital and deferred maintenance funding needs; ▪ 30% in Critical condition ▪ 13% in Poor condition ▪ 22% in Fair condition ▪ 35% in Good condition ▪ Overall FCI = 0.18 (Poor condition) ▪ Average FCI for Primary Consumer Buildings only = 0.09[6]	**Maintain and Add Capacity** Continue periodic renovation and ongoing maintenance
Rusk State Hospital [1]	▪ Primary consumer buildings date to between the 1920s and 1970s, and are poorly suited to support contemporary care ▪ Campus is extensive and many consumer destinations are located in different buildings ▪ Care units are in several different buildings ▪ Historically significant building dates to the 1880s	▪ Current bed count: 365 (325 after 7/2014) ▪ Current SPH bed need: 298 ▪ Projected SPH bed need: 337 ▪ 10-Yr Diff (current to projected): *+12* Note: Accommodates portion of need from Montgomery / Harris Counties ▪ Current community need: 71 ▪ Projected community need: 79 ▪	2014 Assessment ▪ Rusk State Hospital - $29.2M in capital and deferred maintenance funding needs ▪ 21% in Critical condition ▪ 48% in Poor condition ▪ 15% in Fair condition ▪ 16% in Good condition ▪ FCI = 0.24 (Poor condition) ▪ Average FCI for Primary Consumer	**Replacement Facility** Replace facility at Rusk site: 350 bed facility ($167M) [2]

State Hospital Campus	Planning Assessment Are the campus and its facilities functionally adequate to support contemporary behavioral health care?	Bed Need Assessment Is the campus optimally located to support consumer demand now and into the future? Optimal location defined as two hours drive time from SPH[3][4][7]	Physical Assessment Has the facility reached a point where renovation and maintenance costs provide poor return on investment?[5]	Facility Recommendations
		▪ Current latent demand need: 43	Buildings only = 0.15 2004 Assessment ▪ Rusk State Hospital - $16.3M in capital and deferred maintenance funding needs; FCI = 0.19 (Poor condition) ▪ 15% in Critical condition ▪ 27% in Poor condition ▪ 10% in Fair condition ▪ 48% in Good condition	
San Antonio State Hospital [1]	▪ Primary consumer buildings date to between the 1930s and 1970s, and are poorly suited to support contemporary care ▪ Campus is extensive and many consumer destinations are located in different buildings (significant distance between two primary consumer zones) ▪ Care units are in several different buildings	▪ Current bed count: 302 ▪ Current SPH bed need: 316 ▪ Projected SPH bed need: 358 ▪ 10-Yr Diff (projected to current): *+56* Notes: Civil adult beds split between San Antonio and Austin. Drive times extended slightly >2 hrs. Unserved need from Laredo and Acuna also allotted to San Antonio ▪ Current community need: 72 ▪ Projected community need: 83 ▪ Current latent demand need: 45	2014 Assessment ▪ San Antonio State Hospital - $54.3M in capital and deferred maintenance funding needs ▪ 80% in Critical condition ▪ 20% in Poor condition ▪ 0% in Fair condition ▪ 0% in Good condition ▪ Overall FCI = 0.53 (Critical condition) ▪ Average FCI for Primary Consumer Buildings only = 0.48 2004 Assessment ▪ San Antonio State Hospital - $15.0M in capital and deferred maintenance funding needs; FCI = 0.14 (Poor condition) ▪ 19% in Critical condition ▪ 26% in Poor condition ▪ 28% in Fair condition ▪ 26% in Good condition ▪	**Replacement Facility** Replace facility at San Antonio site: 350 bed facility ($175M) [2]

State Hospital Campus	Planning Assessment Are the campus and its facilities functionally adequate to support contemporary behavioral health care?	Bed Need Assessment Is the campus optimally located to support consumer demand now and into the future? Optimal location defined as two hours drive time from SPH[3][4][7]	Physical Assessment Has the facility reached a point where renovation and maintenance costs provide poor return on investment?[5]	Facility Recommendations
Terrell State Hospital	▪ Primary adult consumer buildings and administrative support buildings date to between the 1920s and 1970s and are poorly suited to support contemporary care ▪ Campus is extensive and many consumer destinations are located in different buildings ▪ Adolescent and Geriatric buildings are newer than the remainder of campus (built in 1985), but represent a small portion of overall site	▪ Current bed count: 288 ▪ Current SPH bed need: 335 ▪ Projected SPH bed need:363 ▪ 10-Yr Diff (current to projected): +75 Note: Accommodates portion of need from Waco area ▪ Current community need: 107 ▪ Projected community need: 119 ▪ Current latent demand need: 69	2004 Assessment ▪ Terrell State Hospital - $24.9M in capital and deferred maintenance funding needs ▪ 48% in Critical condition ▪ 28% in Poor condition ▪ 15% in Fair condition ▪ 9% in Good condition ▪ Overall FCI = 0.18 (Poor condition) ▪ Average FCI for Primary Consumer Buildings only = 0.29	**Replacement Facility** Replace facility at Terrell State Hospital site: 350 bed facility ($167M) [2]
Waco Center for Youth	▪ Largest and most central consumer building is adequate (Brazos Building, built in 1998) ▪ Other residential buildings are candidates for renovation or replacement ▪ Campus is moderately spread out (residential, activity, and admin. spaces are in different buildings)	▪Current bed count: 78 residential	2004 Assessment ▪ Waco Center for Youth - $2.1M in capital and deferred maintenance funding needs ▪ 20% in Critical condition ▪ 11% in Poor condition ▪ 16% in Fair condition ▪ 53% in Good condition ▪ FCI = 0.11 (Poor condition) ▪ Average FCI for Primary Consumer Buildings only = 0.10	**Maintain** Continue periodic renovation and ongoing maintenance
Potentially Un-served Areas		Waco / Dallas / Arlington ▪ Current SPH need:180 ▪ Projected SPH need: 193 ▪ Current community need:119 ▪ Projected community need: 134 ▪ Current unmet demand need: 68 Note: Portion of volumes accommodated at Terrell	n/a	**Waco / Dallas / Arlington** New facility in the Waco / Dallas / Arlington area: 200 bed facility ($108M) [2] **Amarillo** Pursue community purchased bed strategy

State Hospital Campus	Planning Assessment Are the campus and its facilities functionally adequate to support contemporary behavioral health care?	Bed Need Assessment Is the campus optimally located to support consumer demand now and into the future? Optimal location defined as two hours drive time from SPH[(3)(4)(7)]	Physical Assessment Has the facility reached a point where renovation and maintenance costs provide poor return on investment?[(5)]	Facility Recommendations
		Texas Panhandle (Amarillo) ▪ Current SPH need:58 ▪ Projected SPH need: 65 ▪ Current community need: 21 ▪ Projected community need: 23 ▪ Current unmet demand need: 11 Note: Bed need accommodated at Big Spring and NTSH - Wichita Falls Montgomery / Harris County / Houston ▪ Current SPH need:202 ▪ Projected SPH need: 218 ▪ Current community need: 165 ▪ Projected community need: 181 ▪ Current unmet demand need: 101		and/or utilize existing SPH closest to consumer origin (NTSH - Wichita Falls and Big Spring) **Houston** Continue community purchased bed strategy and/or utilize existing SPH closest to consumer origin (Rusk)

(1) Three facilities – Rusk State Hospital, North Texas State Hospital Vernon, and San Antonio State Hospital – were analyzed in greater detail than the others, including onsite interviews and tours. These facilities include a greater level of detail within the overall analysis and evaluation of current conditions relative to planning, functionality, and physical assessment. Prior to moving forward with any of the specific facility recommendations in the matrix above, our initial suggestion would be to visit and analyze the remaining 8 sites to ensure that any and all nuances and inputs are captured.

(2) Replacement facility costs are based on the scalable prototype model included in the report. Replacement facilities also include bed capacity expansion capability – refer to the prototype design detail included in Section 8.

(3) The optimal location, as defined by a maximum two-hour drive time, represents a difference from current service region definitions utilized by DSHS (current service regions include areas that are in excess of the target two-hour drive time).

(4) North Texas State Hospital – Vernon Campus is the state's maximum secure forensic facility and serves patients across the entire state. Thus, the two-hour maximum drive time has not been utilized as a measure of this facility's geographic appropriateness.

(5) The Facility Condition Index (FCI) values reflect all analyzed structures on a given campus. In determining the relative impact of physical infrastructure condition on the preliminary recommendation, consideration was given to whether structures utilized specifically by consumers were individually better or worse off than the overall average.

(6) The primary consumer building at Rio Grande State Center is the Wayne Potter Building (#515). The 2004 CAFM assessment data does not include all systems for this building and includes a site improvement value that covers the entire campus. These two factors would artificially raise this building's FCI when viewed in isolation from the remainder of the campus. Therefore the FCI listed for this individual building is an interpolation from these anomalies.

(7) While it is difficult to predict the clinical needs of a population that has not accessed care, it is likely that a portion of the unmet need may be forensically committed or require teritiary care in a state-operated hospital.

Section 6. Key Global Themes

Over the course of this study, 11 key themes emerged across the five different assessment areas– infrastructure, real estate, care delivery, current state workforce analysis, and community need and impact. These themes reflect the critical points around which the recommendations are structured and are supported by both qualitative and quantitative data.

Infrastructure Themes

Theme 1: Aging facilities and infrastructure are functionally obsolete and are not conducive to current clinical, safety, quality, and workforce best practices.

Within the system and across the 11 hospital sites, the newest buildings were constructed between 10 and 25 years ago. However, these "newer" structures tend to be in the minority, as the vast majority of building stock dates between the 1930s and 1970s. El Paso Psychiatric Center is a key exception, with its single building being constructed in the mid-1990s. Other notable exceptions include one of the inpatient buildings at North Texas State Hospital (NTSH)–Vernon, the adult and adolescent therapy/ activity buildings at NTSH–Vernon, the main inpatient building at Rio Grande State Center, the main inpatient building at Kerrville State Hospital, the therapy/activity building at Big Spring State Hospital, and one of the inpatient buildings at Waco Center for Youth.

From the standpoint of the ability to optimally support contemporary behavioral health care, the older buildings have reached a point of functional obsolescence. In their time, the physical footprints and layouts were no doubt well-suited to serve models of care in the middle of the twentieth century, using available building practices and technology. Renovations made over time have served to minimize the impact of aging on these buildings, but there is a limit to how far renovation can go before certain systemic features simply cannot be overcome. Some of the key systemic challenges observed include:

- Adequate visibility of consumers from a convenient and strategically located staff position is often not practical (or not possible) given the footprints of these older buildings. At times, additional staff is required to adequately supervise resident spaces.

- The physical space available within an existing footprint is often insufficient, resulting in inadequate area for on-unit activity and programming space for consumers, or staff support space to best operate a unit.

- Most bedrooms do not include provisions for ensuite washrooms, and in many cases, washrooms consist of multi-stall layouts that do not support privacy or dignity. The ability to renovate a building to convert multi-stall washrooms into individual ensuite washrooms is generally not possible in these older facilities without significant disruption and most importantly, further loss of usable program area.

- Building materials and products used in the middle of the twentieth century tend to be "hard" and "cold" (including concrete block walls, small window openings, and

institutional protective metal screens on windows). Coupled with the age of these facilities, the general aesthetic environment is often not normalizing or de-stigmatizing.

- Across the entire system, there are a wide variety of building layouts and unit configurations, resulting in the general inability to standardize an approach to improvement. Every renovation attempt is unique, and what may work well in one building on one campus, may not be feasible (or desirable) in another building on the same campus, let alone another campus.

- Interconnection between inpatient units is generally poor, resulting in limited or difficult ability to move between units (often requiring outdoor travel). This condition makes it difficult to adapt to census shifts, when a unit reaches capacity, there is no means to extend that unit even temporarily. Additionally, the ability for staff to move between units and provide cross coverage is hampered in part by this limited connectivity. Sharing of physical resources is also more challenging.

- Risks associated with ligature points, materials that can be weaponized, and vandalism is evident in many older facilities in the system. This is due in large part to the types of materials and products available decades ago, and while some of these items can (and have been) replaced through renovation, some are intrinsic to the buildings, making any retrofit application impractical, infeasible, or cost prohibitive.

With respect to the physical structures and their general condition, remaining lifespan, and systems quality, the majority of the issues witnessed during the physical assessments pertained to cosmetic issues rather than inherent structural problems. Stated another way, the majority of buildings appear to have sufficient lifespan that should allow them to continue to remain occupiable provided ongoing maintenance and recurring upgrades are executed. However, the physical assessment has revealed that there are considerably more items that require maintenance or upgrade relative to the last assessment completed approximately ten years ago. This indicates that the cost to maintain and repair these facilities is increasing, which is attributable to their age.

A second critical observation made relative to the maintenance of physical structures is that they are generally “operated until failure”. Each of the campuses toured generally suggested that buildings were well-maintained, but major system upgrades was not occurring, leading to gradual failure. This failure is leading to very high terminal replacement costs that could be avoided through more frequent replacement of system components. The “operate until failure” model often leads to the need to abandon a building if funds are not immediately available to keep a structure occupiable (see related theme below regarding vacant buildings).

Additional Information

Renovations have been ongoing at the various SPH sites over time. However, superintendents and facility management staff have acknowledged that these renovations can only go so far to mitigate ligature, weaponization, and vandalism risks associated with the type of building materials utilized in many of the oldest facilities. In addition, the intrinsic nature of these structures’ footprints, load-bearing systems, floor-to-floor heights, and plumbing locations often

result in unavoidable and undesirable conditions that simply cannot be remedied by renovation efforts.

The following plan diagram illustrates some of the issues that are present in an outdated physical footprint of an inpatient unit. This example is from Rusk State Hospital, though the issues shown can be found at many sites throughout the system, and across different buildings on each individual campus.

Rusk State Hospital – partial plan of the Nueces / Cypress complex, illustrating some of the challenges presented by the footprint of the building

Theme 2: Evolving consumer profiles and increases in aging and forensic populations are placing stress on existing facilities as they relate to the importance of appropriate and safe consumer cohorting.

Over the past several years, the system has seen a significant increase in the percentage of consumers requiring forensic provisions and services at various hospital sites. In addition, the projected increase in people who are older that require behavioral health care and services will further impact consumer profiles across the state. These populations have unique needs and present different challenges that are placing pressure on staff as they attempt to provide appropriate care within the existing facility infrastructure.

Existing building layouts are generally not flexible enough to handle the current changes in the profile of individuals requiring behavioral health services. These changes are placing a great deal of strain on the operations of many facilities. Those that serve both civil and forensic consumers are often forced to co-locate these populations due to the inability of the existing buildings to adequately shift and adapt to episodic census spikes. In addition, these populations represent additional challenges that existing buildings insufficiently support, including the need for increased visibility, accessibility/clearance, and space to minimize crowding. In many ways, the challenge presented by this evolving resident profile is particularly hampered by the prevalence of multi-bedded rooms and the outdated infrastructure identified in the other key themes in this section.

Additional Information

Attempting to accommodate civil and forensic consumers within existing facilities, coupled with the trend towards higher percentages of forensic consumers in particular, was cited as the most significant challenge presently facing some facilities. The following table indicates the consumer profile at Rusk State Hospital as of the second quarter of 2014, representing a significant increase in the percentage of forensic consumers over the past decade.

Rusk: Consumer Profile	
Forensic	**66%**
46B Ext'd MH Charges Pending	30%
46B Ext'd MR Charges Pending	<1%
46B.073F Restoration	15%
46B.073M Restoration	3%
Insanity Defense MH Ext'd	18%
Civil	**34%**
Court-Ordered Temp MH	10%
Court-Ordered Extended MH	3%
Renewed Court-Ordered Ext MH	15%
OPC – Chem Dep	<1%
OPC – MH Services	5%

**Source: Rusk Demographics Information as of 5/29/2014 (provided by RSH)*

Theme 3: The substantial number of abandoned and underutilized buildings on the SPH campuses diverts precious resources away from operational buildings, presents safety and security concerns, and represents a funding challenge related to demolition.

On many campuses, some of the building stock has either been vacated, or is currently underutilized. Vacant buildings create a number of issues and challenges in particular, including the ongoing cost required to keep the facility standing (while said building provides no

functional value in its vacant condition). Vacated structures are also subject to failure and inability to reoccupy if building systems are not kept operational. The location of a vacant building can also lead to increased inefficiencies in on-site travel, as they become non-destinations that may lie along the path between two occupied buildings. Many vacant buildings have deteriorated significantly, creating unsafe conditions for staff and consumers (i.e. staff often must search vacant buildings when a resident elopes). Lastly, vacant buildings tend to deteriorate more quickly and accelerate the negative aesthetic imagery associated with older structures (in some cases, abandoned structures occupy locations that are very prominent and visible to visitors or consumers).

Over time, the different sites have kept buildings well maintained and operational. However, as stated earlier the maintenance approach has generally been one of "operate until failure," rather than one that seeks recurring upgrade and replacement. The result of this approach is that buildings tend to reach a point of critical failure. Without a large and rapid injection of capital at the time of failure, these buildings may no longer be safe for occupancy and may need to be vacated.

Additional Information

Buildings that have been vacated due to acute failure may create an immediate challenge when clinical care is directly impacted. At Rusk State Hospital, the system failure in one of the consumer buildings resulted in an immediate need to relocate care. The structure can no longer be safely occupied due to physical damage incurred as a result of the lack of conditioned air.

On campuses where physical structures are underutilized or unoccupied, but remain functional and capable of occupancy, stakeholders have questioned whether there are opportunities to house other related state health care programs in these buildings.

North Texas State Hospital (Wichita Falls campus) – vacant/underutilized buildings shown in pink

Theme 4: Multi-bedded rooms with four or more individuals per room are not reflective of current best practices.

All facilities within the system operate with multi-bedded rooms, and very few sites are able to limit the occupancy to only two consumers per room. Single/ private bedrooms are very rarely found in the system, and generally only occur via purposeful occupancy reduction of a room capable of serving more than one resident (which in turn takes one or more beds out of use thereby reducing bed capacity). Many sites operated with five or six consumers per bedroom.

As stated in the Best Practices/ Benchmarking presentation (available in the separate attachment, Appendix D), behavioral health facilities constructed over the past 10 to 15 years have moved to a single occupancy/ private bedroom model. Where private bedrooms have not been practical, and in some cases not desirable, double-occupancy has been the maximum. Lowering bedroom occupancy, and in particular moving to a private room model, results in less noise and sleep disruption, creating a better physical health condition and higher likelihood of participation in daytime therapy and treatment. Single occupancy rooms also increase overall privacy and dignity

for the resident, resulting in a more normalized environment. Private rooms also help to decrease opportunities for resident on-resident aggression/ violence.

At some facilities, site leadership indicated that programs were underway, or petitions were sought from system governance, for a reduction in bed capacity. In particular, five and six-bedded rooms were being targeted for reduction to three or four-bedded rooms in an effort to reduce crowding and create a more manageable environment that is both therapeutic and safe.

Additional Information

The following table illustrates the percentage of private or double-occupancy rooms at several of the facilities included in the Best Practices/ Benchmarking presentation. The trend is overwhelmingly headed towards private rooms, and in no case were occupancies any greater than two consumers per room.

Benchmarked Facility	Percent Private Rooms	Percent 2-Bed Rooms	Year Completed
Central Regional Psych. – North Carolina ***(C/F)***	100%	0%	2008
Worcester State Hospital – Massachusetts ***(C/F)***	100%	0%	2012
Eastern State Hospital – Kentucky ***(C/F)***	35%	65%	2012
Juravinski Center – Ontario ***(C/F)***	98%	2%	2014
Waypoint Forensic Center – Ontario ***(F)***	100%	0%	2014

**C – Facility cares for civil consumers*

F *– Facility cares for forensic consumers*

Theme 5: Real Estate Theme

While most campuses have a large proportion of open spaces enabling access to nature and the outdoors, a large swath of many campuses is underutilized by consumers, visitors, and staff.

Across the system, all but one site are designed with a "campus" approach, consisting of multiple buildings on a large plot of land (El Paso Psychiatric Center is the exception). These large campuses include both positive and negative attributes with respect to care delivery and operations. The campus approach and site size offers significant access to natural daylight and outdoor space, often within a pastoral setting that is conducive to extending treatment and therapy to the exterior environment. The use of outdoor space in extending the therapeutic platform is characteristic of contemporary best practice in behavioral health care, and is therefore an advantage for the majority of these hospitals. In addition to this generalization, many sites include unique amenities that capitalize on their specific context and how the large sites are utilized. For instance, some campuses include access to campsites, farms (with animal or pet therapy), horse stables, lakes, running tracks, and the creation of an outdoor therapy "village square."

In contrast to the benefits afforded by the significant property sizes, the manner in which individual buildings are arranged on these sites creates some operational challenges. On nearly all campuses, the primary resident environment (sleeping rooms, daytime lounges, dining rooms) is located in buildings that are separate and distinct from major treatment/ therapy functions such as fitness rooms, gymnasia, art therapy, music therapy, workshops, group rooms, canteens, beauty shops, clothing stores, movie theaters, etc. This physical separation places an operational strain on the staff in that travel distances are lengthened, consuming additional time needed to move back and forth between destinations. In many cases, movement between destinations may be limited by weather conditions (extreme heat, cold, or rain), mobility challenges for individuals in wheelchairs, or security restrictions for individuals who do not have privileges to leave their resident building. On some campuses, the proximity of treatment/therapy buildings is relatively close to resident buildings, minimizing this impact. However, other sites include considerable distance between these functions, exacerbating the operational tax.

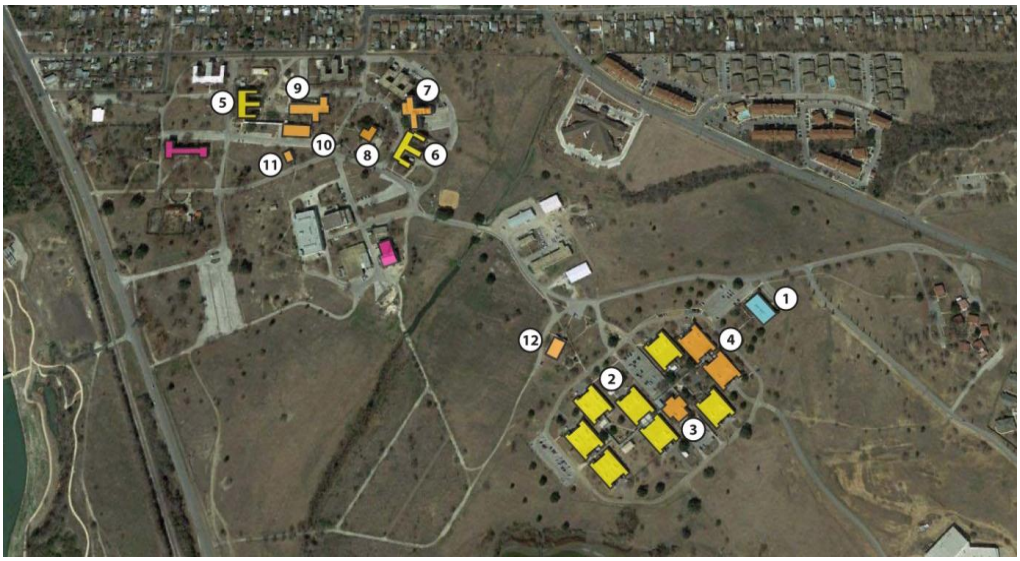
In addition, the distribution of goods, supplies, and utilities is made more difficult by the physical distance between various buildings on a campus. The nature of having several individual buildings also results in an increase in the quantity of entries/exits, contributing to elevated security and control risks.

Additional Information

Based on the facilities included in the Best Practices/ Benchmarking presentation, a campus "right size target" of one acre per eight to twelve beds is generally sufficient for accommodating all of the functional needs for a psychiatric hospital. This includes land for buildings, parking, functional outdoor space, and general "buffer" landscaping. The following table illustrates the current campus size of the three toured facilities and the target size if there were only one acre per eight to twelve beds (using ten acres as the average).

Campus	Current Acreage	Current Beds	Benchmark Acreage (1 acre per 8-12 beds)
Rusk*	102	325	33.5
NTSH - Vernon	64	351	35.1
San Antonio	200	302	30.2

**Excludes the Big Lake tract north of Route 69*



San Antonio State Hospital - two distinct resident zones separated by significant distance (typical of many state hospital campuses)

Bond Indebtedness

Additionally, bond indebtedness of the existing properties needs to be carefully examined. Bond indebtedness is a debt that is secured by an issued bond with the monies received to be used for corporate purposes. Upon review of current debt data supplied by HHSC for the SPHs (as of 28 February 2014), there is $131.3 million in debt obligations across all 14 campus locations, including the Central Office. The following provides results of the analysis performed under this contract. The scope of effort was limited to a review, therefore further recommendations needed by the Texas HHSC would likely require legal counsel services to provide an opinion on these matters.

- Most of the indebtedness indicated within the data provided by HHSC (84.6 percent for the SPHs) is attributable to Capital Construction General Obligation (G.O.) bonds. G.O. bonds are a type of municipal bond that are typically guaranteed by the full faith and credit of the issuing municipality. They are not typically collateralized against specific real estate. It is unknown if the G.O. bonds actually encumber the properties.

- If the SPHs are encumbered by bond debt that debt would not necessarily impact their marketability for sale. There could be a positive effect, a negative effect, or no effect at all. Two pieces of information are needed to make that determination:

    - The current market values of each property must be determined. In this scenario, any sales proceeds would be applied first to the bond holders (and any other lien holders), and the State would receive the remainder of the sales proceeds. If the amount of debt exceeds the value of the properties, then the State would take a loss on the sale and have to pay the difference to the debt holders from some other revenue source.

- The terms of all of the loans/bonds against the SPHs must be determined. It is assumed that there are no private industry debt obligations on the respective assets.

In order to determine how the bond indebtedness would affect the State's ability to generate revenue via the sale of underutilized excess land, several legal questions must be answered, review of all of the bond issuance statements and other loan documents conducted, and appraisals and highest and best use analyses of each facility performed. The legal services necessary are outside the scope of this contract.

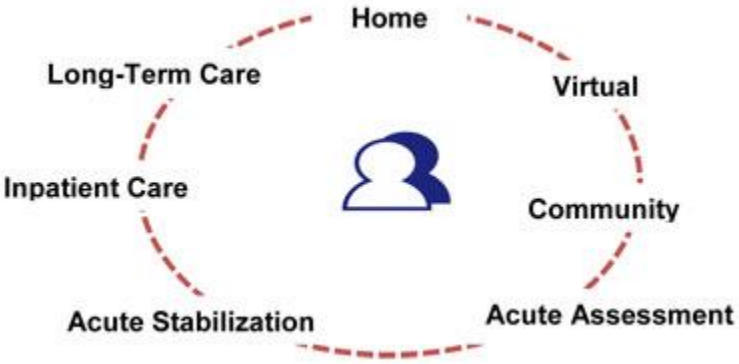
Care Model Themes

Theme 6: Individuals requiring behavioral health services in Texas lack an integrated continuum of care that seamlessly coordinates home, community, ambulatory, acute stabilization, and long-term management resources.

Texas SPHs currently lack an integrated care system that links the right care at the right place and the right time. Interviewees and focus group participants frequently cited the lack of care coordination across the system, as well as a need for a streamlined process for follow-up of a discharged individual once they are referred back to a Local Mental Health Authority. This inability to track and care for the individual from point of discharge into the community carries many implications. First, this can result in a prolonged road to wellness for the individual due to lack of follow-up care post-discharge or quite possibly a duplication of services for the same individual. Second, individual readmissions are common and the road to wellness can be delayed due to the gaps in the continuum of care or by return of an individual to the institutional setting. Finally, individuals are lost in the current behavioral health care platform that exists today due to its "siloed" nature and lack of care coordination.

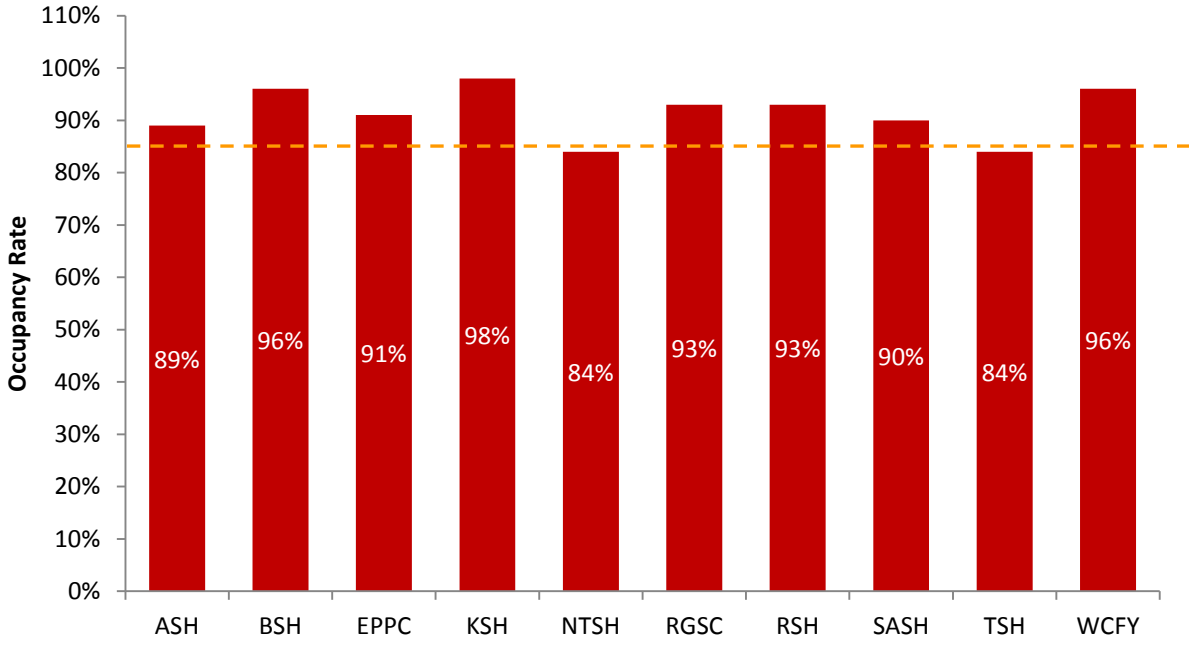
This results in unmet needs, potentially increased health risks, and often an inability for the individual to reach their optimal level of productivity, personally and professionally. The end result is often the improper use of services, compressing the system and leading to increased costs. Texas requires an integrated care coordination model with supportive case management for individuals requiring behavioral health care services.

Exhibit 6-1. Integrated Continuum of Care Model



In addition, in the most recent fiscal year, nearly all SPHs were operating at or above a 95 percent occupancy rate. Texas SPHs with occupancy rates greater than 85 percent experience typical access block tied to census variation, indicating that there are admissions limitations for individuals served by the SPHs. Industry benchmarks for occupancy rates for community hospitals are 85 percent and 90 percent for SPHs. It should be noted that occupancy rates across the system may differ due to distinct characteristics and rural versus urban environments.

Exhibit 6-2. Texas State Psychiatric Hospital Occupancy Rates, FY14YTD



	ASH	BSH	EPPC	KSH	NTSH	RGSC	RSH	SASH	TSH	WCFY
Avg. Daily Population	266	192	67	198	537	51	339	272	243	75
Operating Beds	299	200	74	202	640	55	366	302	316	78

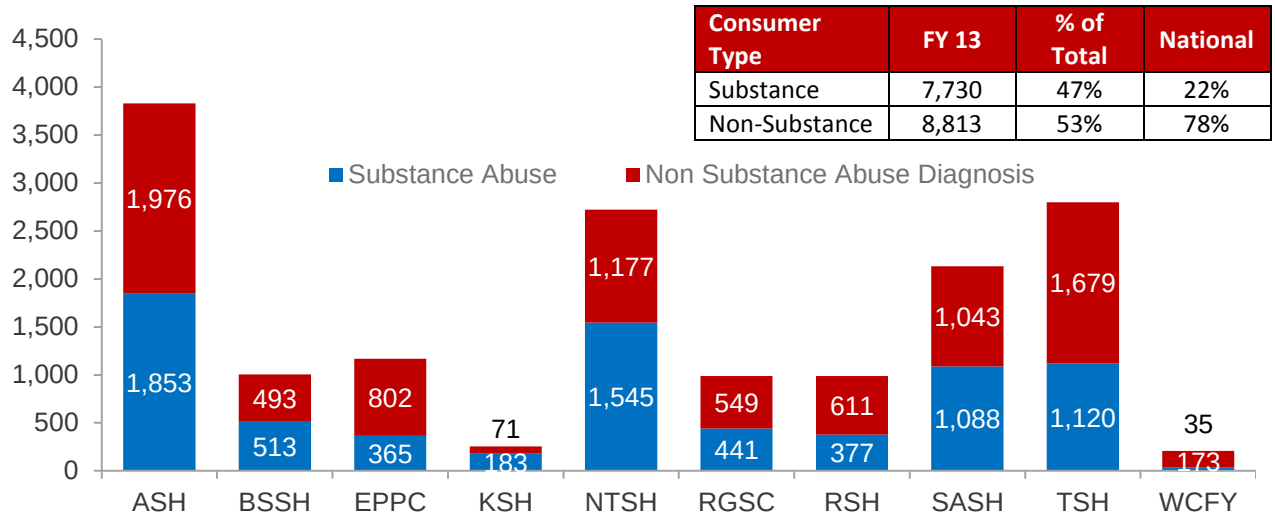
Theme 7: Inadequate linkages and coordination exist between the behavioral health network, substance abuse providers, criminal justice system, and the medical system.

Several trends will challenge the Texas SPHs to keep up with population changes. The population of the state of Texas is growing at a faster rate than the rest of the country and is projected to increase 24 percent over the next ten years. Meanwhile, consumers with co-occurring, behavioral health, substance abuse, or medical diagnoses are a rapidly growing population within the SPH population, and the forensic behavioral health population base is also growing. Increased forensic commitments have placed pressure on the SPH system, as many of these consumers have been moved from the jail cell to the hospital bed. This increased pressure from the courts has had direct impact on the availability of civil beds.

Substance abuse among the consumer population has historically been and continues to be a growing concern. Treatment for consumers with this diagnosis is sparse and its effectiveness is challenging to quantify. As a result, many of these consumers repeatedly cycle through the

system. This is confirmed as they become a readmission in the SPHs, or are seen on a routine basis in the judiciary system (Peterson, 2013).

Exhibit 6-3. Substance Abuse Population by Hospital, FY13



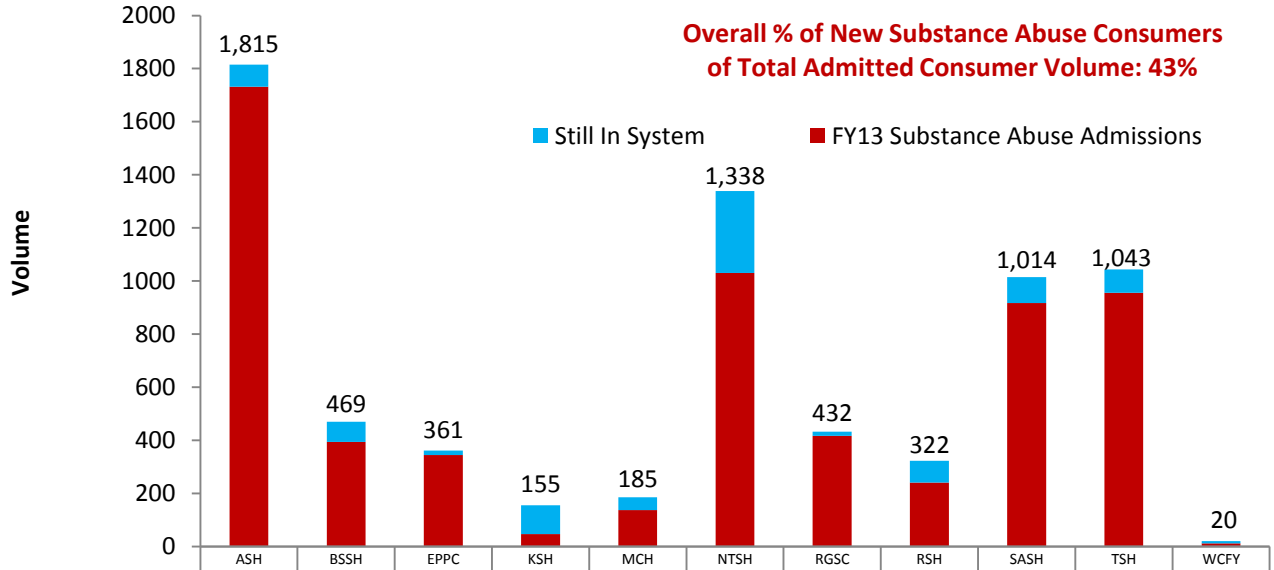
Consumer Type	FY 13	% of Total	National
Substance	7,730	47%	22%
Non-Substance	8,813	53%	78%

Note: Fiscal Year13 Discharges include individuals discharged in Fiscal Year 2013 and individuals still residing at an Inpatient State Psychiatric Hospital. Substance Abuse individual defined as having one or more substance abuse diagnosis from diagnosis provided. Chart excludes substance abuse individuals with blanks for "admitting facility" and Montgomery County from graph.

Source: DSHS Patient Level Detail, CannonDesign analysis 2014.

Individuals admitted with a substance abuse diagnosis made up 47 percent of the total population admitted to Texas SPHs in fiscal year 2013. The national average for individuals admitted with a substance abuse diagnosis is 22 percent, indicating that Texan SPHs on average have more substance abuse needs than other SPHs. In particular, Kerrville State Hospital and North Texas State Hospital have the highest percent of individuals with a substance abuse diagnosis at 72 percent and 56 percent, respectively.

Exhibit 6-4. Substance Abuse Consumer Admissions and Still in System by Facility, FY13



	ASH	BSSH	EPPC	KSH	MCH	NTSH	RGSC	RSH	SASH	TSH	WCFY
Still In System	84	76	17	109	48	308	16	82	97	88	8
FY13 Substance Abuse Admissions	1,731	393	344	46	137	1,030	416	240	917	955	12
% of Total Admitted Consumer Population at SPH in FY13	48%	46%	31%	56%	37%	47%	44%	35%	48%	38%	8%

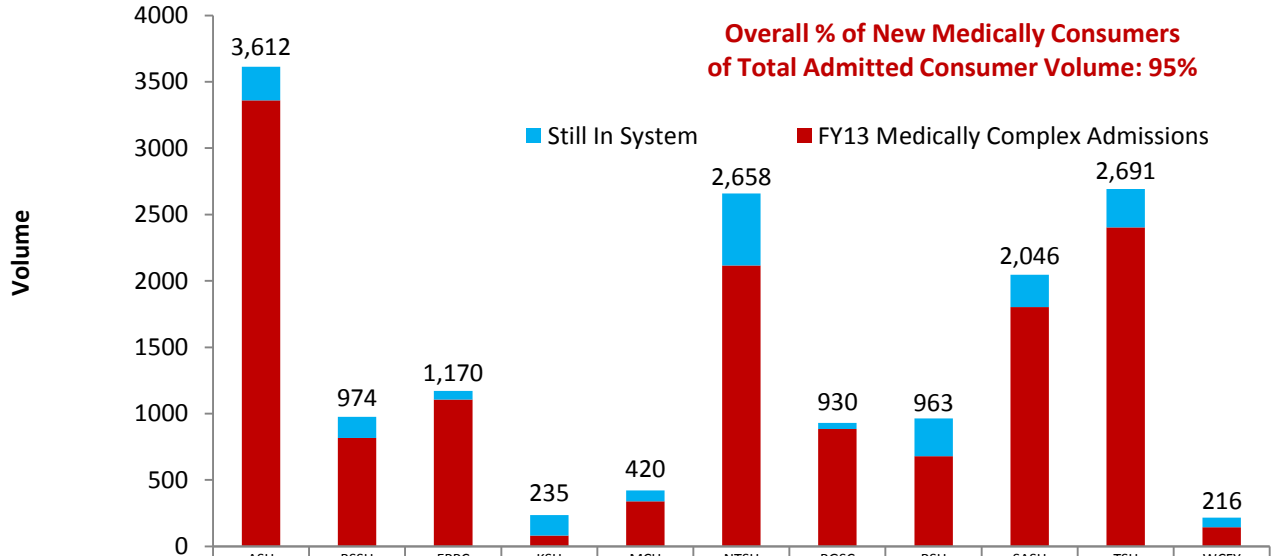
Note: Individuals still in the system are those that were admitted prior to Fiscal Year 2013, are still being treated at the facility during Fiscal Year 2013, and have not been discharged | The percentage of individuals admitted for substance abuse takes the Fiscal Year 2013 substance admissions/Total Fiscal Year 2013 admissions.

Source: DSHS Client Level Data, CannonDesign analysis 2014.

SPHs have felt the impact of the increase in the number of consumers presenting with substance abuse and medical complexities as well as the presence of the growing forensic population.

A review of the detailed consumer data indicates that 96 percent of the population in SPHs are considered to be medically complex, which is defined as having both a behavioral health diagnosis and a medical diagnosis. Consumers with these complex comorbidities are reliant on coordinated and streamlined care and the lack of collaboration in the care continuum poses challenges for these consumers (Torrens, 2012).

Exhibit 6-5. Medically Complex Consumer Volume by Facility, FY13



	ASH	BSSH	EPPC	KSH	MCH	NTSH	RGSC	RSH	SASH	TSH	WCFY
Still In System	254	157	65	154	82	543	47	284	244	288	72
FY13 Medically Complex Admissions	3,358	817	1,105	81	338	2,115	883	679	1,802	2,403	144
% of Total Admitted Consumer Population at SPH in FY13	93%	97%	99%	99%	92%	96%	93%	98%	95%	96%	99%

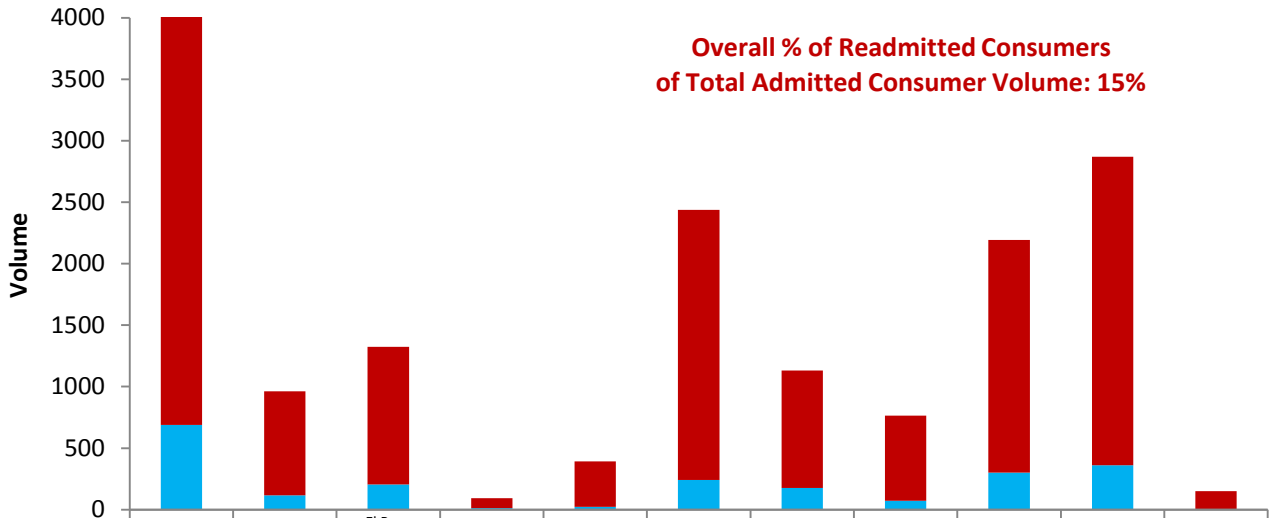
Note: Consumers still in the system are those that were admitted prior to Fiscal Year 2013, are still being treated at the facility during Fiscal Year 2013, and have not been discharged | The percentage of medically complex consumers admitted takes the Fiscal Year 2013 medically complex admissions and medically complex consumers in system prior to Fiscal Year 2013/Total Fiscal Year 2013 admissions.

Source: DSHS Client Level Data, CannonDesign analysis 2014.

The forensic consumer population is also on the rise in Texas. Fifteen percent of all admitted consumers in the State of Texas are committed through the criminal courts. Rusk State Hospital and North Texas State Hospital had the majority of the individuals admitted with forensic behavioral health needs in fiscal year 2013.

These cohorts of individuals were noted to have higher readmissions rates on average. Readmissions to Texas SPHs were examined using two different methodologies – the first methodology analyzed readmissions within 30 days to the same SPH facility; the second methodology analyzed readmissions over one-year period to any SPH facility. Both methodologies excluded transfers to a different facility. When looking at 30-day readmission rates, overall, three percent of all individuals admitted to Texas SPHs in fiscal year 2013 were readmitted within 30 days to the same facility. This rate jumped up to 15 percent when examining readmissions within the same year following discharge to any facility, though readmission rates ranged from 4 percent to 19 percent by facility. Individuals with a substance abuse diagnosis made up half of the readmissions and were more likely to return to the SPH environment within 90 days, suggesting that access to appropriate services or coordination remains a challenge in the community (see Exhibit G-13 in Appendix G).

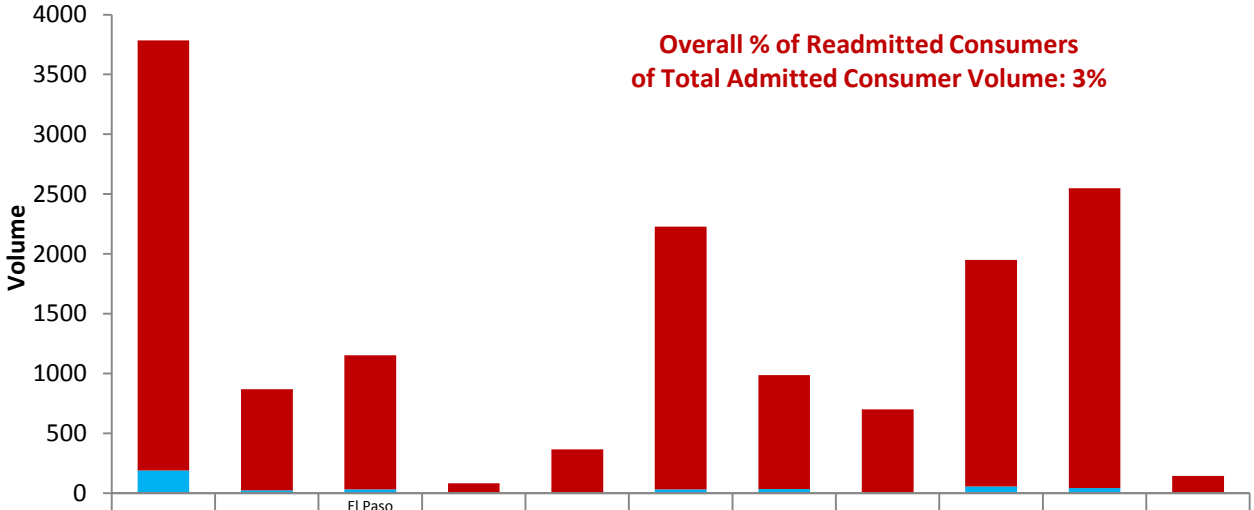
Exhibit 6-6: Total Readmissions by State Hospital, FY13



	Austin	Big Spring	El Paso Psychiatric Center	Kerrville	Montgomery County	North Texas	Rio Grande Center	Rusk	San Antonio	Terrell	Waco Center for Youth
FY13 Admissions	3,595	846	1,120	82	368	2,196	953	694	1,892	2,507	145
Readmissions	689	116	204	12	24	242	177	71	300	362	6
% of Total Consumer Population at SPH in FY13	19%	14%	18%	15%	7%	11%	19%	10%	16%	14%	4%

Source: DSHS Client Level Data, CannonDesign analysis 2014.

Exhibit 6-7: 30-Day Readmissions by State Hospital, FY13



	Austin	Big Spring	El Paso Psychiatric Center	Kerrville	Montgomery County	North Texas	Rio Grande Center	Rusk	San Antonio	Terrell	Waco Center for Youth
FY13 Admissions	3,595	846	1,120	82	368	2,196	953	694	1,892	2,507	145
Readmissions	189	24	33	0	0	32	35	6	57	42	1
% of Total Consumer Population at SPH in FY13	5%	3%	3%	0%	0%	1%	4%	1%	3%	2%	1%

Source: DSHS Client Level Data, CannonDesign analysis 2014.

Theme 8: The current funding model for behavioral health in the state of Texas is focused on funding state-operated inpatient services. There is less focus and resource allocation directed toward community resources and evolving models of comprehensive integrated care management.

Even with recent increases in community funding, the State of Texas continues to be reliant on the institutional model of care – inpatient behavioral health services is the dominant care the state provides and funds for Texan communities. In addition an evolving model of comprehensive and integrated care has yet to be adopted by the State of Texas, increasing the reliance on the SPHs to provide care.

A report of the National Outcomes Measurement System (NOMS) indicated that the State Mental Health Authorities (SMHA) in Texas spend very little on community programs in relation to other benchmark states sharing similar challenges as the State of Texas. States used for comparison purposes were Arizona (AZ), California (CA), Florida (FL), Illinois (IL), New York (NY), and Pennsylvania (PA). When compared to other like states, Texas appears to spend a disproportionate amount on per capita state-operated services.

Using the most current financial data reported by SMHA, it is noted that SMHA Expenditures for State Mental Health were 41 percent in Texas, which were notably higher than that of AZ, CA, IL, NY, or PA, with Florida being the only exception to the rule. Texas's state expenditures per client/consumer served in 2010 were $1,303 and Florida's were $1,139. It should be noted that while Arizona serves only half of the number of consumers that Texas does, it expends over five times the amount on community program funding per consumer.

Exhibit 6-8: Financial Investment in Behavioral Health Services by Populous States, FY10 (Texas figures exclude Medicaid funding)

Metric		AZ	CA	FL	IL	NY	PA	TEXAS
TOTAL BUDGET	Total SMHA Expenditures	$1,141,300,000	$5,674,396,088	$742,277,938	$1,030,100,000	$4,965,000,000	$3,568,718,516	$979,600,000
	Total Clients Served for Community Mental Health	187,044	622,116	319,190	136,047	717,075	633,624	308,032
COMMUNITY PROGRAM FUNDING	SMHA Expenditures for Community Mental Health	94%	79%	51%	71%	69%	89%	59%
	SMHA COMMUNITY Expenditures	$1,329,442,000	$4,482,772,910	$378,536,248	$731,371,000	$3,425,850,000	$3,176,159,479	$577,964,000
	SMHA COMMUNITY Expenditures per Client Served	$7,107	$7,205	$1,185	$5,375	$4,777	$5,012	$1,876
STATE PROGRAM FUNDING	SMHA Expenditures for State Mental Health	6%	21%	49%	29%	31%	11%	41%
	SMHA STATE Expenditures	$84,858,000	$1,191,623,178	$363,623,178	$296,729,000	$1,539,150,000	$392,559,037	$401,636,000
	SMHA STATE Expenditures per Client Served	$453	$1,915	$1,139	$2,195[1]	$2,146	$619	$1,303

(1) Data reflects Illinois funding strategy prior to closure of multiple state-operated psychiatric hospitals

Note: Texas SMHA expenditures above do not reflect all Medicaid spending.

Note: Data reflects Illinois funding strategy prior to closure of multiple state-operated psychiatric hospitals; SMHA = State Mental Health Agency

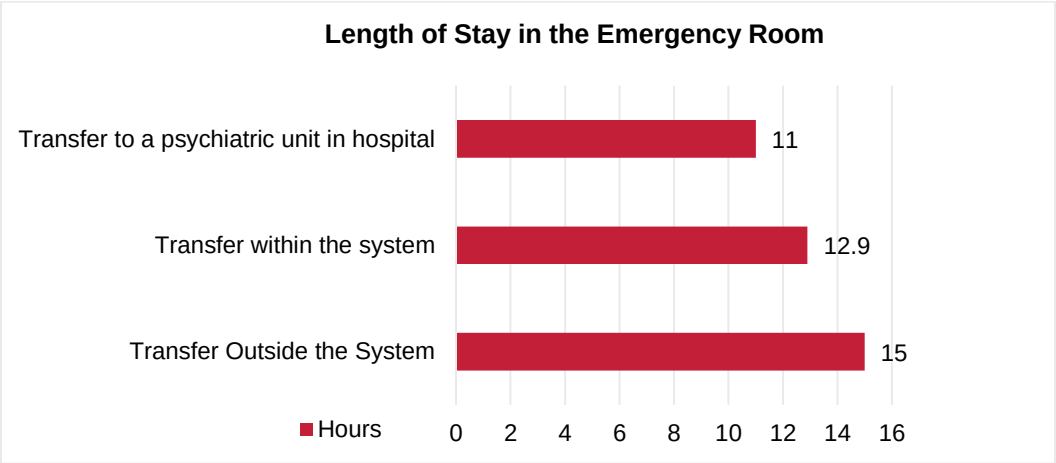
Source: 2012 Mental Health National Outcome Measures (NOMS): CMHS Uniform Reporting System, www.samhsa.gov

Texas is a state with a heavy reliance on the institutional model of care and is experiencing a high rate of individuals seeking care in local community emergency rooms. Data from the National Center for Health Statistics shows that the average wait for behavioral health services in an emergency department was 42 percent greater than the wait for non-behavioral health issues.

The Annals of Emergency Medicine published a prospective study that reviewed over 1,000 adults treated at one of five Emergency Departments (EDs) between June 2008 and May 2009. These psychiatric patients spent more than 11 hours in the ED on average when seeking care. The need for hospitalization, restraint use, and the completion of diagnostic imaging had the greatest effect on post assessment boarding time, whereas the presence of alcohol on toxicology screening led to delays earlier in the ED stay (Lai, 2012). Identification and sharing of best practices associated with each of these factors would provide an opportunity for improvement in ED care for this population.

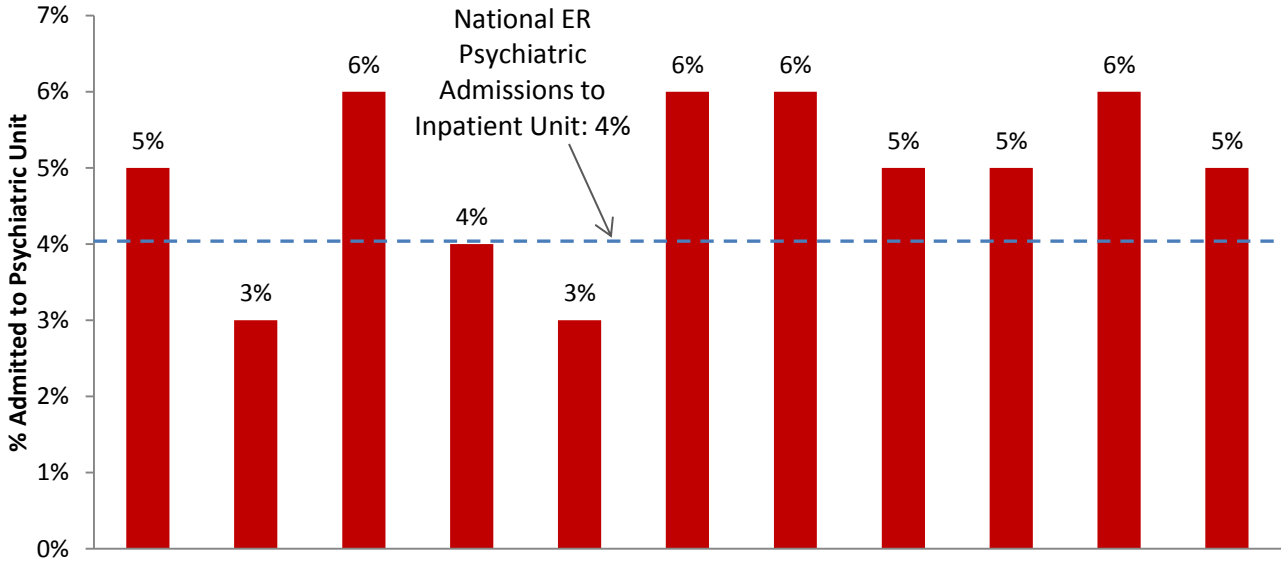
Patients who were transferred outside the care system spent on average 15 hours in the emergency room. Those transferred within the system spent 12.9 hours and those transferred to a psychiatric unit in the hospital spent on average 11 hours waiting in the emergency room. A large driver of the extended wait times is due to shortage in access to care.

Exhibit 6-9: Average ED Length of Stay for Individuals Seeking Behavioral Health Care Services



The long lengths of stays and number of behavioral health patients in emergency rooms have increased the rate of admissions to inpatient psychiatric programs in Texas. An evaluation of the 11 Health Service Regions in Texas indicates there are a varying number of consumers with behavioral health needs admitted to hospitals across the regions. Nationally, the ED Psychiatric Admissions to Inpatient units is four percent. In all regions in Texas except for Region #2, 3 and 4, the admission rate ranges from five percent to six percent, further emphasizing the impact that individuals in Texas seeking behavioral health care have on their local community hospitals.

Exhibit 6-10: Emergency Visits Resulting in Psychiatric Admissions, Texas, FY12



Region	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	Region 7	Region 8	Region 9	Region 10	Region 11
Psych Admits	6,143	1,920	41,221	6,262	2,609	40,127	16,391	16,267	2,932	5,257	11,654

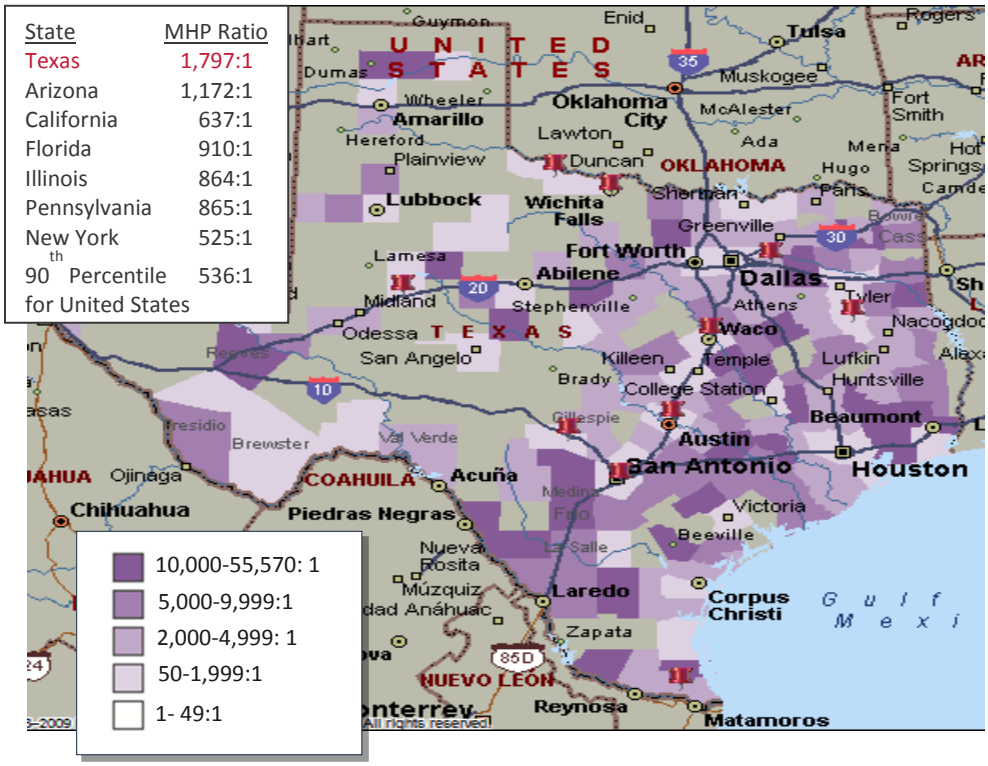
Human Capital Themes

Theme 9: Lack of professional staff in the workforce/applicant pool in rural areas of Texas place limitations on access, acute stabilization, and long-term management of consumers in these areas.

Across the country there is a critical shortage of qualified behavioral health personnel. Texas experiences these same pressures as it has shortages of psychiatrists, licensed practical counselors, social workers, and staff such as Psychiatric Nursing Assistants (PNAs) providing direct care. Staff need to be well-trained, right-sized, and diverse in their skill sets, otherwise most efforts at behavioral health system transformation are likely to fail (Sacks, 2013). Texas currently has a behavioral health provider to patient ratio of 1 to 1,797 while the rural areas of the state have ratios of 1 to 10,000 – 1 to 55,570. In contrast, the 90th percentile in the United States for the behavioral health provider to patient ratio is 1 to 536.

Texas has numerous individuals with behavioral health care needs residing in rural areas where there is a lack of qualified personnel to provide care. Consumers in these areas have difficulty obtaining the acute stabilization they need in emergent situations or for their long term management on their road to health.

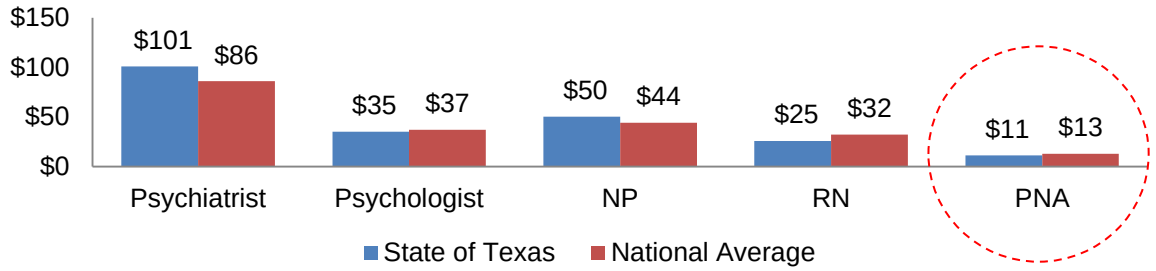
Exhibit 6-11. Population to Mental Health Provider Ratio in Texas



Theme 10: Current models of employee compensation, training, and staff development lag behind community offerings and create a competitive disadvantage with respect to recruitment and retention.

Due to the increasing demand for services in behavioral health, independent psychologists are often easily employed and have corresponding strong salaries. This makes it very difficult for Texas to compete with the fair market value of many of these practitioners. Fortunately, once psychologists make the decision to join a Texas State Hospital, very few depart and turnover remains low. However, turnover rates for critical frontline staff such as PNAs are high at 33 percent annually, which creates challenges in maintaining continuity of care. On average, Texas State Hospitals spend less per PNA than the national average, making it difficult to retain this valuable staff.

Exhibit 6-12. Hourly Wages of Clinicians and Support Staff for all Texas State Psychiatric Hospitals, FY14



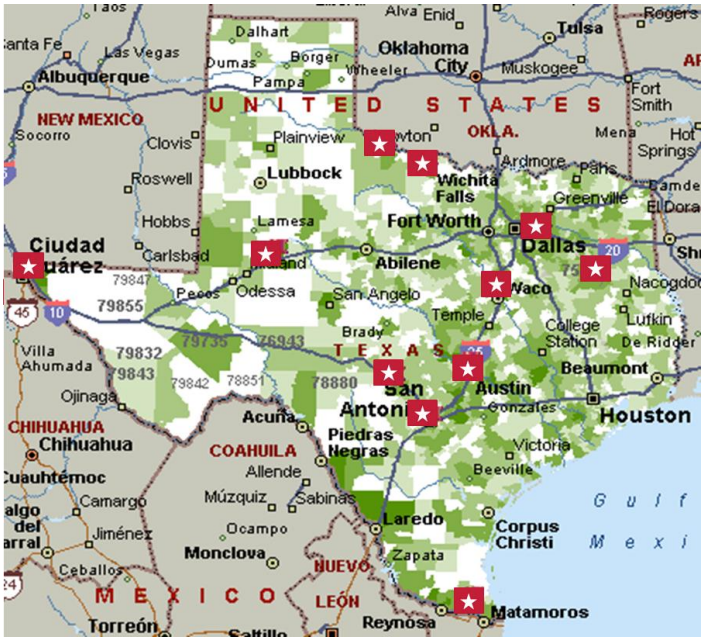
Source: United States Department of Labor, Bureau of Labor Statistics, May 2013. | DSHS data "S4. Hourly Cost by Staff"

Community Themes

Theme 11: Many rural communities lack convenient access to acute assessment and stabilization programming due to poor proximity to behavioral health services, placing increased responsibility on local emergency departments and law enforcement agencies.

In the focus groups, family members frequently cited travel times exceeding one hour to visit a family member being cared for at a SPH. An evaluation of the data revealed that while a majority of individuals originated from the urban hubs, nearly half of the SPHs had individuals admitted over 100 miles away from their county of origin. Additionally, SPH placement throughout the state creates a void in inpatient psychiatric services in the northern Panhandle and Rio Grande Valley. Children and adolescent consumers of state inpatient psychiatric services are particularly challenged for placement close to their homes with the limited number of SPHs who currently serve this demographic.

Exhibit 6-13. Consumer Origin to State Psychiatric Hospital, FY14



Section 7. Key Recommendations

Individuals with behavioral health needs have a wide range of service options to consider, including alternative community-based services and private and county-operated facilities. The goal of this study is to develop a ten-year plan for the provision of services to persons served by SPHs while recognizing the state's goal to serve people in the least-restrictive setting.

The following section contains the key recommendations for the provision of services at SPHs over the next ten years. Key recommendations are divided into sections for Right Place, Right Care, and Right Resources. Additionally, key recommendations have been broken up into sub-recommendations that appear under each numbered recommendation.

Key Recommendations

In developing recommendation themes, CannonDesign and its sub-contractors initially developed recommendations that were shared and updated with DSHS leadership feedback. Each recommendation was then assessed across several impact factors including: access, resource requirements, compatibility with the DSHS culture as well as external stakeholder expectations, promotion of staff integration and alignment, and ease of implementation. Further analysis to determine exact funding and staff implications on a hospital-by-hospital basis may be required.

Right Place Recommendations

1. **Deliver care to consumers in the "Right Place" by ensuring inpatient behavioral health services are available in locations convenient to the consumer. Projected bed capacity assumes that the recommendations contained in this report will be implemented.**

The concept of "The Right Place" mandates that all sites of service along the behavioral health care continuum rethink their roles and scope of services to ensure that consumers receive the least restrictive care as close to their homes as possible. As a part of rethinking the right place, a number of providers along the continuum will need to evolve their roles in the future model of care. While a number of consumers can be served in settings other than SPHs, a number of individuals, particularly those with the most complex needs will continue to require the care that is currently only provided by the SPHs.

Capacity must be increased to address not only the expanding Texas population, forensic population, and populations with comorbidities (substance abuse and medically complex), but also the significant latent demand that is currently not being met in both the community and in Texas prisons and jails. In order to provide adequate services for these populations, the following capacity must be added over the next ten years:

- Additional state psychiatric hospital bed capacity
- Additional community bed capacity (beds to support indigent care which can be covered by either state and/or locally-supported dollars)
- Provision of additional funding to community providers to care for the growing inpatient psychiatric population following discharge from an inpatient setting

- Improved access to both inpatient and community care and resources including, but not necessarily limited to: primary medical care, general and specialty behavioral health care, substance abuse treatment, dental health care, physical therapy/occupational therapy and speech therapy, services for the visually impaired, services for the hearing impaired, durable medical equipment, and acute inpatient services.

Further analysis is recommended to determine the impact of implementing this recommendation on direct and non-direct care staff. In addition, upon continued increase of beds across SPHs, DSHS should ensure that staffing ratios per consumer reflect best practices. DSHS should continue to evaluate the transition process of moving people into the community.

	SPH	Community**	Current Unmet Need	Total
Existing Capacity (2014)	2,463*		-	
Total Current Need	2,715	1,010	570	4,295
Projected Need (2024)	3,063	1,135		4,768***

** +/- 75 child & adolescent beds will be moving to Victory Field from NTSH-Vernon*

***Community-operated beds can be supported by state or local funding. Currently, DSHS contracts for 456 community-operated beds.*

****Includes current unmet need (570).*

a. *<u>State Operated Beds: Observed Need.</u> To meet projected demand for state inpatient psychiatric services over the next ten years based on observed need and population growth, DSHS should plan to increase the capacity of its state psychiatric hospital beds to provide a total of 3,063 inpatient beds for psychiatric services.*

   Assuming the future role of the state hospitals will be to provide primarily forensic and tertiary care, a total of 3,063 state psychiatric beds will be needed in ten years in addition to the community and latent bed needs described below. Currently, SPHs have 2,463 beds. By increasing the number of beds to reflect existing and projected demand DSHS will be better prepared to respond to inpatient demand as needed, eliminate waiting lists, and address latent demand for inpatient state psychiatric services. Projected state psychiatric bed need in the following regions: Texas Panhandle, Montgomery County, and the Waco/Dallas/Arlington area were also identified by the forecasting model.

b. *<u>Community Operated Beds: Observed Need.</u> To meet projected indigent and forensic demand for community-operated inpatient psychiatric services over the next ten years based on observed need and population growth, DSHS may choose to partner with community hospitals or contract additional beds to provide a total of 1,135 community-operated inpatient beds for psychiatric services.*

   Based on observed need, 1,010 beds are currently needed to meet the projected indigent and forensic need for community-operated beds. By 2024, this number will grow to 1,135. DSHS currently contracts for 456 community-operated beds, and local communities support beds to address the remaining need. By increasing the number of community-operated beds the state will be better prepared to implement the new vision for the state-operated system and respond to the anticipated demand for acute care services in the community. Adding additional community beds will also alleviate

pressure on other acute stabilization services and identify the behavioral health needs of consumers earlier in the care continuum.

Community-operated beds can be funded with state and/or local dollars. Any DSHS funding to support contracting with community hospitals would vary based on the final per bed day rates negotiated with individual community hospitals. It is recommended that DSHS explore both a per consumer per bed day rate in addition to an annual per bed rate to determine the more cost effective scenario. Further analysis on a site-by-site basis is required to determine the specific impact on individual communities, particularly those identified as requiring additional capacity over the next ten years. In communities where comprehensive services are not currently provided, expansion of services is projected to have a positive impact on the affected communities.

c. *Latent Need. Projected demand for unmet need can be met in various ways, including allocating projected bed need between state psychiatric beds, contracted beds, and community-based beds.*

Current unmet need is estimated to be 570 beds. It is difficult to determine how these beds should be allocated, given that this is a population that has not yet accessed care. However, it is likely that a portion of these consumers may be forensically or civilly committed or require tertiary care. For planning purposes, the market share analysis was used to distribute the latent bed need, resulting in an estimated current need of an additional 272 state-operated beds and an additional 298 community-operated beds for indigent care.

Bed Need Broken Up by State-Operated and Community Operated (Indigent) Need, Current and 2024

	Current			Current Total	2024			2024 Total
	SPH	Community	Unmet Need		SPH	Community	2014 Unmet Need*	
State Operated	2,715		272	2,987	3,063		272	3,335
Community Operated (indigent)		1,010	298	1,308		1,135	298	1,433
Total	2,715	1,010	570	4,295	3,063	1,135	570	4,768

** These figures do not reflect population growth associated with unmet need*

Currently, DSHS and local communities share responsibility for supporting community-operated beds for indigent and forensic patients requiring inpatient care. For planning purposes, the indigent bed need can be addressed with a variety of strategies that include allocating this bed need fully to the community, splitting bed need equally between the State and community, and allocating bed need fully with the State. The tables below explore the three potential scenarios and what the split of indigent beds would look like by scenario.

Scenario 1: Additional Indigent Bed Need Fully Supported by the Community

		Indigent Care			Change from Existing Capacity		
	SPH	DSHS-Contracted	Community	Total Charity	SPH	DSHS-Contracted	Community
Total Existing Capacity	2,463	456					
Total Current Need	2,987	456	852	1,308	+524	-	+852
Total Projected Need (2024)	3,335	456	977	1,433	+872	-	+977

Scenario 2: Charity Bed Need Equally Split between the State and Community (50% and 50%)

		Indigent Care			Change from Existing Capacity		
	SPH	DSHS-Contracted	Community	Total Charity	SPH	DSHS-Contracted	Community
Total Existing Capacity	2,463	456					
Total Current Need	2,987	654	654	1,308	+524	+198	+654
Total Projected Need (2024)	3,335	717	716	1,433	+872	+261	+716

Scenario 3: Charity Bed Need Fully Supported by the State

		Indigent Care			Change from Existing Capacity		
	SPH	DSHS-Contracted	Community	Total Charity	SPH	DSHS-Contracted	Community
Total Existing Capacity	2,463	456					
Total Current Need	2,987	1,308	-	1,308	+524	+852	-
Total Projected Need (2024)	3,335	1,433	-	1,433	+872	+977	-

2. Deliver care to consumers in the "Right Place" by seamlessly coordinating services along the behavioral health continuum in a manner best serving the needs of all constituency groups.

a. Transition the responsibility for acute assessment and disposition determination to local mental health authorities and emergency departments with the goal of ending the practice of SPHs receiving consumers directly from community settings for acute assessment.

A significant number of consumers with behavioral health needs typically require acute assessment to determine if inpatient acute stabilization is required or whether less-restrictive options can be leveraged to return them to their baseline state of well-being (Madi, 2007). In many of these instances, consumers are referred to SPHs for acute assessment and often traveling great distances to an SPH when higher-level inpatient services may not be required. In cases where involuntary civil assessment is required, the distances required to transport consumers to SPHs can place significant hardship on local law enforcement and create safety considerations for local communities.

> *"The patient had still not received any type of mental treatment approximately 24 hours after being taken into custody by sheriff's office personnel."*
> (Limestone County Sheriff's Office, Personal Letter, July 2014)

Transitioning acute assessment services to local emergency departments will provide consumers with more convenient and more rapid acute assessment, while decreasing the burden placed on public safety officials to support behavioral health services. Existing community resources should be leveraged to support acute assessment in local emergency departments, though further analysis is required at the community level to determine staffing requirements against available workforce demand. In instances where the local workforce is inadequate, alternative staffing models would need to be considered.

b. Transition responsibility for initial inpatient stabilization and short-term inpatient admissions (under 14 days) for voluntary and involuntary civil admissions to community hospitals and/or psychiatric hospitals with appropriate inpatient behavioral health units with the goal of ending the SPHs' role in this area. This can be achieved by:

i. Altering funding model to provide community hospitals with reimbursement for provision of initial inpatient stabilization and short-term admissions (under 14 days) for consumers without payment source.

ii. Alternatively, contract inpatient beds for provision of initial inpatient stabilization and short-term admission services at specific community hospitals across the state of Texas.

A number of consumers with behavioral health needs will also, from time to time, require acute stabilization services of a short duration. Currently, consumers are referred to SPHs for acute stabilization and travel significant distances to an SPH. In cases where involuntary civil admissions for stabilization are required, the distances necessary to transport consumers to SPHs can place significant burden on local law enforcement and create safety considerations for local communities. Transitioning acute stabilization services to community hospitals will provide consumers with more convenient and more rapid access to acute stabilization care while decreasing the burden placed on public safety officials to support behavioral health services. Shifting these short-term inpatient stabilization and admissions services to the community hospital setting also supports the long-term vision of SPHs serving as tertiary care centers for consumer with more complex inpatient psychiatric requirements.

Further analysis is needed on the staffing implications stemming from reduced inpatient admissions to SPHs related to the transition of acute stabilization services to community

hospitals when overlaid with expected increases in utilization for all behavioral health services over the next decade. In addition, changes in the Medicaid and unfunded reimbursement models will need to be studied to determine the appropriate reimbursements models needed to incentivize community hospitals to provide acute stabilization and short-term care.

c. *Transition role of SPHs to that of a tertiary regional referral center for the most complex consumers with behavioral health needs, including:*

    i. *Voluntary and involuntary civil admissions requiring long-term inpatient management beyond the initial 14-day stabilization window.*

    ii. *Forensic consumers with complex behavioral needs.*

    iii. *Expand scope of services offered to all necessary therapies for appropriate consumers either at a SPH or in partnership with tertiary inpatient psychiatric programs in Texas.*

By shifting the SPH operational model to one focused on consumers with the most complex behavioral health needs and consumers who have forensic commitments, SPHs will be able to provide accelerated access to services through the reduction or elimination of waiting lists and transition of lower-acuity consumers to a more appropriate and less restrictive site of care (Gotham, 2010). Further analysis is required at the SPHs level to determine funding requirements. In addition, modifications in the Medicaid and unfunded reimbursement models will need to be studied to determine the appropriate reimbursements models necessary to incentivize community hospitals to provide short-term acute stabilization services and to allow the SPHs to focus on high-acuity and longer-term inpatient hospitalizations

d. *Develop funding mechanism to encourage local community hospitals to develop inpatient medical-psychiatric units to provide care to consumers requiring simultaneous medical and psychiatric services, as well as inpatient dual diagnosis units to provide care to consumers requiring integrated substance abuse and psychiatric services.*

Analysis of consumer demographics in Texas points to increasing prevalence of consumers with combined psychiatric-medical and psychiatric-substance abuse diagnoses (Drake, 2004). In instances today where inpatient hospitalization is required, most community providers and facilities are ill-prepared to support simultaneous psychiatric and medical services and psychiatric and substance abuse services (Burge, 2002). Understanding that consumer health and well-being is optimized through simultaneous attention to holistic care, development of medical–psychiatric inpatient units and dual diagnosis units for substance abuse-psychiatry can shorten inpatient lengths of stays and better optimize overall health (Granholm, 2003). It will be important to ensure that these units have adequate numbers of appropriately-trained staff and resources.

e. *Transform long-term model of care for geriatric consumers with dementia and other cognitive disorders with a focus on partnering with long-term care facilities specializing in dementia care as well as establishing long-term care solutions within state SSLCs for consumers unable to locate community alternatives.*

Analysis of consumer demographics in Texas points to increasing prevalence of geriatric consumers with dementia and other cognitive and memory disorders. In FY14, there were **964** individuals in the SPH system over the age of 65 who have memory or cognitive disorders, in addition to a mental illness or developmental disorder. In some instances, these disorders can be interpreted to represent conditions requiring psychiatric intervention when they in fact represent normal disease progression. When this interpretation occurs, many consumers are placed in inpatient psychiatric settings where their subsequent transition back to community and long-term care settings can prove challenging.

By leveraging existing state resources that offer enhanced expertise in a lower cost and less restrictive setting, consumers will benefit from improved outcomes while the SPHs will be better able to respond to the larger community need. Partnerships with DADS should be explored to transition these geriatric consumers with cognitive and memory disorders to a state-supported living center (SSLC). This recommendation aligns with recommendations made to DADS for the provision of services to individuals residing in SSLCs over the next ten years. CannonDesign recommendations for DADS included enhancing coordination with other agencies and exploring initiatives that promote service integration, coordination, and collaboration between agencies and services. Geriatric consumers with dementia and other cognitive disorders represent one such population that could potentially overlap with the missions for both DADS and DSHS. In conjunction with both HHSC and DADS, there is opportunity to further enhance services to streamline services and to map the movement of individuals across agencies, particularly at the intermediate care facility in Harlingen (Rio Grande) which provides services to both individuals with intellectual and developmental disabilities, and in locations in which there is both an SPH and SSLC presence.

If this recommendation is implemented, DSHS and DADS should work closely to identify the profile of the individuals who would benefit most from the transition to an SPH to an SSLC and to further explore the impact of movement of these individuals on the projected SPH and SSLC bed needs.

f. Support and enhance funding of local mental health authorities to support growth and development of partial hospitalization and day programming for consumers with behavioral health needs.

Peer-reviewed research has demonstrated that many consumers can benefit from day programming designed to support psychiatric well-being and to develop successful coping mechanisms. Wrap-around services that include vocational training can also support long-term stability and decrease incidences of acute decompensation, while increasing utilization of acute assessment and stabilization services (Sekerka, 1999). The State of Texas should investigate additional reimbursement models for Medicaid and unfunded patients requiring partial hospitalization/day programming services to incentivize community resources to provide these services.

g. Improve interagency coordination and accountability:

i. Create an Interagency Coordinating Committee to address cross-system issues, review regulations and incentives, and to establish common goals and approaches.

ii. *Development of policies and incentives that promote service integration, coordination and collaboration between agencies, services and across systems.*

Better coordination among state agencies that serve Texan consumers with behavioral health needs, including agencies with responsibility for long term care, health care, workforce, and rehabilitation services, should help reduce overall system costs while increasing the efficient use of state resources. For example, enhanced coordination with the criminal justice system will provide the opportunity to educate members of the criminal justice system regarding the long-term vision and role of the SPHs, ensuring that consumers with behavioral health needs are receiving the right services in the right place with the right resources. Additional analysis to map the movement of consumers with behavioral health needs across agencies can highlight additional opportunities to streamline services and identify these consumers earlier in the process.

DSHS should work with other impacted agencies to create an interagency Coordinating Committee and determine its scope and responsibilities. Impacted state agencies/programs should also assign staff to the interagency committee and ensure that part of its scope includes the development of policies and initiatives to promote service integration, cooperation, and collaboration between and among agencies and systems.

3. Deliver care to consumers in the "Right Place" by integrating behavioral health in primary care clinics and vice versa to facilitate interdisciplinary care delivery.

a. *Develop funding mechanism to encourage primary care centers to incorporate substance abuse and behavioral health care services in community primary care centers at sites including, but not necessarily limited to:*
   i. *Public Health Centers*
   ii. *Federally-Qualified Health Centers*
   iii. *Rural Health Centers*
   iv. *Mobile Health Clinics*
   v. *Homeless Shelters*
   vi. *Church/Faith-Based Clinics*
   vii. *Student (college/university) Health Centers*

Establishing integrated care delivery models has been shown through peer-reviewed research to reduce utilization of higher cost medical, behavioral health, and substance abuse services through improved care delivery and earlier recognition of acute consumer needs by properly trained individuals. In addition, integrated models of care enhance the clinical knowledge and expertise of all providers, to the benefit of consumers. Further analysis is required to identify the exact staffing requirements by community. With any staffing model, emphasis should be placed on ensuring any additional staff required operates at the top of their license.

b. *Incorporate a behavioral health care manager and psychiatrist into the primary care setting. The care manager, with supervision from a psychiatrist, is responsible for tracking consumer progress with standard measures, providing follow-up to increase*

adherence and educating consumers on tools for self-management. The primary care physician utilizes evidence-based algorithms to guide treatment.

In the primary care behavioral health model, the behavioral health specialist primarily serves as a consultant to the primary care provider. Much of the behavioral health specialist's work targets behavioral issues related to medical diagnoses, instead of traditional behavioral health problems like depression and anxiety. Models in which primary care providers are co-located within behavioral health clinics have shown to improve access to medical care, improve communication between providers, and reduce the use of emergency rooms and urgent care services (McGovern, 2014). The presence of primary care services in behavioral health settings and behavioral health services in primary care settings should improve both physical and behavioral health outcomes, enable consumers to be served closer to home, reduce demand for SPHs, and eventually lower costs. Further analysis is required to determine funding implications based on staffing requirements and projected reductions in the overall cost of care for consumers. Adequate technological infrastructure is necessary to facilitate communication and collaboration between providers and reimbursement mechanisms must allow for care management and psychiatric consultation.

4. **Deliver care to consumers in the "Right Place" by expanding the technological infrastructure necessary to transition acute assessment services to community settings and community hospital emergency departments.**

   a. *Expand the reach of tele-health and/or tele-psychiatry so that it is available in other provider settings including emergency departments, rural areas, and other areas where access to psychiatric services is limited.*

   b. *Establish tele-psychiatry host site at an academic medical center with a comprehensive behavioral health program to serve as the base center for tele-psychiatry services in Texas.*

In communities without access to reliable psychiatric services, studies have shown that providing stable linkages to licensed behavioral health providers has supported both ongoing ambulatory management and acute assessment and stabilization services. In the case of acute assessment of behavioral crises in the emergency department, the availability of tele-psychiatry services will allow a substantial increase in the number of emergency departments in Texas that are able to provide acute psychiatric assessment services. These tele-health systems may also mitigate variations in care, education and training throughout the state.

Expanding acute assessment services in local emergency departments via tele-psychiatry services will provide consumers with more convenient and more rapid acute assessment while decreasing the burden placed on public safety officials to support and transport consumers with behavioral health needs. To support a robust tele-psychiatry program, the state of Texas will need to explore funding models to provide emergency departments with the required tele-psychiatry technology and internet bandwidth and security while also designating one comprehensive behavioral health facility in the state to serve as the host site, providing 24/7 tele-psych assessments.

Further study is required to determine costs associated with a comprehensive tele-psychiatry program. These costs are variable and are based on the staffing model employed and technology solution selected. Costs associated with a tele-psychiatry program would be mitigated by potential revenues generated should the state of Texas create tele-health reimbursement codes for consumers enrolled in the Medicaid program.

5. **Deliver care to consumers in the "Right Place" by implementing robust jail diversion programming to reduce over-reliance on criminal justice system and ensure access to the right services.**

   a. *Facilitate movement of forensic populations between the criminal justice and behavioral health system through coordinated re-entry programs for jail and prison inmates needing behavioral health services upon release to the community. Improve collaboration with probation/parole to avoid non-behavioral health admissions and coordination with behavioral health services in corrections, including intake screening and valuation.*

This recommendation should reduce the demand for SPHs and diminish the length of stay in SPHs. Further analysis is required to identify the exact staffing requirements by community. Specific staff should be assigned responsibility for coordinating re-entry of consumers with forensic commitments individuals.

   b. *Expand the existing forensic monitoring to facilitate earlier discharge and decrease readmissions to the SPHs and jails.*

A comprehensive look at community forensic after care programs is needed in order to move away from the current practice of holding patients in the SPHs beyond what is deemed clinically necessary. The forensic monitor staff would serve as the liaison between the criminal justice system, community treatment agencies, and SPHs for people who remain under the jurisdiction of the criminal court system. As the forensic population crosses both the Justice and State Hospital Services program, enhanced forensic monitoring can be part of the interagency coordination and communication mentioned in earlier recommendations. Initiatives that target the forensic population should be collaborative and jointly funded to provide both agencies incentives to participate fully.

Forensic monitoring can be done as part of a Community Forensic Aftercare Program, and the results from other states show a much lower readmission/recidivism rate than for individuals released directly into the community (Wilson, 2011). This success supports expanding monitoring efforts to facilitate earlier discharge and decrease readmissions to the SPHs. Strong linkages with peer support networks as well as supported housing may further boost the program's success.

Right Care Recommendations

6. Deliver the "Right Care" to consumers through strengthening the person centered recovery model of care.

The person centered recovery model of care understands that services for individuals with behavioral health needs cannot be optimized without attention to all aspects of their health and well-being. At the center is the assumption of a proactive model to address wellness, medical, behavioral, psychosocial, and basic needs, all in an integrated and coordinated manner. As a part of supporting wellness, psychosocial, and basic needs, the person centered recovery model of care places an emphasis on supporting non-traditional services and needs such as wellness and fitness, nutrition, and access to healthy foods, development of coping strategies, transportation to and from care and vocational activities, funding for educational and training programs that support gainful resident employment, and housing support.

a. *Transition DSHS to a "person first" model of service delivery where emphasis is placed on collaborating with local mental health authorities, community behavioral health providers, and other resources to ensure consumers have convenient access to all services necessary, and to optimize care in the least restrictive setting and with the greatest amount of self-determination.*

Enhanced access to behavioral health services along the continuum of care has been demonstrated to reduce overall utilization of emergency and more acute behavioral health services while lowering overall costs. Similarly, providing consumers with access to all appropriate behavioral health services will allow them to remain in the least restrictive setting possible. Once established, overall funding of services to consumers with behavioral health needs should not be meaningfully impacted. Providing consumers with behavioral health needs with comprehensive and coordinated ambulatory/community-based services will reduce reliance on inpatient behavioral services and place greater focus on funding community programming over inpatient services.

b. *Support continued growth and development of community resources to ensure consumers are able to access these services with the intention of reducing utilization of higher cost of care services such as emergency department, acute assessment and stabilization, and inpatient resources.*

Enhanced access to behavioral health services along the continuum of care has been demonstrated to reduce overall utilization of emergency and more acute behavioral health services while lowering overall costs. Similarly, providing consumers with behavioral health needs with access to all appropriate services will allow these consumers to remain in the least restrictive setting possible.

> *"I know it is possible and it is time for Texas to have Person Centered treatment that helps people find recovery on purpose, instead of by accident."*
> (J. Biggs, Personal Letter, July 2014)

7. Deliver the "Right Care" to all consumers with behavioral health needs by establishing self-directed consumer funding models for "non-traditional" services that prove beneficial to overall health and well-being.

a. *Expand funding strategies to provide consumers with funding and support for the following services: health and wellness services, nutritional needs, housing, medications, transportation, education/vocational training*

> *"The turning point for me was deciding that I was not going to die in this hospital and I lied to get out. I got into services in the community where I miraculously got a worker who understood first-hand the pain that life can hand you."*
> (G. Morgan, Personal Letter, July 2014)

Enhanced access to health, wellness, and safety net services along the continuum of care has been demonstrated to reduce overall utilization of emergency and more acute behavioral health services while lowering overall costs. Similarly, providing consumers with behavioral health needs with access to all appropriate services will allow these consumers to remain in the least restrictive setting possible.

8. **Deliver the "Right Care" to consumers by expanding the use of peer support services to complement clinical care by licensed staff.**

There is a national movement towards increasing consumer-directed or peer supported care along the continuum. Peer support specialists can be used as part of the transition to community care and can ensure that consumers are linked to community resources when they leave the hospital. Peer support has been demonstrated to help with the integration into the community and to increase access to needed services/resource.

Consumer and provider groups should be engaged to develop a plan for integrating peer support into the current system of care. The plan should address the role of the peer support network in the overall system of care and target efforts needed, training requirements for peer support specialists, and funding mechanisms from the state to support these services.

> *"Getting involved with peers, learning from and supporting each other in our challenges together is in itself a pathway to wellness. The educational classes have empowered myself and empowered other persons with mental health challenges that have been in the system for many years and are not leading productive lives, to step into the recovery and take ownership of their own recovery."*
> (G. Morgan, Personal Letter, July 2014)

a. *Create a role for a peer support specialist to facilitate the transition from inpatient treatment to the community.*

Peer support networks have been proven to be effective tools in providing services across the continuum while complementing the existing clinical care already provided by licensed clinical staff. Evidence suggests that peer support and coaching reduces the number of admissions and days spent in the hospital, the use of acute services, substance abuse, and average service costs per person, while increasing time in the community, social functioning, and satisfaction with life.

The peer support specialist can help the consumer complete an action plan for the transition from the SPH and help connect them to community-based peer and clinical support. To implement this, peer support specialist training will be needed to expand the peer support network in Texas and to meet the government and state certification requirements. In

addition, there are partnership opportunities with state non-profit and for-profit agencies who offer peer support specialist courses and training.

The current Peer Specialist program in Texas is located at Via Hope and provides extensive training and certification for Peer Specialists. These specialists are being deployed at the SPHs and leveraged to enhance the person centered recovery care. It would be most optimal to offer specialized training for peer specialists that focuses on the role of assisting consumers with transition from the SPH to the community. States such as Massachusetts have successfully implemented these roles and had a positive impact on the health, wellness, and recovery of the consumers.

A funding mechanism to subsidize or pay for Certified Peer Specialist training should be strongly considered in order to expand the peer support offering throughout the state. Other states have moved forward with a model of covering certification and training costs through state agencies or county; Georgia offers a model for Medicaid reimbursement for peer support specialists.

b. Encourage the development of peer run crisis respite facilities to decrease the pressure on the medically driven acute crisis services.

Peer-run crisis centers can alleviate the pressure on acute crisis services. Oftentimes, this sub-acute level of crisis is set up as voluntary and peer-run but can serve as an important part of the care continuum. Peer-run crisis centers provide an alternate non-medical crisis resource for consumers with behavioral health needs to process stress, explore short-term solutions, and reduce susceptibility to crisis. Consumers can learn from trained peers and their experiences. This model has been shown to prevent and divert inpatient treatment for people in crisis in a safe environment and provides another venue to avoid hospitalization (Swindle, 1995).

Staffing will depend on the model that is selected and level of reliance on trained certified peer specialists. If a peer-run crisis center is selected to be a pure peer-run respite, additional peer support specialist training will be needed. A hybrid model also exists that attaches the peer-run center to a traditional provider. Additional investigation will be required to determine the preferred peer-run crisis center approach for the State of Texas. For communities with publically funded crisis behavioral health facilities this recommendation should have a net positive economic impact by reducing the number of indigent behavioral health consumers accessing those services.

c. Establish community clubhouses to provide social support and facilitate partnerships with local businesses, housing, and other community services to help link consumers to housing and even supported employment

> *"In my opinion, peer services need to be strengthened within our mental health system. Having a peer provider gives clients a voice."* (A. Tomlinson Personal Letter, July 2014)

Community clubhouses or consumer-operated community centers offer a venue and resource for people with behavioral health needs, who are known as "members", participate in the recovery process by working and socializing together. Community clubhouses can provide additional social support and facilitate partnerships with local businesses, housing, and other community services. They provide one more support mechanism for consumers at a cost significant less

than a traditional clinical setting. This approach complements available psychiatric treatment and provides an alternate non-medical crisis resource center for consumers to continue to engage with the community. According to available research, Clubhouses achieve better transitional employment results for their members, reduce hospital stays, reduce incarcerations, and improve well-being (Finnerty, 2012).

The staffing model is dependent on the model selected for the Community Clubhouses. Many community wellness centers can be peer-run but different models are available. Also, accreditation occurs every two years by the Clubhouse International Standards Review Committee. Payment mechanisms to support these Clubhouse settings require further investigation.

9. Deliver the "Right Care" to consumers by seamlessly coordinating behavioral health services with medical care and substance abuse services.

a. Provide annual funding to support continued growth and development of community substance abuse treatment programming.

Enhanced access to substance abuse services has been demonstrated to reduce clinical decompensation of individuals with behavioral health diagnoses, reduce challenges with accessing safety net services and overall care delivery, and also reduce overall utilization of acute behavioral health services (Grella, 2002). Similarly, providing consumers with behavioral health needs with access to all appropriate substance abuse services prior to clinical decompensation will support allowing these consumers to remain in the least restrictive setting possible.

b. Partner with local mental health authorities to incorporate substance abuse and primary care services in community behavioral health centers while ensuring consumers within SPHs have access to substance abuse services during hospitalization.

Along with behavioral health treatment, the consumer would also receive comprehensive medical care, health and wellness education, and social services that are coordinated by a team of health care professionals (Wusthoff, 2014). As the health care system continues to evolve and further advances are made in the development of medications to treat addictions, providers who offer a wider array of integrated health care services and who coordinate care effectively among multiple providers will reduce the need for stand-alone treatment providers. Establishing integrated care delivery models has been shown through peer-reviewed research to reduce utilization of higher-cost medical, behavioral health, and substance abuse services through improved care delivery and earlier recognition of acute consumer needs by properly trained individuals. In addition, integrated models of care enhance the clinical knowledge and expertise of all providers, to the benefit of consumers.

Further analysis is required to determine funding implications based on staffing requirements and projected reductions in the overall cost of care for consumers. Based on peer-reviewed research, it would be expected that DSHS could expect an overall reduction in the total cost of care for consumers under their purview. Addiction treatment programs can lead to reduced addiction problems, improve health outcomes, and provide an opportunity for the people served to remain employed − a positive economic impact to the individual, their family, and the community.

Right Time Recommendations

10. Deliver care to consumers at the "Right Time" by providing access to on-demand access for services to reduce escalation.

a. *Replicate the model used in Bexar County between the University Health System and the Center for Health Care Services.*

The Bexar County model refers to the psychiatric crisis center that is located in the urgent care clinic at the hospital. In this model, behavioral health providers can immediately refer individuals for a physical examination and quickly seek medical clearance for psychiatric hospitalization if needed. The urgent care clinic can easily refer individuals needing behavioral health services as well. Further analysis is required to identify the exact staffing requirements. Programs seeking to co-locate may have the opportunity to combine a number of administrative duties and reduce the existing FTE complement.

Right Resources Recommendations

11. Aging facilities and infrastructure are functionally obsolete and are not conducive to current clinical, safety, quality, and workforce best practices. An in-depth analysis of the three sites selected for a facilities condition assessment indicates that serious consideration should be given to the gradual replacement of these facilities and infrastructure. However, prior to implementing these specific facility recommendations, it is further recommended that DSHS conduct an in-depth assessment of the remaining eight sites to ensure that any and all nuances and inputs are captured.

Note: For campuses where the preliminary recommendation is for the replacement of a facility, the initial assumption is that the replacement would occur on the site of the existing SPH. However, these recommendations do not preclude the opportunity to replace the facility on a different site, while remaining within the same general service area. As such, there is flexibility within these facility recommendations to allow for further calibration and fine-tuning of the optimal location of any replacement. Further analysis would be warranted if alternate locations were considered,, including the following key factors: Service Area, Economic Impact, Land, and Hospital Size.

a. *Based on an assessment of functional needs, projected bed requirements by service area and the facilities condition index, replacement facility construction is recommended for five SPHs: Austin State Hospital, North Texas State Hospital – Wichita Falls, Rusk State Hospital, San Antonio State Hospital, and Terrell State Hospital. Ongoing maintenance and renovation are recommended for the remaining five SPHs and Waco Center for Youth.*

b. *Due to the age of many of the buildings within the system, and the impact on clinical functionality, and maintenance costs, consideration should be given to gradual replacement across the state with new facilities that are capable of supporting contemporary behavioral health care models, have inherent flexibility to better adapt to shifts in the consumer profile, and embody the features of behavioral health care design current trends and best practices.*

Replacement of outdated facilities would have immediate and significant impacts relative to the overall ability to support contemporary care. The need to proceed with continual renovations that can only temporarily or partially address core issues associated with infrastructure (visibility, safety, security, variety of consumer activity space, staff support space, multi-bedded rooms) would be eliminated.

Replacement facilities similar to the prototype included in this report would provide the following best practice features to support contemporary care and an active treatment model:

- Adequate visibility within consumer areas
- Access to off-unit treatment and therapy space that is less dependent on staff availability, weather, security restrictions, or mobility challenges
- Physical space to ensure proper variety and proximity of daytime activity rooms
- Physical space for appropriate staff support space
- Provision for single or double-occupancy bedrooms only
- Building materials, products, fixtures, and assemblies that provide ligature and tamper-resistance
- Greater flexibility between adjacent consumer areas, for increased staff efficiency and back-up coverage
- Standardization of consumer units and the ability to better adapt to changes in consumer profiles in the near and long-term
- Access to ample outdoor space in an appropriately secured setting

Replacement of outdated facilities across the system would require substantial initial capital funding, as well as a prioritization plan. Costs associated with the maintenance and upkeep of multiple older facilities on a campus would be significantly reduced. With a more consolidated physical facility on campus, staffing costs could be reduced due to less time spent in transit moving from one building to another. Campuses that are likely to be most in need of facility replacement have ample land to allow for construction while the current buildings and site remain operational.

c. The age and nature of the existing facilities are generally not conducive to supporting ongoing population profile shifts, and therefore should be considered for replacement with more flexible physical accommodations.

Provisions for gradual replacement of campus facilities with new structures that embody behavioral health design best practices would permit two conditions: first, the ability to support the two key consumer populations that the state has seen rise over the past decade (forensics and geriatrics); second, the ability to further respond to future changes in the consumer profile, whatever that may be in the future (including the projections included in this report). A replacement facility that could more readily adapt to any consumer population would allow for more flexibility in the system as to where certain populations can and should be treated, increasing geographic choice and allowing hospitals that currently struggle with capacity for civil consumers to better meet that latent demand. Current facilities do not have the flexibility to absorb rapid changes in consumer profile, often resulting in cohorting of non-complementary consumers (at times within the same sub-unit or multi-bedded room). A

facility that could better absorb these changes, and ensure appropriate separation and unit placement, would reduce the safety and security issues associated with combining populations (including increases in aggression). Replacement of outdated facilities across the system would require substantial initial capital funding, requiring some prioritization.

Costs associated with the maintenance and upkeep of multiple older facilities on a campus would be significantly reduced. Costs allocated for renovations could also be reduced. With a more consolidated physical facility, staffing costs could be reduced due to less time spent in transit moving from one building to another.

d. Across the entire system, structures that have been deemed beyond reasonable repair, functionally obsolete, and not cost-effective to renovate should be demolished.

Vacant structures currently pose an operational tax on the various campuses, in that monies must be allocated for basic upkeep. In addition, these vacant buildings pose additional safety risks and often create a negative aesthetic image to visitors and consumers regarding the nature of care provided by the hospitals. Vacant and underutilized buildings often result in consumers and staff having to move further across campuses to get from one destination to another, as vacant buildings are at times located in the center of a campus between other active buildings. This exacerbates the issues associated with multiple buildings and destinations on a campus. The appearance of vacant buildings, especially those in a state of disrepair, can reinforce negative associations and stigma related to behavioral illness.

12. Develop facility design solutions within SPHs specialized for medically fragile, forensic, and behavioral consumers where appropriate, while maintaining other facilities designed to provide services to general consumer population.

a. The system should move toward a higher percentage of private rooms or double-occupancy rooms. In order to achieve this while maintaining capacity, consideration should be given to increasing private room percentage through the replacement of facilities at targeted campuses.

Behavioral health facilities constructed over the past 10 to 15 years have moved to a single occupancy/private bedroom model. Where private bedrooms have not been practical, and in some cases not desirable, double-occupancy has been the maximum. A move to private and double-occupancy rooms would align SPH facilities with this best practice. Lowering bedroom occupancy, and in particular moving to a private room model, results in less noise and sleep disruption, creating a better physical health condition and higher likelihood of participation in daytime therapy and treatment. Single occupancy rooms also increase overall privacy and dignity for the consumer, resulting in a more normalized environment. Private rooms also help to decrease opportunities for consumer-on-consumer aggression/violence.

Replacement of outdated facilities across the system would require substantial initial capital funding, requiring some prioritization. If replacement facilities were pursued, costs associated with the maintenance and upkeep of multiple older facilities on a campus would be significantly reduced. Costs allocated for renovations could also be reduced. With a more consolidated physical facility, staffing costs could be reduced due to less time spent in transit

moving from one building to another. If renovation strategies were pursued, capital funding would likely be less than that of new construction, but some campuses may not be able to support economically viable renovation (i.e., the typical cost savings of renovation vs. new construction may not apply given the age of the existing buildings).

Any construction projects on a campus would have a positive economic impact on the community. Campuses that are likely to be most in need of facility replacement have ample land to allow for construction while the current buildings and site remain operational. Campuses that can economically renovate to achieve lower bedroom occupancies may need to first decant other functions (i.e., movement of the Adolescent Forensic Program away from NTSH-Vernon to Victory Field).

13. Engage in multi-pronged approach to generate funding to DSHS to support capital and operating expenditures across the system.

a. Reduce the overall size of SPH campuses to a target size of one acre per eight to twelve staffed beds through sale or long-term lease of excess lands.

The recommendation promotes a master planning effort for DSHS to leverage its underutilized land assets on its SPH campuses, thereby decreasing operating costs and generating additional funding for capital improvements and/or operations. By reducing the overall size of SPH campuses to the benchmark size, consumers will occupy a smaller overall area that will be more efficiently managed and operated. Efficiencies are gained with respect to monitoring and behavioral management, and smaller acreages will require fewer man hours in terms of site maintenance. Staffing requirements are expected to decrease accordingly. Positive revenue can also be realized from the lease or sale of underutilized land area, while the sale or lease of underutilized land area will increase the supply of developable land in the local markets. While demand for new development in each area will vary depending on location, site configuration, and local market conditions, the additional supply will generally place downward pressure on land values. Consequently, the likelihood of new development in the surrounding communities will tend to increase.

Existing buildings on SPH campuses may have to be redeveloped or repurposed to achieve the target size of one acre per eight to twelve staffed beds. Prior to sale or lease, the legal impact of the bond indebtedness must be ascertained. Additionally, it is recommended that professional estimates be obtained regarding the fair market rent and/or fair market value of the underutilized land to be sold or leased.

14. Continue processes to modernize technological infrastructure at all SPH campuses currently underway at many SPH sites.

Projects to renovate technology systems within existing facilities will require master planning for the entire SPH portfolio of facilities in order to establish HUBs, data rooms, and infrastructure networks within and between campuses and buildings, over secure cable- and/or wireless-based networks. All systems being proposed and installed must comply with state (and potentially Federal) health care privacy laws, as well as local/state building codes.

a. Improve network infrastructure to allow for future tele-health capabilities for educating community care providers and providing specialized care to remote individuals.

This recommended action is vital to improving the standard of care by providing the infrastructure for state-of-the-art communications and technology systems for each campus in order to improve the use of medical record-keeping and health care services. This recommended action provides the necessary mechanisms to integrate caregiver services with modern administrative and health care processes at each SPH campus to improve delivery of services, as well as utilize state funding most efficiently and effectively.

At every location, this recommendation will leverage staffing most effectively and streamline processes by allowing more automation and reducing time needed to deliver services. Implementation planning is necessary to program this recommendation at each campus using anticipated funding levels for information technology upgrades.

b. Add wireless networking and campus wide communication systems.

This recommended action is vital to improving the standard of care by providing the infrastructure for state-of-the-art communications and technology systems for each campus in order to implement/improve the delivery of health care practice services. At every location, this recommendation will improve consumer, family, and visitor experiences by allowing access to internet and mobile networks, and also leverage staffing most effectively and streamline processes by reducing time needed to deliver services.

c. Upgrade telecommunication systems to support new technologies.

This recommended action is vital to improving the standard of care by providing the infrastructure for state-of-the-art communications systems for each campus in order to implement/improve the delivery of health care practice services. This recommended action provides the necessary mechanisms to integrate caregiver services with modern administrative and health care processes at each campus to improve delivery of services, as well as utilizes state funding most efficiently and effectively.

15. Where Facility Condition Indices (FCI) indicate that cost to maintain system deficiencies is well below the Current Replacement Value, upgrade and maintain infrastructure and systems when appropriate and necessary.

Providing a stable, comfortable, and pleasant interior environment allows consumer care and administrative services to be delivered at a much higher level of quality and improves the overall experience of consumers and their supporting families/visitor networks. The psychology that supports human behavior with respect to their environments is critical to providing the proper foundation for daily care and activities.

Utilizing the most current data collected from the 2014 Facility Condition Assessment (FCA) process, multi-year capital improvement plans (CIP) will be implemented to establish funding needs for all priority requirements related to exterior envelope requirements. Deficiencies identified during the FCA from zero to ten years are included in the ten-year

CIP and ordered according to the input received from SPH facility personnel. Structural obsolescence in this report is defined by a Facility Condition Assessment Score greater than 0.6, which is considered "poor" condition, while renovation/replacement of existing systems is considered for Facility Condition Assessment Scores less than 0.4. The total number of repair and maintenance costs for any asset is referred to as the Deferred Maintenance Deficiencies (DMD). Each property is assigned a Current Replacement Value (CRV), that is, the cost of labor and material that would be required to replace the building. The value of the Deferred Maintenance Deficiencies divided by the Current Replacement Cost of each asset yields the Facility Condition Index (FCI). For example, an FCI greater than 0.6 indicates that the cost of repair and maintenance is 60 percent of the cost of replacing the building.

Master planning for the entire SPH portfolio of facilities is necessary to establish priorities for design and construction projects within and between campuses and buildings in order to address the identified needs. Design and construction contract work must comply with all professional architectural and engineering regulations applicable in the State of Texas, and all building codes, as well as labor and construction regulations.

a. Repair and/or upgrade exterior envelopes, i.e., cracked foundations, masonry tuck-pointing, roof replacements, window replacements for longevity, safety, and energy efficiency.

Exterior systems which wrap the exterior of a building, such as walls, windows, doors, and roofs comprise the building "envelope." The combination of these various systems may be different from building to building, but together they should always complement each other to control interior living and non-occupied environments. Older facilities often require repair and/or replacement of these systems over time to ensure the interior spaces are comfortable, dry, healthy, and secure. When the envelope systems become compromised, the building itself and its heating, cooling, electrical, and other systems begin to overwork and prematurely expire or malfunction. Common symptoms include: uncontrollable temperasures, moisture-related issues, drafts from air infiltration, etc. Maintaining the envelope systems in good condition is therefore important to continue occupying and using facilities as intended, as well as ensuring longevity, safety of occupants, and optimization of the usage and cost of energy.

This set of recommended actions will repair and improve the facilities that are in fair to good condition to the extent that indoor environments are assured to be weather-tight, comfortable, controlled with respect to heating/cooling/humidity, and energy-efficient. Exterior envelope systems must be reliable and maintained in order to protect interior spaces and increase longevity of the building.

Examples of exterior upgrades include: repair/repoint masonry and exterior cladding materials; canopies that shade that incorporates safety lighting, creating shadow effects to enhance flat facades and protect and identify key entrances; user friendly entry door hardware; entry doors with increased vision panels; vibrant cladding surrounding entrances; sunshades above existing windows; exterior building lighting fixtures; site lighting fixtures and visually distinct pathways. These upgrades, while minor in their nature and scope, can

strategically focus attention to align the perception of the exterior space with the more up-to-date interior.

b. Replace older interior finishes with more current materials, palettes, and textures to enhance quality of life environments of staff and care consumers.

While the various systems within any facility are vital to the intended use and occupancy, the visual environment is also very important, especially in providing services to consumers. The various palettes, textures, and materials that are used in facilities that function for the staff and care of SPH consumers will impact their safety, demeanor, behavior, and quality of life. This typically includes floor finishes such as carpet, tile, and resilient flooring as well as millwork, cabinets, countertops, ceilings, light fixtures hardware, and paint and wall coverings. Older finishes, which may or may not meet out-of- date building codes, do not provide the same level of protection as modern buildings in terms of smoke development and flammability, and can fail more easily due to daily use. Newer finishes are typically selected based on the occupancy, code, and safety requirements, etc.

This set of recommended actions will repair and improve the facilities that are in fair to good condition to the extent that indoor environments are intended to be comfortable, pleasant, and appropriately designed to enhance and complement the delivery of health care services based on the occupancy. Interior finish systems must be durable, sanitary, reliable, and maintained in order to comfort and protect consumers and staff.

c. Construct central heating/cooling plants for redundancy, energy efficiency and reduced maintenance footprint.

This set of recommendations is suggested for reducing the maintenance needs by centralizing heating and cooling systems in lieu of the current stand-alone individual building systems condition. The use of central heating and cooling plants is typically successful for multiple-building locations that are under the control of a common operating entity. Campuses that have buildings clustered closely enough may benefit in energy use by sharing utilities that have larger equipment and distribution networks (e.g., piping, electrical power supply) versus individual heating and cooling units located in facility mechanical rooms or on rooftops. The footprint of separate building plants is oftentimes much larger and more costly because maintenance practices may not followed consistently, replacement units may not be the same across buildings, and older units may be less efficient in terms of energy usage and operational costs.

It should be noted that, as part of an energy savings performance contract a few years ago, a number of state psychiatric hospitals did have in place centralized steam and hot water systems. However, these were replaced with smaller package units as the previous systems were inefficient and the distribution piping and valves were in need of repair. This new recommendation to construct central heating/cooling plants should be taken in context of accompanying recommendations in this section to reduce and consolidate the overall size of SPH campuses to a target size of one acre per eight to twelve staffed beds.

By reducing the amount of large equipment elements that are present in each facility, costs may be reduced and labor that is now dedicated to each smaller system's upkeep may be redirected to other critical functions. This recommended action provides a mechanism to improve delivery of services with better control of systems, as well as utilize state funding for utilities most efficiently and effectively.

Removing large HVAC equipment elements from each facility could be done after centralizing utilities into one campus plant. Facilities staff may be shifted and consolidated to maintain other systems that may currently be neglected. Some retraining of facilities staff may be necessary or desired. A cost-benefit analysis and return-on-investment/payback study should be conducted to first establish the viability of this recommendation, and a master plan implemented afterwards to determine locations of suggested facilities/utility systems at each campus. At San Antonio, it would be necessary to also study the existing abandoned facility and system to determine repair or replacement needs.

d. Upgrade lighting fixtures and install automatic control systems.

Over time, lighting fixtures have decreased output as ballasts wear out. These fixtures are quite often not maintained as needed and may become dirty, further decreasing light output. Without automatic controls, lighting may be allowed to remain on when unnecessary, output and intensity may be uncontrolled, and distribution may be inconsistent, creating bright and dark spots. New lighting and controls can change the interior environment significantly, creating more functional and pleasant distribution of light, as well as saving energy by using occupancy sensors and dimming switches.

Interior, egress, and exterior lighting systems must provide specific foot-candle levels to illuminate spaces and surfaces based on occupancy and life safety requirements. Existing facilities must be safe and comfortable for all occupants, and control systems should be utilized to the maximum extent for energy efficiency benefits.

e. Repair/replace Air Handling Units and ductwork to reduce exfiltration and energy use. Install additional Variable Frequency Drives (VFD) and programmable controls.

Ductwork systems that have aged typically have poor sealant and expansion materials at sectional seams and joints, eventually allowing forced air either out or in. This air leakage impacts the equipment that operates to supply or return air to or from spaces by requiring the units to operate beyond their intended levels to account for the air loss. New joint sealants combined with new insulation significantly reduce the impact on equipment and usually extends life cycles, thus reducing costs over time.

Variable Frequency Drives allow for the local control of the flow of air or water at multiple points throughout the building. VFDs are linked and operate as a comprehensive system and accelerate or decelerate in unison to achieve the desire effect at the highest efficiency and lowest cost. Automatic programmable controls and building management systems allow for control to determine both when and how systems increase or decrease their output. For example, room occupancy sensors activate cooling systems once entered and occupied by people. Rooms requiring cooling for equipment are programmed to provide it only at the

times required by the equipment. This optimization can be achieved for lighting, heating, and any other electronic systems throughout the building or campus.

Heating, cooling, and ventilation (HVAC) systems must provide specific temperature and air change levels based on occupancy and life safety requirements. Existing facilities must be safe and comfortable for all occupants, and control systems should be utilized to the maximum extent for energy efficiency benefits. VFDs provide the ability to meet all requirements for HVAC needs as well as reduce energy use via programmable control system technology.

f. Develop a campus energy manager position and measurable energy use reduction program.

Heating, cooling, and ventilation (HVAC), lighting, plumbing, exterior envelope, and other building systems must function optimally in order to provide useable facilities with stable interior environments. Existing systems should be operated to the maximum extent for energy efficiency benefits. Implementing the creation of an energy manager position at each campus requires annual salary and benefit funds which may be offset by the savings achieved when new processes and building systems installations are executed. State of Texas energy-savings incentives also will provide a revenue source for the SPHs for implemented initiatives. The creation of a small number of new jobs may result from this recommendation, as well as additional jobs related to energy-related improvements enacted by a campus energy manager.

A plan to introduce this new position is necessary to establish salary levels, duties to be assigned, qualifications required for the person, etc. Funding must then be allocated annually. A supervisory structure within the SPHs and performance rating system created to measure achievements and future goals are also necessary. State of Texas energy-savings incentives should be studied to plan the program objectives and target annual thresholds of energy reductions in order to obtain revenue from the benefits.

g. Perform retro-commissioning on existing systems for optimal performance.

Systems that have been operating for years may begin to function less optimally over time. Retro-commissioning allows the equipment to return to close to its original specifications and identifies issues that can be remedied to save energy and extend the life cycles of the equipment. This “tune-up” process also identifies problems that may result in recommendations to replace equipment with more efficient and oftentimes smaller units.

Heating, cooling and ventilation (HVAC), lighting, plumbing, exterior envelope, and other building systems must function optimally in order to provide useable facilities with stable interior environments. Existing systems should be operated to the maximum extent for energy efficiency benefits. Master planning for the entire SPH portfolio of facilities is necessary to establish priorities for retro-commissioning processes within and between campuses and buildings to address the identified needs.

h. Provide accessible, barrier-free travel into/within facilities that are not currently ADA-compliant.

This recommended action is vital to improving the standard of care by providing facilities and spaces that are accessible to all occupants with mobility challenges to improve the delivery of health care practice services. Consumers, family members, visitors, and staff must have the ability to move into and within facilities to perform their functions in a barrier-free manner so that the best care and administrative services can be provided.

Providing accessible entrance/egress elements and interior environments allows delivery of all consumer care and administrative services by staff and other professionals in the most effective and productive manner. It also creates a positive environment that consumers may function in that correlates with the desired behaviors involved in their care. Many facilities may have "grandfathered" conditions that are allowed to remain as long as reasonable accommodations are provided to allow access and movement for mobility-challenged individuals.

i. Perform protective device coordination study to improve reliability and arc-flash analysis to increase safety when maintaining electrical equipment.

A protective device coordination study uses a computerized model of the electrical system to determine the optimal settings for all fuses, circuit breakers, relays, and other protective devices in an electrical system in an effort to eliminate upstream protective devices clearing downstream electrical faults. For example, with a properly coordinated electrical system, a fault on a 20-amp lighting circuit would trip the local 20-amp circuit breaker protecting that branch circuit instead of tripping the main circuit breaker feeding that panel. A properly coordinated electrical system provides improved reliability by localizing faults within a system to a smaller area.

An arc-flash analysis also uses a computerized model of the electrical system to determine the faulted energy levels at equipment locations within the electrical system. With the results of this analysis, printed labels can be applied to the electrical equipment to identify the potential energy level that exists, and identifies what personal protection equipment (PPE) is needed by a worker while working on that particular piece of energized equipment. This analysis and the labels are done to improve the safety for those who work on the electrical equipment.

Older electrical systems still exist and may or may not comply with current code requirements with respect to safety and maintenance practices that are necessary on a regular basis. Parts may not be available in some cases which makes maintaining equipment difficult or infeasible. The risk and impact of failure of these systems is high and would severely affect all occupants if failure occurs.

j. Install fire suppression systems in buildings where appropriate.

Many older buildings may not have comprehensive or installed systems that activate by fire alarms to stop fire spread. Without proper coverage to suppress fires in facility spaces,

residents may be exposed to dangers in emergencies caused by fire and smoke. Installing sprinkler systems that provide adequate coverage increases the safety of residents and staff and protects the assets with in each building.

This recommended action is vital to providing facilities that are safe during emergencies, which may not affect daily functions, but translates into higher levels of confidence that occupants will be protected. Adding these systems also permits the maximum occupancy within any facility.

k. Separate emergency power circuits into required branches in consumer care areas.

The National Electrical Code (NEC Article 517) requires that the essential electrical system in health care facilities are divided into separate branches. In a typical nursing home and limited care facility, the essential system would be divided into two branches - the Critical Branch and the Life Safety Branch.

The Critical Branch typically feeds loads that are located within resident care areas such as medication prep areas, pharmacy dispensing, nurses' stations, treatment areas, exam rooms, etc. The Critical Branch is also used to power heat equipment for resident rooms, air handling, and exhaust equipment used for infectious isolation rooms and other similar HVAC equipment.

The Life Safety Branch typically feeds emergency lighting along the paths of egress, exit signs, emergency communication systems, required elevators that are supported by emergency power, and other similar loads the support the safety and well-being of the general building population.

This recommended action is vital to providing facilities that are safe during emergencies, which may not affect daily functions, but translates into higher levels of confidence that occupants will be protected. Adding these systems also permits the maximum occupancy within any facility

"The patient had still not received any type of mental treatment approximately 24 hours after being taken into custody by sheriff's office personnel"
(Limestone County Sheriff's Office, Personal Letter, July 2014)

16. Deliver care to consumers using the "Right Resources" by providing person centered recovery care coordinated by the local MHAs, leveraging local service via care and resource coordinators

a. Establish Care and Resource Coordinator role to include active coordination of all aspects of consumers with behavioral needs including, but not necessarily limited to: wellness, nutrition, coping strategies, safety net services (housing, transportation, etc.), medical care services, substance abuse services, community behavioral health services, discharge planning, and follow-up care for inpatient admissions

In care delivery models where similar roles have been developed to support the complex needs of consumers with acute and/or chronic conditions, care and resource coordinators have been shown to reduce the overall cost of care through more effective and timely

resource utilization. In addition, care and resource coordinators have also been shown to increase assurance of consumer compliance and access to necessary services, while reducing inpatient hospitalizations, lengths of stay, and inpatient readmissions tied to discharge planning failures. Further analysis is required to determine the FTEs required to support this initiative. While it would be expected that this role would be assumed by community agencies or the local mental health authorities, DSHS should play a role in supporting efforts to craft the scope of services provided. Staffing requirements will also be dependent on the consumers targeted for these services. At a minimum, it would be recommended that the consumer cohort representing the highest annual cost of care be included.

17. Deliver care to consumers using the "Right Resources" by responding to projected demand and ensuring Texas retains its existing behavioral health providers

a. Continue to examine compensation packages for direct care providers and support staff recognizing the importance of their role in provision of behavioral health services at SPHs and to mitigate impact of market competition with the goal of moving compensation toward the 50th percentile relative to the local market.

Recognizing that there is a shortage of qualified staff with appropriate training and skills for the specific populations that the SPHs serve, it will become increasingly important that compensation packages for critical frontline staff is on par with market rates.

A market wage assessment for state employees is recommended to determine and address major gaps in compensation and benefits. Funding implications would be based on the size of the compensation adjustments and the timing of adjustments. In addition, further study is recommended to quantify the financial impact of direct care staff turnover and overtime required to support inadequate staffing, recruitment costs, and training costs tied to new staff.

b. Continue annual continuing education/career development fund for appropriate employees to promote investment in professional development to benefit of SPHs.

Studies across industries have demonstrated that continued investments in staff training with regards to continuing education yield considerable benefits as it relates to performance and safety. Within the SPH environment, continued focus on training initiatives can be expected to have an impact on the following performance metrics:

- Quality
- Consumer injury/harm
- Staff workers compensation claims
- Staff turnover
- Regulatory compliance

c. Establish loan-forgiveness programs for service commitments for difficult-to-fill positions.

With loan-forgiveness programs tied to service commitments, benefit can be expected from reduced turnover of direct care staff which promotes improved relationship between SPH consumers and direct care staff while facilitating greater understanding of the unique needs

of each consumer with overall reductions in the risks associated with transitioning care between providers. Staffing resources would be required at DSHS to support this recommendation.

d. Fund additional psychology training programs to support expected workforce demands.

> *"If there were things that would have helped me more, it might have been a warm hand for the transition from Fredonia to my apartment."*
> (Linda H., Personal Letter, July 2014)

Recruiting additional licensed behavioral health providers is necessary to ensure an adequate supply of workforce to meet projected demand. With fewer psychology training programs than peer states in terms of population, Texas is at a disadvantage with respect to developing tomorrow's workforce. Increasing the number of psychology training programs/residencies will allow the state to cultivate a workforce that understands the unique needs of Texas consumers with behavioral health needs while reducing the overall recruitment costs tied to enticing out-of-state professionals to relocate to Texas.

Further analysis is required to determine the staffing necessary to operate additional psychology training programs and residencies. The staffing implications for DSHS will be dependent upon the number of SPHs electing to participate in the expansion. Further study is warranted to assess funding strategies to support additional training programs and the extent to which the state of Texas would be required to provide funding to incentivize institutions to expand psychology training program. In communities where new training programs are opened there would be a net benefit to the community with respect to additional service offering for consumers with behavioral health needs.

e. Consider participation in the H-1B visa program for difficult-to-fill licensed professional positions.

With the H-1B visa program, benefit can be expected from reduced turnover of licensed professional staff, which promotes improved relationship between SPH consumers and care staff while facilitating greater understanding of the unique needs of each consumer with overall reductions in the risks associated with transitioning care between providers.

Staffing recourses would be required at DSHS to support this recommendation. Depending on the size and stature of the program the FTE requirement is typically 1.0 FTE for the program administrator and 1.0 FTE for an administrative support person. This position could likely be filled by the same staff administering loan-forgiveness programming. Funding implications would be based on the number of H-1B visa positions necessary. Participation in the H-1B visa program should be tied to those licensed professional categories with critical staff shortages unable to be met by the available workforce in the community. Additional analysis is warranted to assess the overall financial impact when reduced expenses tied to staff turning over, recruitment, and training/orientation are considered.

Section 8. Global Assessment of Infrastructure Summary – Facility Planning

Overview

This section represents a summary of the facility observations and findings from a review of the SPH campuses. The summarization of the key themes includes some generalization of the observations across the entire system, but is not intended to imply that all campuses are equal. In addition to the key themes brought forward in the body of this document, refer to the detailed report providing individual commentary on each of the 11 campuses, provided as an Appendix. Of the 11 campuses, three were selected for a more detailed review, including in-person interviews and tours (Rusk State Hospital, North Texas State Hospital – Vernon Campus, and San Antonio State Hospital) per the requirements issued by the RFP. These three campuses were selected as being representative of the diverse conditions between urban and rural locations. The remaining eight campuses were reviewed utilizing individual building plans, site plan, aerial photography, and building photography.

Best Practices and Benchmarking in Behavioral Health Care Design

A formal presentation was provided to DSHS leadership on June 3, 2014 focusing on current trends and best practices in behavioral health care design, along with facility benchmarking information on several contemporary psychiatric hospitals over the past ten years. The complete presentation is available in the Appendix, and key points are summarized below.

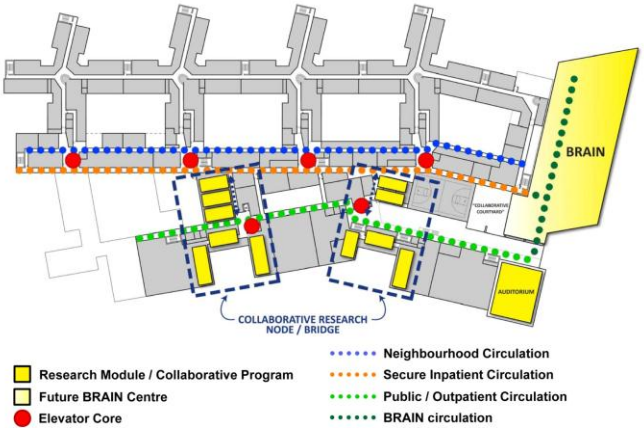
Current Trends and Best Practices

The following is a brief summary of the current trends and best practices outlined in the presentation:

- Behavioral health care has shifted its approach to one of active treatment, integration with primary care, normalizing environments, community care, consumer empowerment, and a focus on the overall continuum of care.
- Infrastructure projects are focusing on the replacement of outdated and obsolete facilities, increased need for community-based program including supported housing, response to increased demand for forensic services, crisis stabilization units, and dedicated Comprehensive Psychiatric Emergency Programs (CPEP) in community hospital EDs.
- The therapeutic platform extends beyond traditional interior spaces to include outdoor environments: that is, buildings and site offer a holistic setting with access to the natural landscape, views, and daylight.

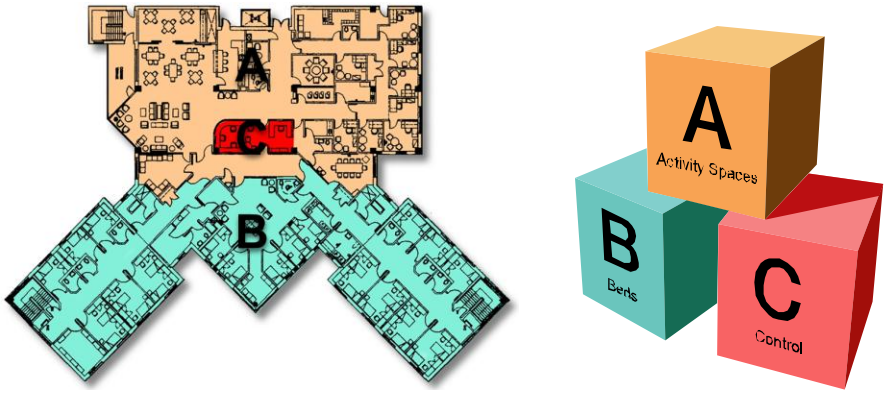
Functional exterior spaces extend the therapeutic platform

- Unit design is becoming more standardized and modular, with a focus on the flexibility needed to more readily adapt to near and long term shifts in consumer profiles and populations.
- Research is becoming more integrated within the consumer environment.



Research that is visible and accessible, is more likely to be engaged in by consumers

- Facilities are incorporating space and function for community access to reduce stigma associated with behavioral health issues, including provisions for use of gymnasia, pools, auditoria, and gathering space when not in use by consumers or staff.
- Active daytime treatment is being offered in “therapy malls” that offer amenities that consumers are likely to utilize in their communities, including clothing stores, libraries, cafes, movie theaters, fitness rooms, and salons.
- Appropriate zoning of resident units is essential to provide optimized care and treatment opportunities, focusing on activity, bedroom, and controlled staff/ support areas as distinct areas within the unit, organized around a central “awareness point.”



Establishing unit zoning that supports an active treatment model of care

- Unit design is incorporating distinction between "on-stage" and "off-stage" areas, to minimize disruption of treatment activities on the unit (i.e., food delivery and waste removal occur in an "off-stage" area).
- Greater variety of activity and social spaces are being provided on the unit, affording a greater level of choice and control for consumers.
- Resident bedroom accommodations have shifted to a 100 percent private room model.

Examples of private consumer bedrooms

- Increase in availability of products, fixtures, and assemblies in the marketplace that are designed specifically for the behavioral health care environment, offer improved balance between safety/ security features and cost, durability, aesthetics, privacy, and clinical functionality.

Benchmarking

As part of the presentation, thirteen facilities from eleven states and one province were benchmarked against key statistical categories including year of construction, number of beds, total facility size, and construction cost. In addition, six facilities were explored in further detail with respect to their key features, design layouts, and how they embodied the trends and best practices identified above. The following table summarizes the key benchmarking data found in the presentation.

Facility	Year	# Beds	Total SF	BGSF / Bed	Const Cost	Const. Cost / Bed	Cost / SF
Center for Forensic Psychiatry – Michigan	2005	210	330,000	1,571	$93M	$442,857	$282
Central Regional Psych. - North Carolina	2008	432	488,500	1,131	$110M	$254,630	$225
Western Tennessee Mental Health Institute	2010	162	Unknown	Unknown	$56M	$345,679	Unknown
Saint Elizabeth's – Washington, DC	2010	293	450,000	1,536	$140M	$477,816	$311
Oregon State Hospital	2011	620	700,000	1,129	$350M	$564,516	$500
Western State Hospital – Virginia	2012	246	336,000	1,366	$125M	$508,130	$372
Worcester State Hospital – Massachusetts	2012	320	430,000	1,344	$302M	$943,750	$702
Bryce Hospital – Alabama	2013	268	225,000	840	$73M	$272,388	$324
Eastern State Hospital – Kentucky	2013	239	300,000	1,255	$129M	$539,749	$430
Juravinski Center for Integrated HC – Ontario	2014	305	850,000	2,787(1)	$350M	$1,147,541(1)	$412
Waypoint Forensic Center – Ontario	2014	200	350,000	1,143	$250M	$1,250,000	$714
Average		**300**		**1,257**		**$559,952**	**$388**
Riverview Psychiatric Center - Maine(2)	2004	92	125,000	1,359	$22M	$239,130	$176
Coalinga State Hospital - California(2)	2005	1,500	1,200,000	800	$314M	$209,333	$262

(1) Juravinski Center BGSF/Bed and Cost/Bed figures are heavily influenced by large outpatient, academic, and primary care components integrated into the facility, and therefore these specific values are not factored into averages

(2) Statistical Outliers in total beds (92 and 1500) are not factored into any averages

Recommendations Related to Facilities/ Infrastructure

Due to the age of the facilities and infrastructure, the functional obsolescence of many of the resident buildings throughout the system, and the presence of numerous vacant and deteriorated structures, it is recommended that DSHS consider replacing infrastructure with new facilities that are capable of supporting contemporary behavioral health care models, have inherent flexibility to better adapt to shifts in the resident profile, and embody the features outlined in the current trends and best practices section of this report. While the majority of building stock can be characterized as aged and in need of replacement, not all sites are in urgent demand for such replacement, and there is some level of hierarchy across the system with regards to which sites are in the greatest need. As noted earlier, CannonDesign was retained to perform a review of the 11 state hospital sites, though only three of these sites were to be toured and visited in person, while the other eight were to be reviewed using existing documentation. Prior to moving forward with any of the specific facility recommendations below, initial recommendations are to visit and analyze the remaining eight sites to ensure that any and all nuances and inputs are captured. This suggestion notwithstanding, the following matrix provides an initial outline of high-level recommendations for each of the 11 sites.

There are a number of factors that play a role in whether an existing facility should be maintained, replaced, abandoned, or otherwise augmented, and thus it is important that these factors each be analyzed collectively in order to arrive at a holistic recommendation. For this effort, three elements were specifically examined at each site:

- Planning Assessment – are the facilities functionally adequate?
- Bed Need Assessment – are the facilities appropriately located to support future demand?
- Physical Assessment – are the facilities no longer cost-effective to maintain?

Viewed in isolation, each of these factors could lead to a slightly different set of conclusions. As they each play an important role in the ability to deliver behavioral health care that meets the current standard of care, each factor was organized into a consolidated matrix that concludes with a preliminary recommendation for each individual site. In general, the findings and factors were found to align closely with one another at each site (e.g., functionally obsolete campuses / facilities were usually accompanied by high capital and deferred maintenance costs, and vice versa). Also, the bed analysis and demand forecast indicate that no current state hospital is presently located in a sub-optimal area.

For campuses where the preliminary recommendation is for the replacement of a facility, the initial assumption is that the replacement would occur on the current site of the existing state hospital. However, these recommendations do not preclude the opportunity to replace the facility on a different site, while remaining within the same general service area. As such, there is flexibility within these facility recommendations to allow for further calibration and fine-tuning of the optimal location of any replacement. Further analysis would be warranted if alternate locations were considered, including the following key factors:

- **Service Area:** Any shift in location of an existing state hospital will impact the two-hour drive time perimeter. While this could have minimal impact if a new site was relatively close to the existing campus, a more significant shift would likely influence (positively or negatively) the overall number of consumers within two hours of any one facility. For example, if San Antonio State Hospital were replaced on a new site further south, this would potentially improve access for consumers in Laredo and other communities in the Rio Grande Valley. It would also simultaneously have an impact on consumers living between San Antonio and Austin, as they would now potentially shift to being within Austin's service area, or perhaps fall outside of the two hour perimeter of either facility.
- **Economic Impact:** Any shift in location of an existing state hospital must be considered with respect to the impact on a community's local economy. As stated in the real estate portion of this report, rural communities such as Rusk, Terrell, and Wichita Falls would be severely impacted by any move of the facility away from those areas. Alternatively, a shift in location in San Antonio or Austin would have much less local impact, given the highly urban nature of these cities.
- **Land:** The ability to replace a facility on its existing site has the obvious benefit of knowledge of the site's attributes, and no cost for land acquisition. Consideration of any new location would need to consider the availability, suitability, and cost of land for

purchase. For example, Rusk State Hospital currently sits on a campus that includes amenities that may not be readily available elsewhere (including significant greenspace, lake with campground amenities, etc.).

- **Hospital Size:** Theoretically, a replacement hospital could be any size (bed capacity). However, there is a practical bed capacity range that will permit beneficial economies of scale and efficiencies. As outlined in the facility benchmark portion of this report, the average bed capacity is 300, with a range generally spanning 200 to 350 beds. While it may be worth considering splitting a large state hospital into two smaller campuses to decrease drive times for consumers and their families, this always needs to be weighed against those ideal bed capacity ranges (along with ongoing operational and staffing costs which tend to increase with more numerous, yet smaller, facilities).

State Hospital Campus	Planning Assessment Are the campus and its facilities functionally adequate to support contemporary behavioral health care?	Facility Recommendations
Austin State Hospital	▪ Primary consumer buildings date to the 1950s; child and adolescent structures were built in 1973 ▪ Historically significant building dates to the 1850s ▪ Aging infrastructure is old and is poorly suited to support contemporary care ▪ Campus is extensive and many consumer destinations are located in different buildings	**Replacement Facility** Replace facility at Austin State Hospital site: 350 bed facility ($175M) [(2)]
Big Spring State Hospital	▪ Primary activity and therapy building is adequate (built in 1992) ▪ Primary consumer buildings date to the 1950s; some renovation has occurred to improve functionality ▪ Campus is moderately spread out (inpatient, activity, and admin. spaces are in different buildings)	**Maintain and Renovate** Continue periodic renovation and ongoing maintenance
El Paso Psychiatric Center	▪ Newest campus in system (built in 1996) ▪ Only campus with a single building	**Maintain & Add Capacity** Continue periodic renovation and ongoing maintenance
Kerrville State Hospital	▪ Primary consumer building is adequate (Ross Building, built in 1994) ▪ Other buildings are much older, though they are primarily used for administrative and support functions	**Maintain and Renovate** Continue periodic renovation and ongoing maintenance
North Texas State Hospital – Wichita Falls	▪ Primary consumer buildings date to the 1920s and 1930s and are poorly suited to support contemporary care ▪ Campus is extensive and many consumer destinations are located in different buildings ▪ Care units are in several different buildings	**Replacement Facility** Replace facility at Wichita Falls site: 250 bed facility ($123M) [(2)]

State Hospital Campus	Planning Assessment Are the campus and its facilities functionally adequate to support contemporary behavioral health care?	Facility Recommendations
North Texas State Hospital – Vernon [1]	▪One consumer building and the primary activity / therapy buildings are adequate (built in 1989 and 1996) ▪Adolescent program (+/-75 beds) is moving to Victory Field site, opening up capacity and renovation opportunities on site ▪Campus is moderately spread out (inpatient, activity, and admin. spaces are in different buildings)	**Maintain and Renovate** Continue periodic renovation and ongoing maintenance
Rio Grande State Center	▪Primary behavioral health building is adequate (Wayne Potter Building, built in 1991) ▪The presence of the recently renovated outpatient building (Building 500) provides opportunities for improved integration of primary and behavioral health care ▪Ancillary buildings are older (1950s) and are candidates for renovation or replacement, though some of these are utilized for SSLC functions	**Maintain and Add Capacity** Continue periodic renovation and ongoing maintenance
Rusk State Hospital [1]	▪Primary consumer buildings date to between the 1920s and 1970s, and are poorly suited to support contemporary care ▪Campus is extensive and many consumer destinations are located in different buildings ▪Care units are in several different buildings ▪Historically significant building dates to the 1880s	**Replacement Facility** Replace facility at Rusk site: 350 bed facility ($167M) [2]
San Antonio State Hospital [1]	▪Primary consumer buildings date to between the 1930s and 1970s and are poorly suited to support contemporary care ▪Campus is extensive and many consumer destinations are located in different buildings (significant distance between two primary consumer zones) ▪Care units are in several different buildings	**Replacement Facility** Replace facility at San Antonio site: 350 bed facility ($175M) [2]
Terrell State Hospital	▪Primary adult consumer buildings and administrative support buildings date to between the 1920s and 1970s and are poorly suited to support contemporary care ▪Campus is extensive and many consumer destinations are located in different buildings ▪Adolescent and Geriatric buildings are newer than the remainder of campus (built in 1985), but represent a small portion of overall site	**Replacement Facility** Replace facility at Terrell State Hospital site: 350 bed facility ($167M) [2] ▪**Accompanying Care Model and Human Resource Recommendations for DSHS SPHs**
Waco Center for Youth	▪Largest and most central consumer building is adequate (Brazos Building, built in 1998) ▪Other residential buildings are candidates for renovation or replacement ▪Campus is moderately spread out (residential, activity, and admin. spaces are in different buildings)	**Maintain** Continue periodic renovation and ongoing maintenance

State Hospital Campus	Planning Assessment	Facility Recommendations
	Are the campus and its facilities functionally adequate to support contemporary behavioral health care?	
Potentially Un-served Areas	**Waco / Dallas / Arlington** New facility in the Waco / Dallas / Arlington area: 200 bed facility ($108M) [(2)] **Amarillo** Pursue community purchased bed strategy and/or utilize existing SPH closest to consumer origin (NTSH - Wichita Falls and Big Spring) **Houston** Continue community purchased bed strategy and/or utilize existing SPH closest to consumer origin (Rusk)	

The following table illustrates a high-level comparison of costs associated with proceeding with the recommendations to construct five new replacement facilities as outlined above, versus not constructing new replacement facilities (with the intention of clarifying the two approaches in an "apples-to-apples" manner, to the extent that this is possible). The table includes both quantitative and non-quantitative costs. Quantitative costs include those items that have a relatively tangible estimated dollar value associated with them. Non-quantitative costs include those items that are either difficult or not possible to measure in a tangible / comparable way, or whose value is qualitative in nature. These particular costs, while not defined with an explicit value in this table, play a significant role in the long-term impacts on the overall cost of delivering behavioral health services across the State of Texas.

Cost Category	Cost Column A: Costs Associated with New Replacement Facilities for 5 existing campuses (Austin, NTSH – Wichita Falls, Rusk, San Antonio, Terrell)	Cost Column B: Costs Associated with Not Replacing these 5 existing campuses
Quantitative Costs		
Replacement Facility Construction	Austin: $175.0 M	$0
	NTSH - Wichita Falls: $123.0 M	
	Rusk: $167.0 M	
	San Antonio: $175.0 M	
	Terrell: $167.0 M	
Deferred Maintenance	$0	Austin: $13.8 M
		NTSH - Wichita Falls: $28.6 M
		Rusk: $29.2 M
		San Antonio: $54.3 M
		Terrell: $24.9 M
Additional Beds at Austin, San Antonio, and Terrell to meet forecast demand(1)	$0	50 additional beds at Austin: $25.0 M
		50 additional beds at San Antonio: $25.0 M
		50 additional beds at Terrell: $23.8 M
Ongoing Facility Maintenance for 10 Years(2)	Austin (455,000sf x $4 x 10 yrs): $18.2 M	Austin (756,202sf x $5 x 10 yrs): $37.8 M
	NTSH – Wichita Falls (336,000sf x $4 x 10 yrs): $13.4 M	NTSH – WF (648,012sf x $5 x 10 yrs): $32.4 M
	Rusk (455,000sf x $4 x 10 yrs): $18.2 M	Rusk (565,301sf x $5 x 10 yrs): $28.3 M
	San Antonio (455,000sf x $4 x 10 yrs): $18.2 M	San Antonio (606,253sf x $5 x 10 yrs): $30.3 M
	Terrell (455,000sf x $4 x 10 yrs): $18.2 M	Terrell (779,491sf x $5 x 10 yrs): $39.0 M
Energy Consumption over 10 Years(3)	Austin (455,000sf x $1.43 x 10 yrs): $6.5 M	Austin ($929,424 x 10 yrs): $9.3 M
	NTSH – Wichita Falls (336,000sf x $1.43 x 10 yrs): $4.8 M	NTSH – WF ($1,083,222 x 10 yrs): $10.8 M

Cost Category	Cost Column A: Costs Associated with New Replacement Facilities for 5 existing campuses (Austin, NTSH – Wichita Falls, Rusk, San Antonio, Terrell)	Cost Column B: Costs Associated with Not Replacing these 5 existing campuses
	Rusk (455,000sf x $1.43 x 10 yrs): $6.5 M	Rusk ($789,480 x 10 yrs): $7.9 M
	San Antonio (455,000sf x $1.43 x 10 yrs): $6.5 M	San Antonio ($862,958 x 10 yrs): $8.6 M
	Terrell (455,000sf x $1.43 x 10 yrs): $6.5 M	Terrell ($982,888 x 10 yrs): $9.8 M
Total for Austin	**$199.7 M**	**$85.9 M**
Total for NTSH – Wichita Falls	**$141.2 M**	**$71.8 M**
Total for Rusk	**$191.7 M**	**$65.4 M**
Total for San Antonio	**$199.7 M**	**$118.2 M**
Total for Terrell	**$191.7 M**	**$97.5 M**
Total for All 5 Sites	**$924.0 M**	**$438.8 M**
Non-Quantitative / Qualitative Costs		
Operations Costs	Consolidation of required campus functions will also reduce the amount of overall travel distance for the movement of supplies, staff, consumers, and waste. This will contribute to a reduction in overall operational costs relative to current campus layouts.	The nature of these existing campuses, with multiple buildings across large sites, contributes to increased operational costs due to the need to distribute material, services, and staff across a larger area (i.e., vehicles are often needed to transport supplies and waste internally within a site). The presence of multiple structures also contributes to an increase in overall square footage that must be cleaned, monitored, secured, etc.
Clinical / Staffing Costs	A new replacement facility presents an opportunity to best align the physical layouts of residential care units and the overall building with the current behavioral health care models. This alignment can improve clinical efficiencies and/or reduce overall staffing costs. Given the challenges facing the state relative to nursing and physician recruitment and turnover (outlined elsewhere in this report), a new facility presents an opportunity to indirectly address this challenge.	The layouts of many existing consumer-occupied buildings on these campuses are not conducive to supporting contemporary care, resulting in the need to expend additional clinical and non-clinical staff resources to compensate for deficiencies such as: limited visibility from staff positions, units spread out across multiple buildings, time lost during internal travel to support repetitive staff activities (i.e.,

Cost Category	Cost Column A: Costs Associated with New Replacement Facilities for 5 existing campuses (Austin, NTSH – Wichita Falls, Rusk, San Antonio, Terrell)	Cost Column B: Costs Associated with Not Replacing these 5 existing campuses
		medication dispensing), etc.
Ability to Deliver Appropriate Care	The ability for a facility to support (positively or negatively) appropriate behavioral health care has several indirect impacts on cost that are difficult to explicitly quantify. This includes the ability to better meet current unmet demand and future forecast demand to improve availability of treatment (and minimize conditions where an untreated patient ultimately ends up in the correctional system). In addition, a new facility that is designed to specifically support contemporary care models can impact the amount of time that clinicians spend directly with consumers in treatment (vs. non-treatment activities such as traveling from one location to another, walking to retrieve supplies, reacting to disruptions caused by supply/material movement, sleep disruption caused by multi-bedded rooms, etc.). As the efficiency of consumer treatment time increases, there will likely be a corresponding decrease in length-of-stay, which in turn results in a natural increase in capacity.	A decision to not update the bed capacity and upgrade the facility conditions to support appropriate care will likely lead to an increase in the number of mentally ill Texans who will go untreated, leading to an increase in utilization of other more costly state resources, namely the correctional / prison system. The campuses targeted for facility replacement also tend to contain large percentages of multi-bedded rooms ranging from four to six consumers per room. As outlined in the detailed report, this is inconsistent with best practice and contributes to issues that disrupt treatment and recovery (i.e.: sleep fragmentation, increase in risks of aggression, increased likelihood of having incompatible consumer populations together, etc.).

(1) The replacement facilities recommended for Austin, San Antonio, and Terrell State Hospitals include an increase of roughly 50 beds per site. In order to illustrate an even comparison, the cost to add these beds to the existing facilities is included in Cost Column B. The costs were determined using benchmark data as follows: 1300sf per bed, at a cost of $384 per sf in urban locations (Austin, San Antonio) and $366 per sf in rural locations (Terrell).

(2) Ongoing Maintenance values are an estimate of costs to maintain a new facility vs. an existing one with an FCI of 0.0 (which will theoretically be reached after all deferred maintenance work is complete). These are estimated using a benchmark value of $3 – 5 per square foot, per year (actual values listed use an average of $4 per square foot). It also projects that the older infrastructure dating back to the first half of the twentieth century will require additional work to maintain an FCI equivalent to that of the newly constructed building, at a factor of 1.25 (equating to $5 per square foot, per year).

(3) Annual energy consumption for existing buildings have been assigned based on historical use, using actual 2013 cost data for electricity and natural gas. Energy consumption for the new replacement facilities is based on an annual target energy consumption of 75 kbtu per square foot, and an overall annual energy cost of $1.43 per square foot (based on a ratio of 80 percent electricity and 20 percent natural gas).

Additional detail regarding facility recommendations for the three sites toured and analyzed in detail (NTSH – Vernon Campus, Rusk State Hospital, and San Antonio State Hospital) are provided in the following section. This includes a graphic illustration of what the physical impacts of a prototype replacement facility would entail (for those sites where replacement is the recommended strategy).

North Texas State Hospital – Vernon Campus

As noted in the detailed facility summary, the NTSH Vernon campus benefits from a clear organization around non-secure, secure adult, and secure adolescent zones. In addition, the campus also benefits from three buildings that have been constructed within the past 25 years (Mooney Building 536, Williams Building 533, Heatly Building 537), and features a very robust offering of resident amenities not found at most other sites. As such, this campus is likely not a top priority for full or significant replacement. However, it does possess the unique circumstance of having a portion of its resident population scheduled to be moved to another site in the very near future (the adolescent program is moving to the Victory Fields campus). As such, the following recommendation addresses options for how to capitalize on the opportunity presented with the adolescent population relocation.

Renovate and repurpose the current adolescent zone in one of the following ways, capitalizing on the infrastructure already in place within this zone, including the relatively new Heatly activity building.

- Repurpose the Oaks and Elms buildings (510 and 511) to serve the "superviolent" population that currently occupies portions of the Mooney Building. This population is currently placing significant stress on the campus, in that one or two consumers at times occupy entire units, whereby the environment is too dangerous to allow other consumers to reside concurrently. This resident population requires a higher staffing ratio and much lower unit sizes to be treated safely and effectively. Renovation to the Oaks and Elms buildings would permit more flexibility for the hospital to care for these consumers without disruption to others, and in a more efficient manner.
- Renovate and repurpose the Oaks, Elms, and Cedars buildings (510, 511, and 512) as three individual units for the Gateway/Transition program that currently resides in the Cottonwood building within the adult zone. This resident population has generally advanced furthest along the treatment process, and may be nearing the ability to transfer out of the maximum security setting. Placement of these consumers within a dedicated zone that includes a supporting activity building may permit a more conducive setting for the care approach designed for this population.
- In either of these proposals, or perhaps even a combination of the two, the move of some consumers from the current adult zone into the former adolescent zone offers additional opportunities relative to bedroom occupancy. Currently, one of the challenges facing this campus is the use of six-bedded rooms within several of the units. Moving the Gateway/Transition consumers out of the Cottonwood building would allow the entire adult zone to decompress a bit, moving down to perhaps four-bedded rooms. While this does not achieve the best practice target, it does represent an improvement relative to crowding, noise, and resident privacy/dignity.

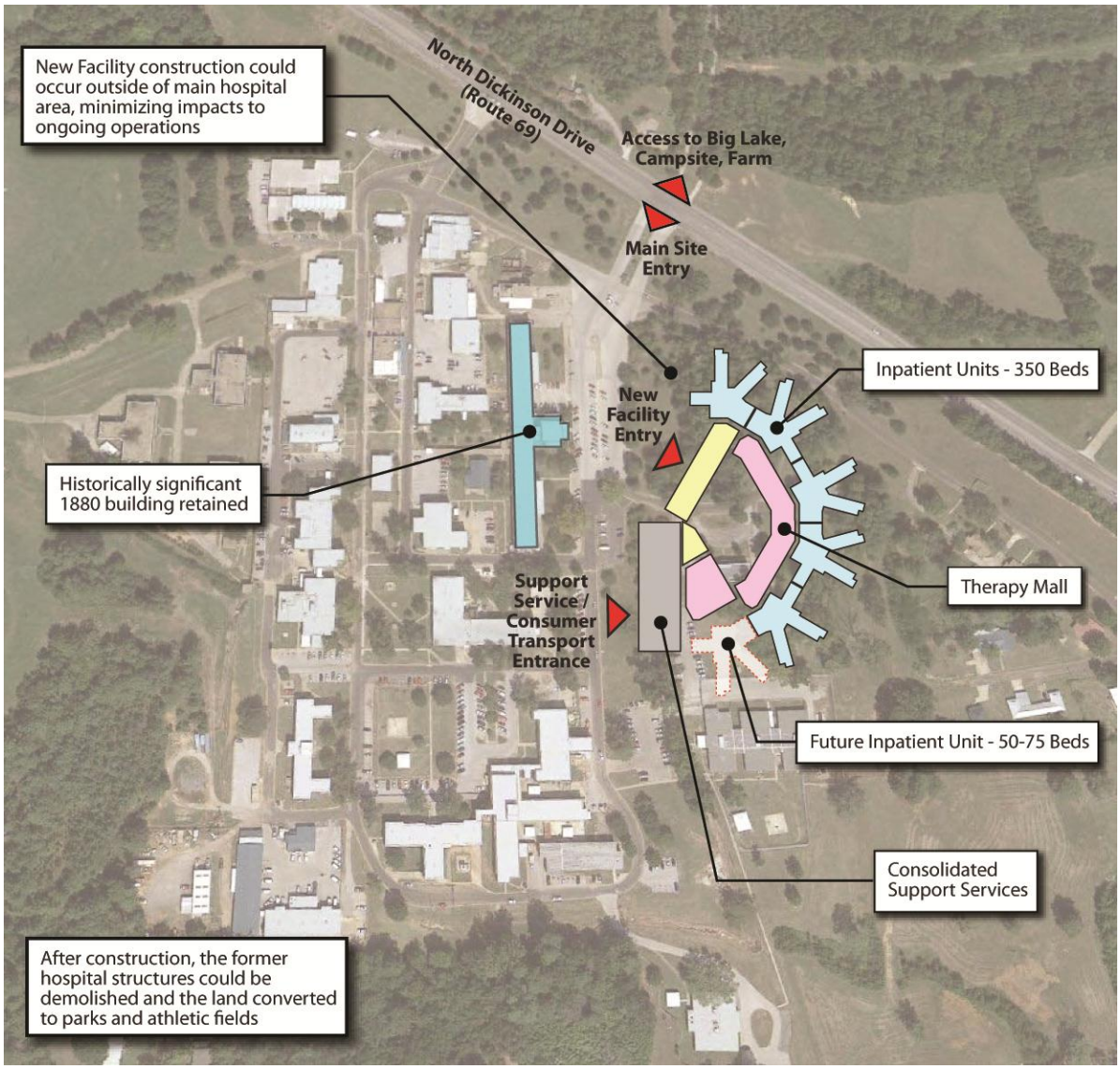
Rusk State Hospital

Rusk State Hospital is comprised primarily of very old and functionally obsolete buildings, with no new resident-related construction since the 1970s. Certain buildings have undergone renovation in the very recent past (including the Nueces / Cypress complex, which is ongoing). While these renovations target the most serious safety and security issues, they are generally unable to address some of the fundamental challenges posed by the footprints of these older buildings. The Rusk campus is also emblematic of the advantages and disadvantages provided by a large campus spread out over some considerable distance. On one hand, access to the outdoors, natural daylight, and a pleasant pastoral setting with ample vegetation is a very strong asset of the campus. However, the arrangement and disposition of individual buildings results in long travel distances between inpatient buildings and central activity / therapy programs. The large site offers considerable opportunity for regeneration in a number of locations.

Accordingly, the recommendation would be to provide a full replacement facility for the Rusk campus, inclusive of all resident-related functions and support services. Due to the historical significance of the main administration building, this structure should be considered to continue functioning in its current capacity. However, the suitability of such a proposal would be dependent on the location of the new facility.

One option would be to locate a replacement facility to the east of the main body of the campus, where there is open land, a small vacant structure, and a handful of small cottages/apartments owned by the facility. This would move the resident environment a bit further from the abandoned prison buildings on the west portion of the site, but maintain close proximity to the historic administration building. A second option would be to locate a replacement facility on the larger tract of undeveloped land to the north/east of Route 69, in proximity to the lake. This location would further capitalize on the pastoral setting of the Rusk campus, offering enhanced visual and physical access to the natural lake feature to staff, consumers, and visitors.

In either option, the current campus would likely experience minimal disruption to ongoing operations due to the vast availability of real estate on which to build and stage.

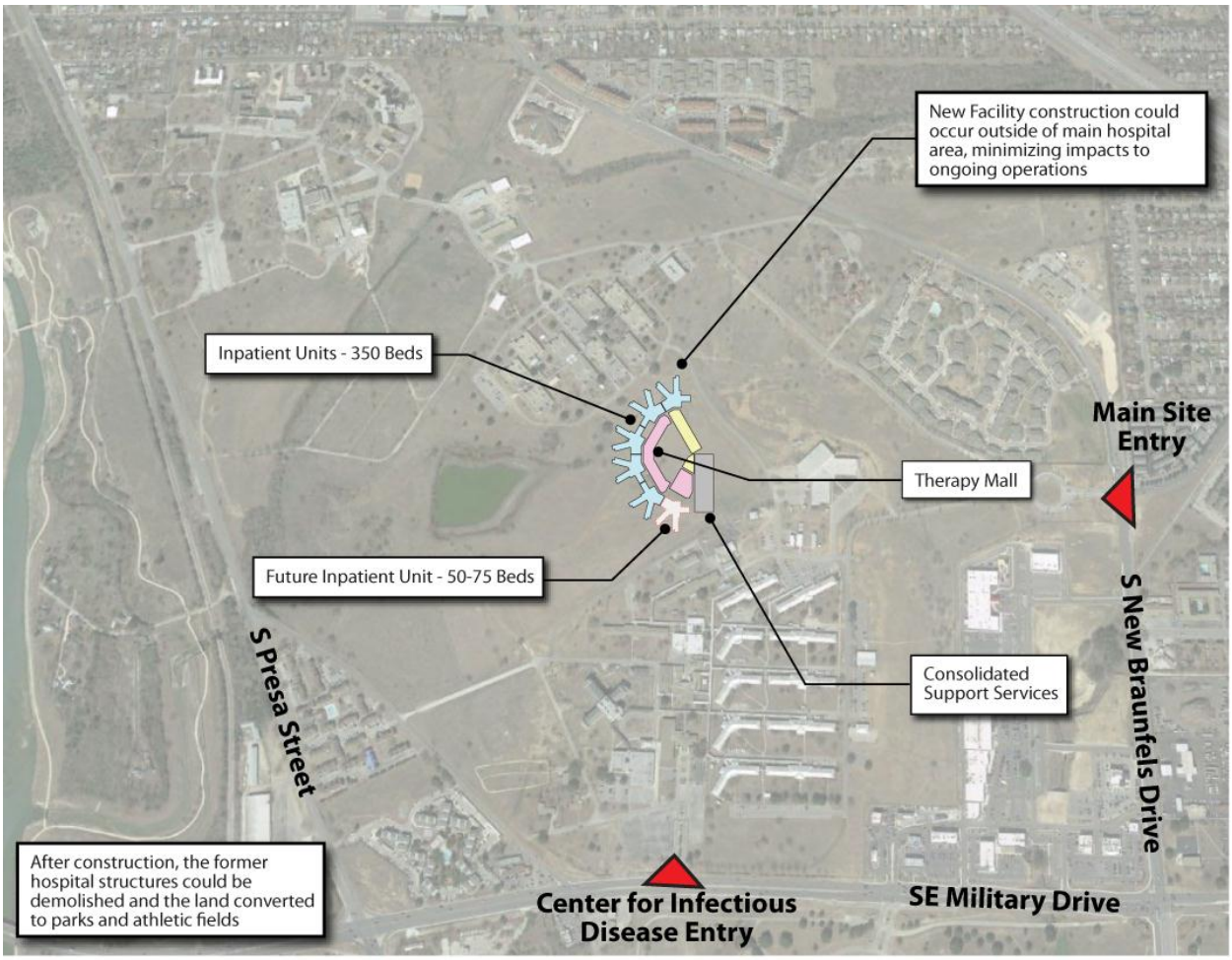


Rusk State Hospital: Site Diagram indicating approximate size and location of a complete facility replacement east of the current main hospital grounds (inpatient units would be two to three stories to achieve target bed capacity).

San Antonio State Hospital

San Antonio State Hospital includes similar features and attributes to Rusk, in that there has not been any construction since the 1970s, and there are several structures that date back to the 1930s, resulting in a campus that experiences the negative attributes of aged and obsolete infrastructure. Unlike Rusk, the majority of consumers are housed within facilities that have been standardized, and whose age is not quite as extreme (1970s). However, the layouts of these buildings are not conducive to contemporary behavioral care practices, resulting in significant visibility challenges and operational / staffing inefficiencies. Additionally, this campus is challenged by an acute separation between distinct resident zones, resulting in all of the travel distance and operational efficiency issues described earlier with respect to this condition.

As such, the recommendation would be to provide a full replacement facility for the San Antonio campus, inclusive of all resident-related functions, administration, and support services. There may be opportunities to locate this replacement facility in a position that would allow more equitable access to support services functions that are shared with the adjacent SSLC and Texas Center for Infectious Disease (i.e., a more central position that serves all three entities).



San Antonio State Hospital: Site diagram indicating approximate size and location of a complete facility replacement southeast of the current main hospital grounds (inpatient units would be two to three stories to achieve target bed capacity). This location may offer better synergies with TCID and the SSLC, though the site offers many opportunities for where a replacement facility could go.

Demolition of Deteriorated and Non-Occupiable Vacant Structures

Across the entire system, the recommendation is to demolish all structures that are deteriorating and can no longer be safely occupied. These vacant structures currently pose an operational tax on the various campuses, in that monies must be allocated for basic upkeep. In addition, these vacant buildings pose additional safety risks and often create a negative aesthetic image to visitors and consumers regarding the nature of care provided by the hospitals.

Replacement Facility Prototype/ Cost Model

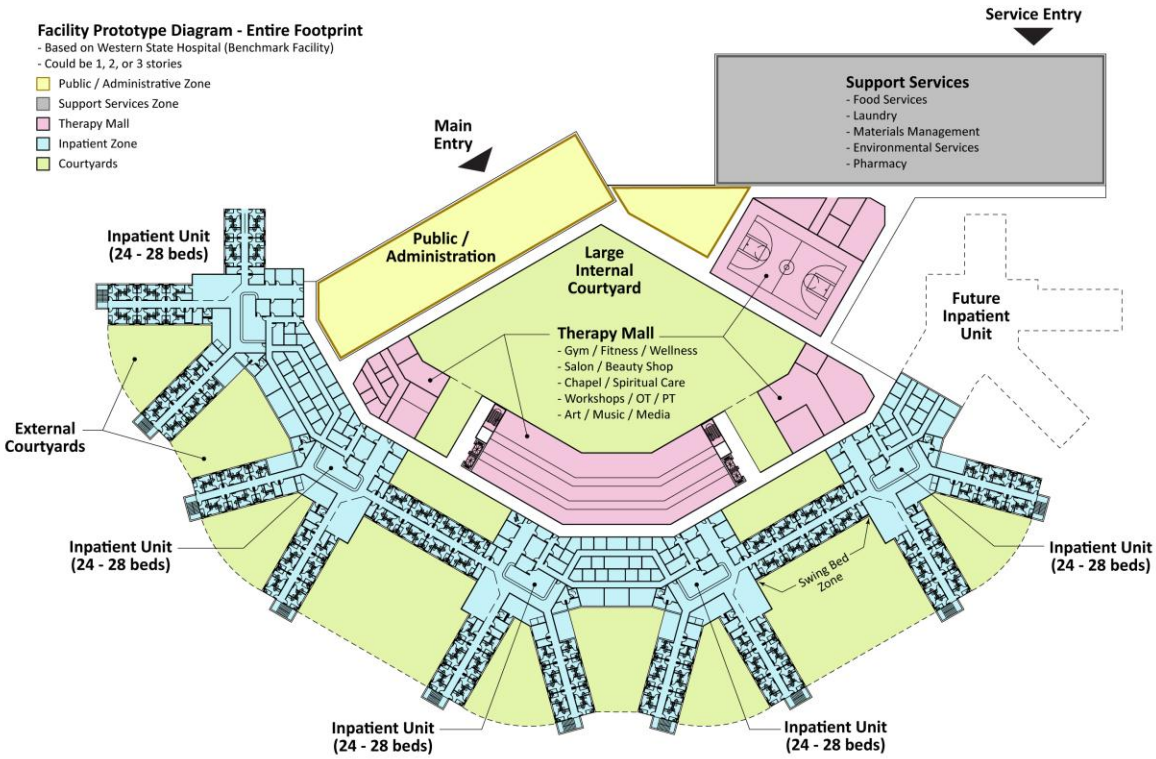
Introduction

In support of the initial recommendation suggestions associated with facility replacement, the following prototype has been developed to illustrate an order-of-magnitude cost that is scalable across the three different sites (NTSH – Vernon Campus, Rusk State Hospital, and San Antonio State Hospital). This prototype is based on the Western State Hospital facility in Staunton, Virginia, as included in the benchmarking table shown above. This facility was selected as the basis for the prototype in that it landed very closely to the mean values for Area/Bed, Cost/Bed, and Cost/Area. In addition, this facility includes several characteristics associated with current trends and best practices in behavioral health care design, including the following:

- Private Rooms with ensuite washrooms
- Inpatient units arranged around clear zoning for bedrooms, activity, and staff/support, organized around a central awareness point offering visibility down resident corridors, towards unit entry points, and into on-unit activity spaces
- Separate on-stage and off-stage access points onto the units, to minimize disruption of support services entering the unit for food delivery, soiled linen removal, etc.
- A variety of on-unit activity spaces to support large or small resident groups
- Access to natural daylight and views from within the building and programmed exterior courtyards that extend the therapeutic platform to the outdoors
- Designed to serve a variety of resident populations, including civil, forensic, adolescent, and medically frail
- Bedroom wings of adjacent units linked to create “swing zones” that can adapt to minor census shifts if one unit needs to grow while the adjacent unit can shrink
- Provisions for future expansion of beds
- Modularity and standardization of inpatient units, with specific design features established for individual resident populations – designed to accommodate shifts in resident population with minimal renovation
- Positioning of the gymnasium to facilitate after-hours community use
- Centralized “therapy mall” with resident destinations

Prototype

The following diagrams illustrate the facility prototype, both in its entire footprint, and a typical inpatient unit. The baseline prototype is a two-story building with 250 beds, though it is adjustable and scalable in a number of ways (including one or three-story options, or reduced quantities of inpatient units within the footprint). The prototype also suggests provisions for future inpatient unit expansion.


Facility Prototype Diagram - Entire Footprint
- Based on Western State Hospital (Benchmark Facility)
- Could be 1, 2, or 3 stories
Public / Administrative Zone
Support Services Zone
Therapy Mall
Inpatient Zone
Courtyards
Service Entry
Support Services
- Food Services
- Laundry
- Materials Management
- Environmental Services
- Pharmacy
Main Entry
Inpatient Unit (24 - 28 beds)
Public / Administration
Large Internal Courtyard
Future Inpatient Unit
Therapy Mall
- Gym / Fitness / Wellness
- Salon / Beauty Shop
- Chapel / Spiritual Care
- Workshops / OT / PT
- Art / Music / Media
External Courtyards
Inpatient Unit (24 - 28 beds)
Swing Bed Zone
Inpatient Unit (24 - 28 beds)
Inpatient Unit (24 - 28 beds)
Inpatient Unit (24 - 28 beds)

Facility Prototype Diagram - Inpatient Unit
Bed Zone
Activity Zone
Clinical Support / Control Zone
Building Support (IT / Electrical / Duct Shafts)
Off-Stage Entry
On-Stage Entry
Staff Administrative Zone - connected to unit, but off-stage
Vestibules / Sallyports at Entries
Seclusion Suite
Adjacent Unit
6, 8, 10, or 12-Bed Wings
Variety of on-unit activity spaces

Cost Model

This prototype has been cost normalized/adjusted to reflect the Texas market (both urban and rural locations) and escalated to January 2017 dollars. As noted in the benchmarking table, the construction cost for Western State Hospital was $125m. This facility was completed in 2012, with the costs established at time of bidding/tendering in 2010. These 2010 dollars amount to $155m when escalated to January 2017, using actual escalation to date and projected escalation through January 2017. When adjusted for the difference in construction markets, this $155m value in Virginia equates to $129m in an urban Texas location such as San Antonio, and $123m in a more rural Texas location such as Vernon or Rusk. Lastly, the prototype has also been scaled to four different capacity options (a 200 bed model, 250 bed model, 300 bed model, and 350 bed model) as follows:

# of Beds	Facility Size	Location (Urban or Rural)	Estimated Cost (2017 Dollars)
200	280,000 sf	Urban	$107,500,000
200	280,000 sf	Rural	$102,500,000
250	336,000 sf	Urban	$129,000,000
250	336,000 sf	Rural	$123,000,000
300	400,000 sf	Urban	$153,600,000
300	400,000 sf	Rural	$146,400,000
350	455,000 sf	Urban	$174,700,000
350	455,000 sf	Rural	$166,600,000

Section 9. Global Assessment of Infrastructure Summary – Facility Infrastructure and Systems

Overview

An in-depth Facility Condition Assessment (FCA) conducted at three SPH campuses (North Texas-Vernon, Rusk, and San Antonio) analyzed existing conditions of all buildings and the site elements during May-June, 2014. The remaining campuses were reviewed utilizing individual building plans, site plan, aerial photography, and building photography.

Aging state supported living center facilities require significant ongoing maintenance and resources to address deficiencies.

The FCA process included visitation at each building and site by a team of professional architects and engineers documenting each system and major equipment units, based on a UniFormat assembly approach. The data collected was entered into the CannonDesign Facility Optimization Solutions (FOS) software; checked by each assessor and peer reviewer for quality, accuracy, completeness, and clarity; revised where necessary; and used in reporting modules within the FOS software. Each system quantified has an associated unit cost and regional adjustment factor assigned that generates an estimated current replacement value (CRV). The sum total of all assessed systems' estimated values creates a facility CRV that is used to develop the Facility Condition Index (FCI), an industry-standard rating used to establish a relative comparison of existing conditions. Facilities currently not in use were not assessed per the campus facilities staff recommendations.

VFA, a facilities, capital, and management firm, assessed the SPH infrastructure over ten years prior to this assessment. Their data was reviewed by CannonDesign and migrated into the FOS database for use in making comparisons of conditions that may have changed, newly identified deficiencies, FCI ratings, and capital funding needs. In each campus assessment, conclusions were able to be drawn using this comparison and updated data applied to the building inventory. The VFA data was also populated into the FOS database for the other campuses that were not physically visited and assessed in this project effort.

Generally, most facilities are in Poor to Critical Condition (refer to the Quantitative Data explanation at the end of this section for definitions) across all three campuses; within each facility there are significant deficiencies that require major repairs and/or system replacement. It is possible to make some inferences regarding the operation and maintenance of existing facilities within the DSHS:

- Cost/benefit and return on investment (ROI) of using existing building stock is likely favorable versus obtaining care from the private sector at rural locations (due to the possible lack of provider) and in some urban locations (due to higher cost of living factors).
- Consolidation of functions between campuses (including SSLCs and SPHs), such as kitchen and other common services, may be possible where distances are not prohibitive

(i.e., less than 30 miles). Beyond that suggested radius, travel time, vehicle use, and associated costs may render consolidation to be infeasible and/or impractical.

- Efficient use of State of Texas resources (i.e., financial, staff, etc.) implies maintaining facilities to energy-efficient operating modes, replacing inefficient equipment and systems, correcting life safety deficiencies, adapting to the occupancy type or re-purposing facilities, modernizing where practical, etc. Diverting financial resources away from facilities and infrastructure will result in steady deterioration of building systems which, when allowed to persist without adequate funding, will require significant dollars to remedy.
- Planning for annual maintenance and capital improvement funding needs must consider the likely acceleration of deterioration of systems as they approach and exceed their useful life cycle.
- Planning must also consider not only system repairs and replacements, but also upgrades to meet occupant and code requirements that affect the quality of life environments within and around them. Design options for replacement facilities should include cost analyses, including disposal of non-used facilities, before implementation.
- The number and size/configuration of facilities that are required to meet the SPH mission must be considered so as to not use unnecessary resources on underutilized or vacant facilities.

Key Themes

After visitations at each of the three campuses were conducted, key themes emerged related to general trends in the overall conditions of all facilities as they pertain to structural and architectural features, general maintenance of the buildings, building systems, building controls, code compliance and technology, and telecommunications. NOTE: These themes are reflective of facilities on the North Texas-Vernon, Rusk, and San Antonio SPH campuses as opposed to all SPH campuses.

Structural & Architectural

Most buildings were constructed between 1910 and 2000. Building construction of the resident units primarily consisted of reinforced concrete foundations – either on grade or on piers, steel or concrete structural frames, brick veneer with concrete masonry unit backup exterior walls, and uninsulated glazed steel/ aluminum windows. No major structural deficiencies were noted. Exterior walls appear to be in fair condition, with the exception of Rusk, which requires considerable repairs due to the age of construction. Window replacement with an energy efficient insulating type is recommended for all sites.

Most roofs have been replaced in recent years, consisting of either modified bitumen roofing for flat roofs or metal panel roofing for pitched roofs. These pitched roofs appear to be in good condition. It is recommended that the remainder of buildings that retain their original roofing should undergo a complete roofing system replacement, since there is a strong likelihood that the existing roofs exceed manufacturer warranties/lifecycle expectancies.

Architecturally, the campuses do their best to keep up with consumer use of the buildings. Interior finishes are repaired or replaced on an as-needed basis and appear to be adequately

maintained, with the exception of Rusk, where finishes were observed to be in poor condition. A majority of restroom and shower units for all sites are recommended to receive significant upgrades/modifications to accommodate ADA compliance, reliability, and aesthetics.

General Maintenance

Systems and equipment are well-maintained using regularly scheduled preventive maintenance practices; however, many systems and equipment elements are past their expected life cycle. Since limited funding often prevents proactive replacement, they are typically operated with a failure – reactive, "repair as needed" approach.

Building Systems

Stand-alone heating, ventilation, and air conditioning (HVAC) systems exist for each building resulting in numerous pieces of large equipment and individual controls systems spread across the campuses that require maintenance and capital funding. The central steam plant and distribution system at San Antonio has been abandoned in-place for years. This present configuration and energy efficiency could be improved by constructing central plants or campus utility heating and cooling loop systems. Most below-grade piping is a mixture of polyvinyl chloride (PVC) and older clay and cast iron systems that are prone to failure. Exfiltration in older air handling units (AHU) and ductwork results in inefficient energy use.

Health care buildings have stand-alone emergency power generators which reflect sound facility management practices that address health, safety, and welfare provisions for all occupants. Variable frequency drives (VFD) exist on some equipment units for energy savings; however, opportunities exist for increased application of VFDs with programmable controls.

Building Controls

Most temperature control and building automation systems have been replaced with direct digital controls, limiting the number of older, energy-inefficient pneumatic controls systems. Automatic lighting control systems are not installed, resulting in energy inefficiency.

Code Compliance

The majority of restroom and shower units are obsolete, especially at Rusk, and are non-ADA accessible which may cause occupants difficulty using essential basic comfort and hygiene-related amenities. Due to the configuration of spaces and common areas, there may be limited opportunities to provide reasonable accommodations to account for the lack of accessibility. Fire suppression systems exist in some facilities, and appear to be code-compliant, while several buildings without systems are likely "grandfathered" and are not required to have them. Non-separation of emergency branch power circuits in consumer care areas does not meet National Electric Code (NEC) code requirements because, for example, emergency-powered lighting systems cannot be connected to the same panel as normally-powered lighting systems. For health care or institutional occupancies that are required to follow Article 517 of the NEC, the emergency power system is required to be divided into separate branches. For example, in a larger hospital (greater than 150kVA) NEC Article 517 would require a Life Safety Branch (EM

lights, exits, and alarm/alerting systems), a Critical Branch (Medical life support and critical hospital functions), and an Equipment Branch (mechanical/ventilation equipment and other systems/equipment/infrastructure required for safe operation of the hospital during a power outage). These branches are typically divided by separate automatic transfer switches. Most hospitals built prior to 1980s do not have the required separation - this deficiency is typically flagged by whatever licensing authority has jurisdiction - and in most cases, corrections are required to be made over-time.

Technology and Telecommunications

Where used, analog telecommunication voice systems are obsolete, and private branch exchange (PBX) telephone network and servers are beyond expected useful life. Fiber and data system lack bandwidth to support new technology. Security systems coverage is limited, although there is a $1.5M project budgeted for San Antonio SPH.

Additional Notes:

- A few buildings at Rusk have historic significance and may need additional funding for preservation efforts.
- The Facility Manager at Rusk would like all doors to have anti-ligature door hardware at the resident quarters that require substantial funding to improve.
- There is a request put in by the Facility Manager at Rusk to the State to replace all resident quarters with impact resistant double layer gypsum walls, hard ceilings, and ducted returns.
- The Adolescent Forensic Program at Vernon campus stated their recommendation to be relocation to the Victory Field location, which is in need of major repair and has historic significance as well.

Quantitative Data

Facility Condition Index (FCI) ratings provide a general understanding of the current condition of existing facilities and infrastructure elements at each campus. The FCI ratings range is based on facility management industry standards that can be applied universally to any building or structure portfolio. The ratings used – Good/Fair/Poor Condition – are determined by an assessment of each system that comprises a facility (i.e., structural members, roof membrane, doors, windows, HVAC, plumbing, electrical systems, partitions, etc.). Each system has an estimated monetary value that is considered with all deficiencies discovered during the assessment process. A ratio is developed with the result becoming the FCI. Facilities with a Good Condition rating have few if any requirements for repairs and/or replacements. A Poor Condition rating indicates there are significant deficiencies that should be addressed if the facility is intended for continued operation.

The data below provides FCI values from the on-site assessment with estimated funding needs based on conditions observed. The percentages shown for each FCI rating are useful in developing capital improvement plans.

Facility Condition Index (FCI)

$$FCI = \frac{\text{Deferred Maintenance Deficiencies } \textbf{(DMD)}}{\text{Current Replacement Value } \textbf{(CRV)}}$$

2014 Facility Condition Assessment Results

During the Facility Condition Assessment conducted by the CannonDesign Facility Optimization Solutions (FOS) team, the buildings at three DSHS campuses (North Texas Vernon State Hospital, Rusk State Hospital and San Antonio State Hospital) were assessed via on-site field surveys. The overall condition, campus condition percentage by category, distressed buildings list, and overall assessment results are below.

Overall Rated Condition

Facility Condition Index (FCI) – 2014 Current Status

Site	Ten Year Needs	Overall FCI	Overall Condition	Consumer Building FCI
North Texas Vernon State Hospital	$20,975,525	0.23	**Poor**	0.23
Rusk State Hospital	$29,250,232	0.24	**Poor**	0.15
San Antonio State Hospital	$54,304,938	0.53	**Critical**	0.48

Note: The Facility Condition Index (FCI) values reflect all analyzed structures on a given campus. In determining the relative impact of physical infrastructure condition on the preliminary recommendation, consideration was given to whether structures utilized specifically by consumers were individually better or worse off than the overall average.

Campus Condition Percentage by Category

Buildings are divided into four condition categories: good, fair, poor, and critical. Campuses are shown below in these groups on a percentage basis.

North Texas Vernon State Hospital - $20.9M in capital and deferred maintenance funding needs

- 24 percent in Critical condition
- 48 percent in Poor condition
- 6 percent in Fair condition
- 22 percent in Good condition

Rusk State Hospital - $29.2M in capital and deferred maintenance funding needs

- 21 percent in Critical condition

- 48 percent in Poor condition
- 15 percent in Fair condition
- 16 percent in Good condition

San Antonio State Hospital - $54.3M in capital and deferred maintenance funding needs

- 80 percent in Critical condition
- 20 percent in Poor condition
- 0 percent in Fair condition
- 0 percent in Good condition

Distressed Building List

Critical Condition Buildings with an FCI of .60 or higher are classified as Distressed Buildings. The full list of Distressed Buildings by campus is below.

Facility	Building
North Texas Vernon State Hospital	N/A
Rusk State Hospital	549 Property Storage, 550 Property Storage, and 589 Property Storage
San Antonio State Hospital	520 Ferguson Hall, 521 Forensic Mgmt., 525 Central Kitchen, 533 Property Storage, 534 Boiler Plant, 535 Superintendents House, 536 Maintenance Storage, 555 Maintenance Storage, 557 Residence Casa Amistad, 600 Maintenance, Fire And Safety, 604 Air Compressor House- 533, 605 Garbage House-525, 619 Mechanical Room-537, 624 Storage-533, 628 Picnic Cover-525, 635 Mechanical Room-535, and 651 Motor Pool

2014 FCA Overall Assessment Results

- The average FCI for all assessed buildings is .33 – a critical condition rating.
- On average, across all three campuses, more than three quarters of all assessed buildings are either in poor or critical condition.
- **Only one in eight buildings was assessed to be in good condition.**
- The average ten year capital and deferred maintenance deficiencies funding needs for each campus exceeds 34.8 million dollars.

2004 Facility Condition Assessment Results

Historic data for all twelve campuses was obtained from the Texas HHSC CAFM department which shows the observations of the 2004 assessment conducted by VFA. This CAFM data has been entered in the CannonDesign FOS database using the UniFormat standard organizing system for construction assemblies. Both the FOS and VFA assessments were performed using this classification system.

Although the UniFormat identifiers are the same within VFA and the FOS databases, the assessment methodologies vary as follows: VFA identifies system renewals based upon life cycle expectancy and does not typically recommend partial repairs or replacements during an assessment; CannonDesign FOS teams assess at systems- and/or component-levels to identify repairs and replacements, whether partial or complete, and do not focus on life cycle expectancy. FOS data uses direct observation to determine condition and remaining useful life. As a result, systems and components often function and are recommended to remain in use, despite being near or exceeding their useful life cycles.

Costs estimated using the assessment data for both the VFA and FOS assessments do not include overhead, project planning, and execution factors up to approximately 44 percent. FOS estimated costs are burdened in each unit price to cover small contingencies and annual escalation at roughly 3 percent. When the FOS recommendations lead to development of project scopes within the FOS planning module, the estimated costs are then applied overhead, design, permit, bidding, and contingency factors which aggregate between 40 to 50 percent, depending upon the region and exact location of the project.

In the following table, this explanation should be referred to when costs are used for the three FOS-visited campuses and the twelve VFA-visited campuses. It should be noted that the VFA assessment data was inputted into the FOS database strictly to align the deficiencies, not the CRVs, FCIs, or total deficiency estimated costs. In addition, the assessments have a ten-year difference which renders a one-to-one comparison difficult to obtain without actually assessing the remaining nine campuses within one to two years maximum.

Overall Rated Condition

Facility Condition Index (FCI) – 2004 VFA Results

Site	Ten Year Needs	Overall FCI	Overall Condition	Primary Consumer FCI
North Texas State Hospital - Vernon	$5,934,714	0.12	Poor	2014 available
Rusk State Hospital	$16,324,067	0.19	Poor	2014 available
San Antonio State Hospital	$15,052,402	0.14	Poor	2014 available
Austin State Hospital	$13,882,120	0.14	Poor	0.12
Big Spring State Hospital	$12,556,049	0.20	Poor	0.12
El Paso Psychiatric Center	$529,798	0.04	**Good**	**0.04**
Kerrville State Hospital	$10,849,450	0.19	Poor	0.10
Rio Grande State Center	$5,503,792	0.18	Poor	0.09
Terrell State Hospital	$24,894,123	0.18	Poor	0.29
Texas Center for Infectious Disease	$2,624,056	0.18	Poor	n/a
Waco Center for the Youth	$2,136,850	0.11	Poor	0.10
Wichita Falls State Hospital	$28,612,650	0.24	Poor	0.30

Campus Condition Percentage by Category

North Texas Vernon State Hospital - $5.9M in capital and deferred maintenance funding needs

- 10 percent in Critical condition
- 45 percent in Poor condition
- 30 percent in Fair condition
- 15 percent in Good condition

Rusk State Hospital - $16.3M in capital and deferred maintenance funding needs

- 15 percent in Critical condition
- 27 percent in Poor condition
- 10 percent in Fair condition
- 48 percent in Good condition

San Antonio State Hospital - $15M in capital and deferred maintenance funding needs

- 19 percent in Critical condition
- 26 percent in Poor condition
- 28 percent in Fair condition
- 26 percent in Good condition

Austin State Hospital - $13.8M in capital and deferred maintenance funding needs

- 22 percent in Critical condition
- 27 percent in Poor condition
- 24 percent in Fair condition
- 27 percent in Good condition

Big Spring State Hospital - $12.5M in capital and deferred maintenance funding needs

- 39 percent in Critical condition
- 23 percent in Poor condition
- 19 percent in Fair condition
- 19 percent in Good condition

El Paso Psychiatric Center - $259K in capital and deferred maintenance funding needs
- 0 percent in Critical condition
- 0 percent in Poor condition
- 0 percent in Fair condition
- 100 percent in Good condition

Kerrville State Hospital - $10.8M in capital and deferred maintenance funding needs
- 24 percent in Critical condition
- 16 percent in Poor condition
- 12 percent in Fair condition
- 48 percent in Good condition

Rio Grande State Hospital - $5.5M in capital and deferred maintenance funding needs
- 30 percent in Critical condition
- 13 percent in Poor condition
- 22 percent in Fair condition
- 35 percent in Good condition

Terrell State Hospital - $24.8M in capital and deferred maintenance funding needs
- 48 percent in Critical condition
- 28 percent in Poor condition
- 15 percent in Fair condition
- 9 percent in Good condition

Texas Center for Infectious Disease - $2.6M in capital and deferred maintenance funding needs
- 50 percent in Critical condition
- 38 percent in Poor condition
- 0 percent in Fair condition
- 12 percent in Good condition

Waco Center for the Youth - $2.1M in capital and deferred maintenance funding needs
- 20 percent in Critical condition
- 11 percent in Poor condition
- 16 percent in Fair condition
- 53 percent in Good condition

Wichita Falls State Hospital - $28.6M in capital and deferred maintenance funding needs
- 37 percent in Critical condition
- 43 percent in Poor condition
- 10 percent in Fair condition
- 10 percent in Good condition

Distressed Building List

Critical Condition Buildings with an FCI of .60 or higher are classified as Distressed Buildings. The full list of Distressed Buildings by campus is below.

Facility	Building
North Texas State Hospital – Vernon	536 Mooney Building
Rusk State Hospital	Buildings 535 and 613
San Antonio State Hospital	520 Ferguson Hall, Building 537, 602 Rag Trap, 622 Transformer House, 631 Tunnel Vent, and LSC Casa Amistad
Austin State Hospital	Building 641, 782 Machine Room and 795 Machine Room
Big Spring State Hospital	503 Nurse Dorm, Building 511, Building 512, Building 515, Building 516 Building 529, Building 547, 544 Freezer Vault, and 527 Safety-Security
El Paso Psychiatric Center	N/A
Kerrville State Hospital	611 Ward/Unit and 612 Old Ward
Rio Grande State Hospital	Building 512 and 515 Client Sleeping Building/MH AD
Terrell State Hospital	Building 516, Building 520, Building 522, Building 563, Building 570, Building 671, Building 672, 676 Equipment Building 675, 680 Equipment Building 679, 686 Equipment Building Central Chill h20 plant, 691 Menendez Recreation & Training, Building 706, 720 Lake Day Use No 1, 722 Allen Lodge Day Use, and 723 Lake Day Use No. 2
Texas Center for Infectious Disease	N/A
Waco Center for the Youth	Building 506, Building 512, Building 546, Building 547, Building 551, 589 Restrooms @ Swimming Pool, and 597 Horse Barn/Classrooms
Wichita Falls State Hospital	N/A

2004 FCA Overall Assessment Results

- The average FCI for all assessed buildings was .16 – a poor condition rating.
- On average, across all twelve campuses, more than half of all assessed buildings were assessed to be in poor or critical condition.
- **One in three buildings was assessed to be in good condition.**
- The average ten year capital and deferred maintenance funding needs for each campus exceeded 11.6 million dollars.

2014/2004 Facility Condition Assessment Conclusion

While there were differences in methods between the two assessments, the common classification, rating system, and sample set allow for meaningful conclusions to be drawn from the pairing. Both today and ten years ago over half of the buildings on the campuses were found to be in poor or critical condition. Ten years ago one in three buildings was assessed to be in good condition. Today, only one in eight buildings achieved this same ranking. This trend indicates a rapidly worsening condition among the DSHS facilities.

Please refer to Appendix E for the full reports.

Section 10. Global Assessment of Real Estate Summary

The Facility Condition Assessment (FCA) conducted by CannonDesign and its consultants at three SPHs campuses analyzed the real estate aspects to determine: current and future building, infrastructure, and land utilization; conditions within the site boundaries, including remote sites/properties; adjacencies with the local community and properties; market conditions and building stock of applicable facilities; demand for medically-related and non-medical office space; demographics; and income levels.

Refer to the separate Appendix F for the full Real Estate reports.

San Antonio SPH Real Estate Summary

The San Antonio State Psychiatric Hospital (SASPH) is one of ten state behavioral health facilities within the Texas Department of State Health Services system. SASPH offers intensive in-patient diagnostic, treatment, rehabilitative, and referral services for persons with seriously behavioral conditions from South Texas regardless of their financial status. Admission may be voluntary or involuntary depending on whether the consumer is determined by a court to have significant behavioral health needs, dangerous to self or others, or if left untreated would deteriorate to the point of becoming dangerous to self or others.

The facility opened in 1892 on an approximate 640-acre site at the southern edge of San Antonio. It was designed as a self-contained state-run psychiatric institution with its own crops and livestock, living quarters for staff, and cemetery. It was the third SPH to open in Texas, predated by one in Austin in 1857 and one in Terrell in 1883.

Over the years, the original 640-acre site has been winnowed down to 349.10 acres as portions of the site were carved off for other uses. Additionally, the 349.10-acre site contains SASPH (on the northwest part of the site), Texas Center for Infectious Disease (TCID), and the San Antonio State Supported Living Center (on the southeast part of the site). Approximately 188.7 acres of the site supports SASPH. Although SASPH and the San Antonio State Supported Living Center occupy a single parcel and are connected with internal roadways, this report only discusses SASPH.

The 188.7-acre portion of the site supporting SASPH has an overall mild slope downwards to the west. It is delineated from the San Antonio State Living Center portion of the site by the State Hospital Creek (currently dry). The facility contains 68 buildings, including seven adult residential buildings, an adolescent residential building, a central kitchen, a canteen, a chapel, several administration buildings, a medical center, several single family homes, and several storage and maintenance buildings. The facility is currently funded for 302 consumers with an average daily census of 276.

Critical Findings

SASPH was originally designed as a self-contained state-run psychiatric institution. Its current use is substantially similar; however, the layout of the campus evolved considerably in the 1970s with the addition of the adult residential buildings and the employee training buildings.

Additionally, many of the older buildings located in the original nucleus are heavily dilapidated and no longer used. The aging of those buildings and the expansions made in the 1970s have diminished the overall functionality of the facility.

- The adolescent residential building was constructed in the 1930s and is nearly 40 years older than the adult residential buildings. It lacks community space and storage, and exhibits an institutional austerity that, according to interviews with employees, affect the quality of treatment given to the adolescents.
- While SASPH appears to generally serve its purpose as a SPH, it clearly lacks the cohesive functionality of other SPHs such as the one located in Vernon.
- The area surrounding SASPH has a lower-income demographic character and most of the development momentum in San Antonio is occurring in the northern part of the city. However, there have been several major developments occurring in the southern part of the city, including the Brooks City-Base redevelopment project, which is located less than one mile south of SASPH. If this project has continued success, it may provide the impetus for more widespread gentrification.
- The overall property is considered a special purpose facility. While individual buildings may have utility to other govern behavioral institutions, and could be leased to such institutions, they are not considered to have significant marketability for sale or lease to private users for medical or non-medical uses.
- Research indicates that San Antonio does not have an unmet need for medical or non-medical office properties.

Rusk SPH Real Estate Summary

In terms of site area and funded census, the Rusk State Hospital (RSPH) is the largest of ten state behavioral health facilities within the Texas Department of State Health Services system. RSPH is an inpatient hospital providing psychiatric treatment and care for citizens primarily from the East Texas region. Admission may be voluntary or involuntary depending on whether the consumer is determined by a court to be seriously behavioral ill, dangerous to self or others, or if left untreated would deteriorate to the point of becoming dangerous to self or others.

The facility originally started as a three-story state penitentiary that was constructed in 1878. It was Texas's second state prison and Rusk was selected as its location because of the area's iron ore deposits. The ore, which was smelted on site and used in the construction of many government buildings, was delivered from Rusk to Palestine via a state-owned railroad constructed in part by the prisoners. The prison was closed in 1917 and converted to a SPH in 1919. Census peaked in the 1940s with approximately 2,300 consumers and has since been trending downwards.

The facility is currently funded for 325 patients with an average daily census of 319. The main campus of the hospital (not including employee housing or the central park area) is situated on approximately 50 acres along the southern line of U.S. Highway 69 in the northern part of Rusk. However, there are 623 acres owned by the State of Texas and associated with RSPH remaining after the sale of the unused natural forest area four to six years ago. The RSPH site also includes a recreational lake, a cemetery, a farm, and an abandoned land fill.

Critical Findings

- RSPH is located near the northwest periphery of the Rusk city limits. Overall, Rusk is a small rural town with most residential and commercial uses located towards the city center. Commercial development, population growth, and household growth have been very limited over the near term past.
- The city of Rusk appears to be largely supported by RSPH, with no other major employer or demand generator in the area apart from the adjacent State prison facility. The trajectory of the local economy will be driven by the amount of funding received by RSPH.
- The overall RSPH site contains approximately 623 acres; however, the main campus is situated on approximately 50 acres. Most of the buildings are two or three stories and the main campus has a relatively low land-to-building ratio. The interior carriers are laid out in a general grid pattern and buildings are clustered by similarity of use. Due to those factors, the overall layout of the main campus is considered to have good functionality.
- The largest functional disutility present appears to be the design of the canteen. It is located in the consumer education and recreation building (#611). The canteen is not equipped with a fire suppression system or vent hoods. Consequently, it is not set up for food preparation and food options available there are very limited.
- RSPH features a scenic, somewhat isolated, private recreational area located across U.S. Highway 69 on the Big Lake tract. The recreational area provides a therapeutic outdoor environment that is proximate to the facility and likely has a beneficial impact on the rehabilitative treatment options available to consumers at RSPH.
- There is an approximate 7.2-acre vacant area located southeast of the maximum security unit that appears suitable for development. Additional land area could be made available through demolition of unused vacant structures. Specifically, the former maximum security units on the western side of the main campus are vacant and unused, while occupying approximately 1.3 acres.
- There is ample room on the Big Lake tract for new development. However, for optimal functionality, any new buildings developed on the Big Lake tract should be similar in use to the existing buildings (i.e., used with relative infrequency by small groups).
- The overall property is considered a special purpose facility. While individual buildings may have utility to other govern behavioral institutions, and could be leased to such institutions, they are not considered to have significant marketability for sale or lease to private users for medical or non-medical uses.
- Research indicates that Rusk does not have an unmet need for medical or nonmedical office properties.

Vernon SPH Real Estate Summary

North Texas Vernon State Psychiatric Hospital (NT-VSPH) is one of ten state behavioral health facilities within the Texas Department of State Health Services system. NT-VSPH provides maximum security forensic psychiatric services to adults and secured forensic services to adolescents referred from throughout the state. Most consumers are referred through the criminal court system as persons found not guilty by reason of insanity or persons found not

behaviorally competent to stand trial. A lesser percentage of consumers are persons from other SPHs who have been found to be manifestly dangerous.

The first State Hospital in Vernon, called the Annex, was a geriatric extension of the Wichita Falls State Hospital. It first opened in 1951 at Victory Field, a former World War II Army Air Corp pilot training facility south of Vernon. In 1969, Vernon State Hospital was relocated to a 69-acre site located in the northwest edge of Vernon, while the former Victory Field facility was converted into a statewide treatment facility for drug dependent youth.

In the mid 1990s, Vernon State Hospital was involved in a major reorganization. In 1995, the Victory Field facility was leased to the Texas Youth Commission to be used as a correctional academy for juveniles. In September 1996, the Vernon Adolescent Forensic Program was transferred to Vernon State Hospital, moving into four renovated buildings on the south side of the Maximum Security Program. The move necessitated an $8.5 million construction project, which included the construction of two new buildings and additions to several existing buildings. It also necessitated additions to the administrative complex, new fencing, and other renovations. By the late fall of 1997, the adult maximum security and adolescent forensic programs were fully operational at one campus location.

Between 1996 and 1999, administration of the Vernon State Hospital and Wichita Falls State Hospital were combined under one superintendent and the combined campuses were renamed North Texas State Hospital, retaining the location names Vernon Campus and Wichita Falls Campus to designate the individual sites. Victory Field Correctional Academy was closed in 2010 due to state budget cuts and currently sits vacant. However, as a result of the decision to transfer the adolescent program to Victory Field, a $4.4 million renovation project of Heatly Building 710 is underway as of the date of this report. This report concerns only NT-VSPH (a.k.a. the Vernon Campus) and does not discuss or describe the Wichita Falls Campus.

Critical Findings

- NT-VSPH is Texas' maximum security SPH, which is designed to securely house forensic consumers while providing them with a rehabilitative environment. Overall, the facility is considered highly functional for this purpose.
- The overall layout of the facility is highly functional, with multiple residential buildings supporting different consumer groups according their needs. Additionally, the adolescent area is separated from the adult area by a 10-foot wide double chain link fence, which prevents contact between the two groups.
- The adult section includes a highly functional, centrally located consumer services building with workshops, life skills classrooms, a courtroom equipped for remote judicial proceedings, a canteen, and a gymnasium. On most other SPH campuses, those resident services are disbursed throughout the facilities in a less functional arrangement.
- Paradise House is a former group home located approximately 0.75 miles from NT-VSPH, on the western side of Vernon. The home addresses an operational need (housing multiple visiting families) for which the buildings on the main campus are not designed. Paradise House is considered to be highly functional for its current use.

- The facility has one specific item of functional disutility. As the State's maximum security SPH, NT-VSPH houses the most dangerous consumers in the system. Presently, there is one extremely violent resident in the maximum security building that has reportedly injured over 20 employees. He has been isolated from other consumers in the western part of the building, effectively occupying 10 bedrooms and one observation station. The building is not designed to efficiently house consumers that require fulltime isolation.
- The main campus has ample room for future expansion, with approximately 8.2 acres of developable area inside the secured area and approximately 2.7 acres of developable area outside the secured area.
- The Victory Field facility is vacant and minimally used in the operations of North Texas Vernon State Psychiatric Hospital. Most of the buildings located on the Victory Field site appear to be heavily dilapidated. The most likely use for the facility is institutionally oriented. Due to its rural location well outside of Vernon's city limits, it would have little to no appeal for a commercial user.
- The city of Vernon has received some commercial development in the past five years and is supported by two major demand generators other than NT-VSPH. However, population and household growth have been slowly declining since 1990. This trend is expected to continue over the next five years.

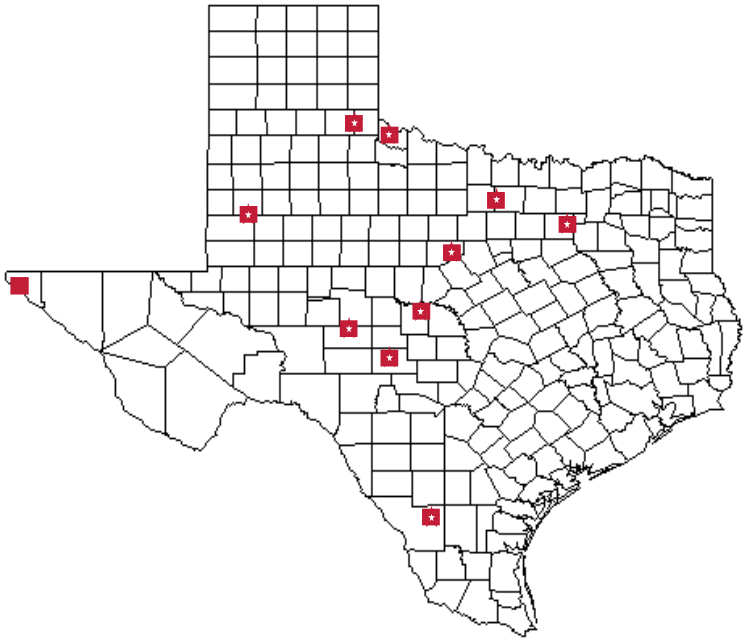
Medical space leases for $8.00 to $12.00 per square foot, while traditional office leases for approximately $6.80 per square foot. Additionally, smaller office properties that are in good condition are available for purchase in the lower to mid-$20s per square foot, while higher quality, better located office product is available for purchase in the mid $40s per square foot. Based on availability, it appears that demand for traditional office space is lighter than demand for medical office.

Section 11. Global Assessment of Care Model Summary

State Psychiatric Hospitals (SPH) are resident psychiatric facilities for persons with serious behavioral illnesses who may not be able to find care options in the community or who have been committed through the criminal justice system. The Texas Department of State Health Services (DSHS) manages the state-owned psychiatric hospitals and one state-owned resident residential treatment facility for adolescents throughout the state: North Texas State Hospital – Vernon, North Texas State Hospital – Wichita Falls, Terrell State Hospital, Big Spring State Hospital, El Paso Psychiatric Center, Kerrville State Hospital, Austin State Hospital, San Antonio State Hospital, Rio Grande State Hospital, Rusk State Hospital and the Waco Center for Youth.

SPHs are one component of the statewide behavioral health continuum of care; DSHS works with a number of local partners including Local Mental Health Authorities (LMHA), substance abuse providers, health departments, community clinics, judicial system, private providers, and others to fulfill its mission and serve individuals with behavioral illness. Local Mental Health Authorities (LMHA) are responsible for coordinating care and meeting a person's need for behavioral health services in the least restrictive settings possible.

Exhibit 11-1. Texas State Psychiatric Hospital Map



TEXAS STATE SPHs
Austin
Big Spring
El Paso
Kerrville
North Texas – Vernon*
North Texas – Wichita Falls
Rio Grande
Rusk*
San Antonio*
Terrell
Waco Center for Youth

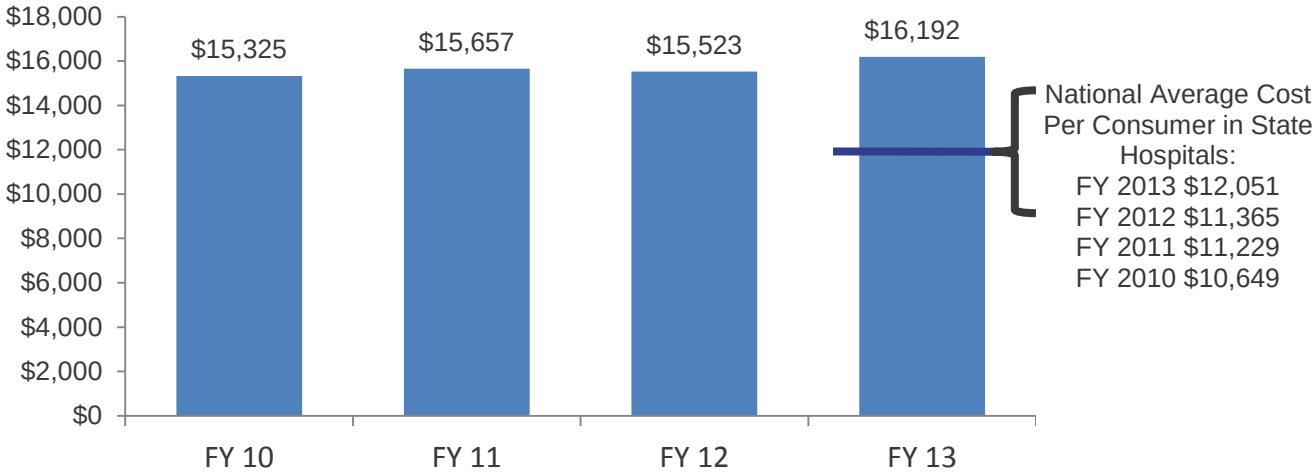
Overview

In fiscal year 2014, Texas SPHs served nearly 14,000 consumers across the entire state behavioral health system. Admissions to SPH over the last three fiscal years has fallen slightly from 14,567 admissions in 2011 to 14,030 admissions in 2013. However, at the same time, the number of annual discharges from SPHs declined two percent, further straining already high occupancy rates as discussed later in this section.

In fiscal year 2013, DSHS spent over $3 billion dollars on funding services – 60 percent of this went to Family and Community Health Services, which includes Behavioral Health and Substance Abuse Services); 19 percent went to Preparedness and Prevention Services; 16 percent went to Hospitals Facility Management and Services and the remaining five percent was split among Capital Items, Indirect Administration, and Regulatory Services.

The average cost to serve a resident in a Texas SPH increased six percent from $15,325 per resident in fiscal year 2010 to $16,192 per resident in fiscal year 2013. This average cost ranged from 25 percent to 30 percent above the national average over the past three years. In general, when compared to other populous states in the United States, Texas was observed to spend a disproportionate amount per capita on state-operated services.

Exhibit 8-2. Average Cost per Resident for Texas State Psychiatric Hospitals, FY10– FY13



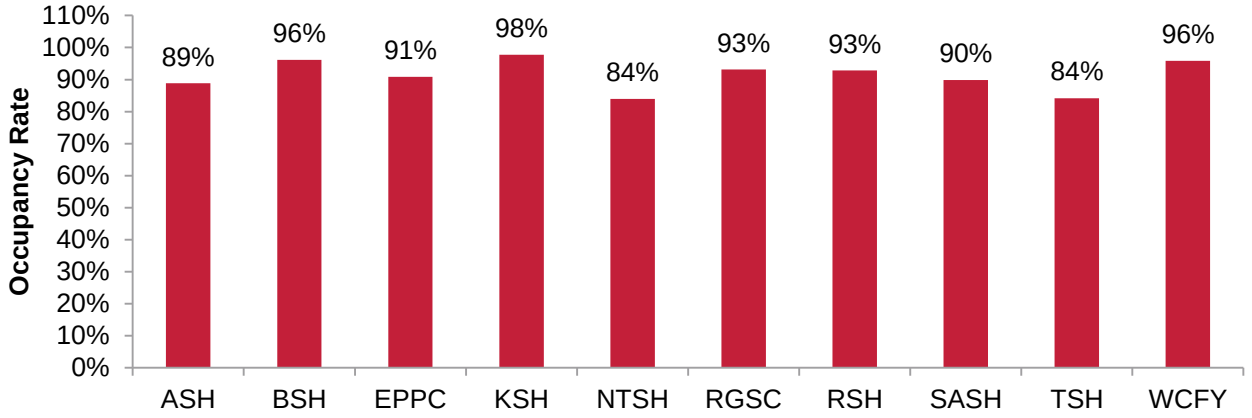
Note: Average Cost Per Consumer inflation-adjusted to reflect Fiscal Year 2013 figures

Source: "Impact of Proposed Budget Cuts to Community-Based Behavioral Health Services," Health Management Associates, DSHS Quarter SPH Financial Summaries.

Occupancy and Bed Capacity

The SPHs in aggregate operated 2,463 beds in fiscal year 2014; overall bed capacity has declined by 19 percent in the last decade from fiscal year 2001 through 2013. In the most recent fiscal year, nearly every SPH in Texas was operating over a ninety percent occupancy rate with the exception of Austin State Hospital, North Texas State Hospital, and Terrell State Hospital. Kerrville State Hospital, Waco Center for Youth and Big Spring, in particular, have the highest occupancy rates of all of the SPHs, operating at over 95 percent occupancy annually. These high occupancy rates make it difficult to manage census fluctuations or changes in resident acuity as hospitals are managing average daily population close to bed capacity. It should be noted that the operating bed capacity mentioned in the exhibit below does not include the 456 beds that DSHS currently contracts to provide additional psychiatric services around the state.

Exhibit 11-3. Texas State Psychiatric Hospital Occupancy Rates, FY14 YTD



	ASH	BSH	EPPC	KSH	NTSH	RGSC	RSH	SASH	TSH	WCFY
Avg Daily Population	266	192	67	198	537	51	339	272	243	75
Operating Beds	299	200	74	202	640	55	325*	302	316	78

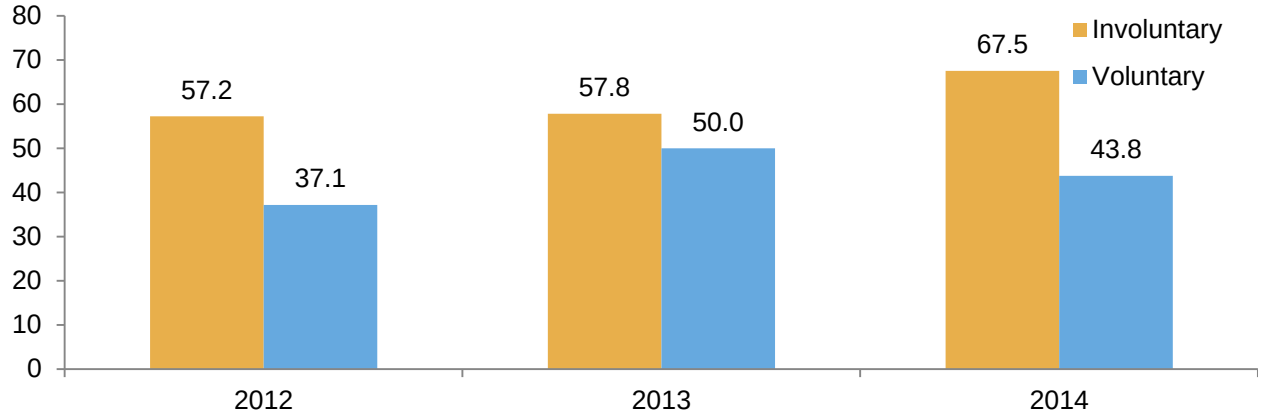
Note: As of July 1, 2014, 30 beds (UTHC-Tyler) removed from RSH totals. An additional 10 maximum security beds removed due to overcrowding.

Source: I5 "Occupancy Rates" CannonDesign analysis 2014.

Lengths of Stay (LOS)

SPHs have seen an increase in the average lengths of stay per resident. In fiscal year 2010 average length of stay was 37.1 days for voluntary admissions and 57.2 days for involuntary admissions; in fiscal year 2014, average length of stay ranged from 43.8 days for voluntary admissions vs. 67.5 days for involuntary admissions. This represented an 18 percent and 17 percent increase, respectively, for involuntary and voluntary consumers in the last three fiscal years.

Exhibit 3-4. Texas State Psychiatric Hospital Length of Stay (LOS), FY14 YTD



When length of stay was further broken out by type of resident, particularly the medically complex population (defined as consumers with both a psychiatric and medical diagnosis), LOS varied widely from the average (Hoblyn, 2009). The average length of stay for the medically complex resident in fiscal year 2013 was 94 days; with those consumers aged 45 to 64 staying on average for 132 days and those over 65 staying on average for 281 days (refer to Exhibit G-13 in Appendix G). Lengths of stays for consumers with a co-occurring substance abuse diagnosis was also higher than the average stay; consumers by top substance abuse diagnosis volume, stayed on average from 1.3 to 1.6 years across all SPH campuses (refer to Exhibit G-51 in Appendix G).

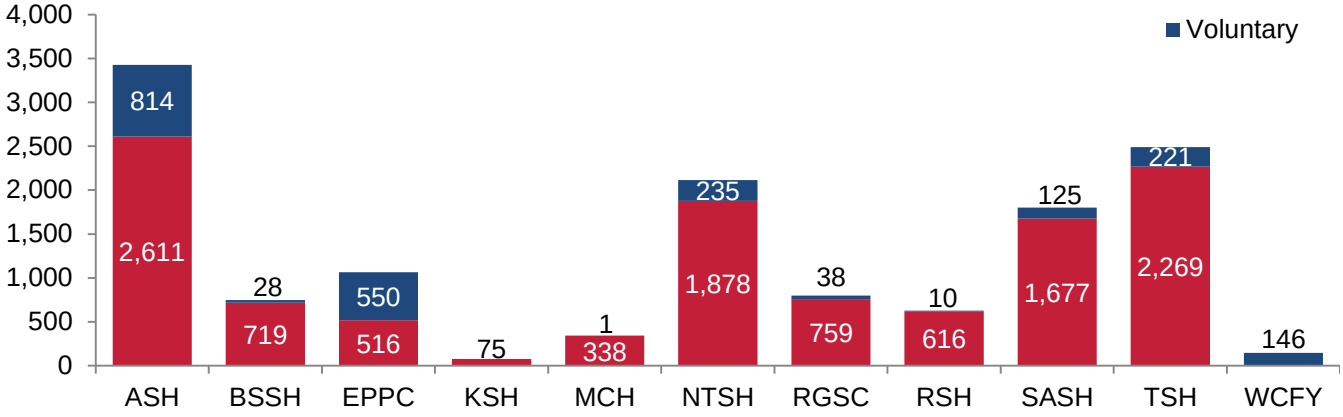
Demographics and Level of Need

Trends in the data also pointed to a complex resident population. SPHs are now admitting more individuals with comorbid conditions. From fiscal year 2012 to fiscal year 2014 YTD, the number of medically complex consumers increased 47 percent. In the last complete fiscal year, nearly all individuals (95 percent) admitted to a SPH also had a medical diagnosis with the highest rates at El Paso State Hospital, Kerrville State Hospital, and the Waco Center for Youth. In addition, nearly half of consumers admitted to a SPH also have one or more diagnosis related to substance abuse. Overall, 47 percent of admitted consumers across the SPH system had a substance abuse disorder.

In fiscal year 2014, the number of forensic consumers in the SPH exceeded the civil consumers. Over fifty percent of the population had a judiciary record and were considered to be a forensic resident; being placed in the hospital involuntarily. This changing resident profile and increased level of need has contributed to increases in LOS; combined with an already compressed numbers of civil beds, these factors indicate that SPHs will be hard-pressed to continue to keep up with these trends in the future.

Involuntary admissions made up the majority of admissions in fiscal year 2013; as noted earlier, the lengths of stay for voluntary admissions tend to be lower (43.8 days) than involuntary admissions (67.5 days). Stakeholders noted this trend and attributed it to the movement of those individuals who may be successfully treated in the community setting out of the hospital, leaving behind the most complex and behaviorally ill cases.

Exhibit 11-5. Total Admissions by Facility, Consumers Discharged in 2013



Source: DSHS Client Level Data, Provided Sample Size: 30,934, Exclusions: Unknown: 5, Blanks: 2, Discharge Prior to Q2, 2012 and After Q1, 2014: 3,318 | Voluntary: Others (by guardian, parents, legal system, etc.), Self | Involuntary Admissions include: Civil - Other, Incompetent to Stand Trial, Not Guilty by Reason of Insanity

**Admissions volumes for 2012 and 2014 are annualized linearly.*

Resident Origin

The majority of consumers in SPH originate from urban areas, namely the Dallas, Austin, and El Paso zip codes (see Exhibit G-61-71 in Appendix G). However, Exhibit 11-6 shows that for nearly half of the SPHs (Kerrville State Hospital, North Texas State Hospital, Rio Grande Center, and San Antonio State Hospital), over 50 percent of consumers were placed in a SPH facility over 100 miles away from their home county. These long travel distances can impose on family members and guardians who wish to stay active and involved in the lives of family member admitted to an SPH.

Exhibit 11-6 Distance from Resident County to Admitting SPH Facility, FY13

	DISTANCE			
SPH	**<25 Miles**	**25-50 Miles**	**50-100 Miles**	**>100 Miles**
Austin	33%	11%	30%	26%
Big Spring	11%	9%	31%	49%
El Paso Psychiatric Center	99%	0%	0%	1%
Kerrville	0%	2%	43%	55%
North Texas	11%	1%	19%	69%
Rio Grande Center	1%	6%	7%	86%
Rusk	41%	40%	10%	9%
San Antonio	34%	9%	13%	44%
Terrell	34%	9%	13%	44%
Waco Center for Youth	19%	63%	14%	4%

50% of Consumers Live within 50 Miles of Facility

50% of Consumers Live 100 Miles or More of Facility

Human Capital Trends

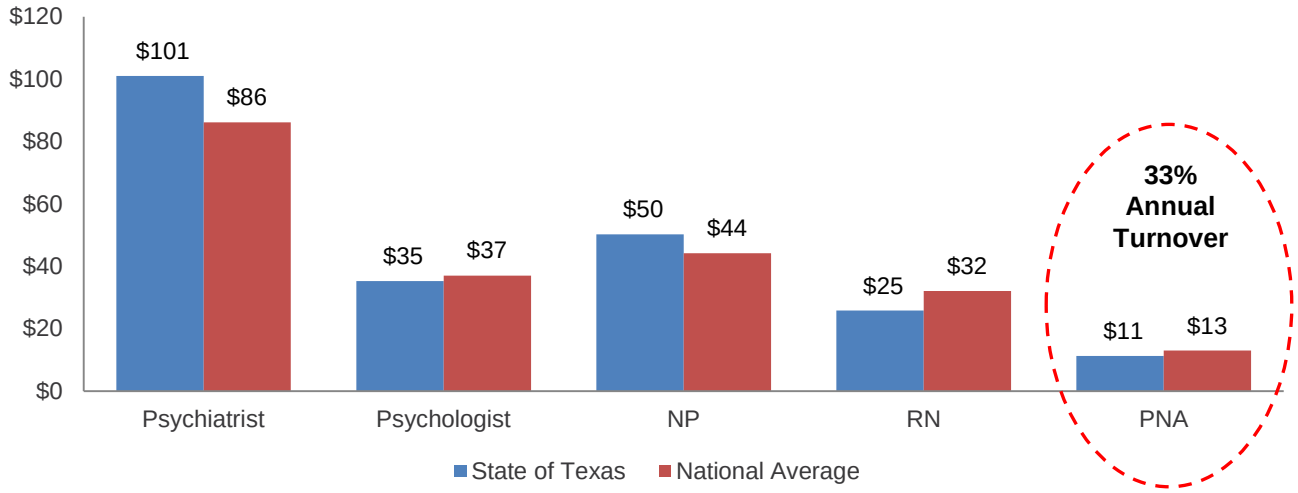
The state of Texas is experiencing a shortage of behavioral health professionals and this problem is only expected to increase proportionally with the projected growth for Texas over the next ten years. There is projected to be a shortage of staff with appropriate training and skills for all consumers with behavioral health needs. However, areas of greatest need will be the professionals who care directly for complex populations, such as individuals with co-occurring substance abuse/ developmental disabilities and behavioral health diagnoses and geriatric populations. Lack of a well-trained, appropriately-sized and diverse workforce will limit the success of a behavioral health transformation in the future.

Recruitment and retention are the most significant issues, in part due to the general workforce shortage, but also due to perceived disparities in wage rates and benefits and a desire for better working conditions. As the resident population continues to evolve and more forensics consumers enter the SPH system, the work environment may become more challenging for SPH staff members. Additionally, many seasoned employees are near or at retirement age and their departure will result in several vacancies and major voids in skills if a strong recruitment and retention plan is not instituted.

Low wages was a frequently cited factor in high turnover. When comparing average SPH wages by select clinicians and support staff against the national average, the discrepancy between wages increases by level of position. For example, psychiatrist and nurse practitioners make slightly more than the national average yet psychologist, registered nurses, and psychiatric nursing assistants (PNAs) make less than the national average. The lowest paid position, PNAs, had an annual turnover rate of 33 percent in fiscal year 2013. It should be noted that the 83rd

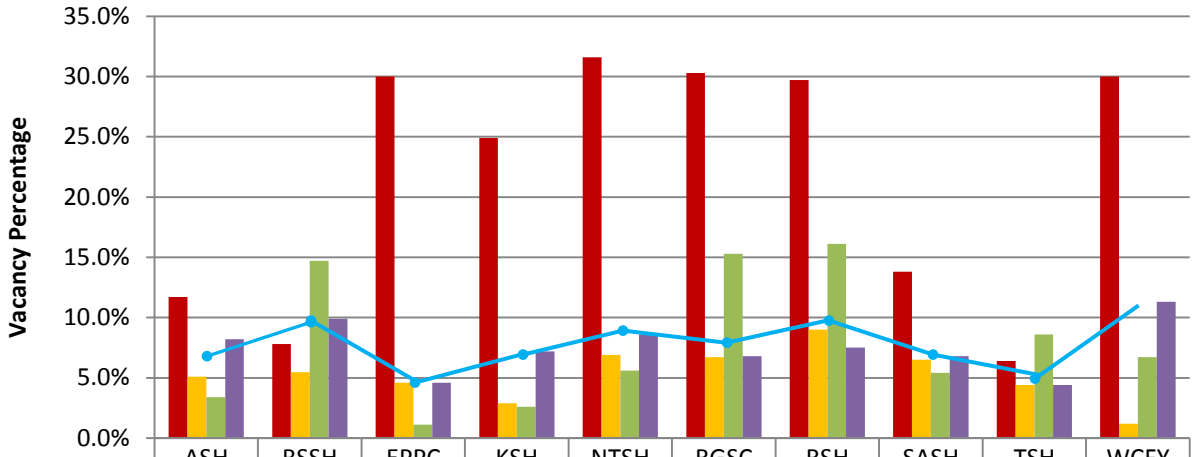
Legislature did appropriate funds for a salary increase for PNAs at SPHs; however, the impact of those changes is pending.

Exhibit 11-7. Hourly Wages of Clinicians and Support Staff for all Texas State Psychiatric Hospitals, FY14



Another measure to gauge shortages of critical qualified personnel is the vacancy rate. The overall vacancy rate across all SPHs was 11 percent in fiscal year 2013. On average, vacancy rates for physicians are fairly high due to the small numbers employed at each facility. By facility, vacancy rates for RNs ranged from one percent to seven percent; by one percent to fifteen percent for LVNs and from five percent to eleven percent for PNAs. These high and inconsistent vacancy rates not only challenge the ability of SPHs to maintain continuity of care for their consumers but also a consistent bed capacity as regulations mandate certain staff-to-resident ratios to keep beds open.

Exhibit 11-8. Average Vacancy Rates for Critical Staff at each State Psychiatric Hospital, FY13



	ASH	BSSH	EPPC	KSH	NTSH	RGSC	RSH	SASH	TSH	WCFY
Physicans	11.7%	7.8%	30.0%	24.9%	31.6%	30.3%	29.7%	13.8%	6.4%	30.0%
RNs	5.1%	5.5%	4.6%	2.9%	6.9%	6.7%	9.0%	6.5%	4.4%	1.2%
LVNs	3.4%	14.7%	1.1%	2.6%	5.6%	15.3%	16.1%	5.4%	8.6%	6.7%
PNAs	8.2%	9.9%	4.6%	7.2%	8.6%	6.8%	7.5%	6.8%	4.4%	11.3%

Section 12. Global Assessment of Community Summary

Overview

Texas's system of behavioral health care provides a diverse continuum of services, allowing consumers access to a range of programs and services. The SPHs have been able to provide services in both the inpatient and outpatient settings with the goal of returning consumers to their local communities. There is a strong emphasis on integration and collaboration that has improved the quality of services across all settings (Rosenblum, 2014). In addition, successful partnerships with local agencies have provided numerous success stories and examples of best practices.

> *"Diversion at the SH's has become an issue resulting in people being treated far from home or not at all."*
> *County Official*

Stakeholders perceived strengths of the public behavioral health care system to be:

- Consumer-Focused Care
- Comprehensive Inpatient Services
- Expanding Outpatient Services
- Crisis Intervention Emphasis
- Family Involvement

Yet opportunities for improvement and service gaps were noted. By far the most consistently noted weakness in the current system of care is the lack of funding available to provide services in the community to prevent inpatient admissions. The need for greater integration and coordination across state agencies as well as local providers is paramount to a more efficient and effective system of care. The state silos that have developed drive a lack of integration/coordination at the local level and it is not likely there will be success coordinating care locally until it is coordinated more effectively at the state level.

Other concerns cited include access to behavioral health services in rural communities, lack of services to support people with behavioral illness in their homes, and concerns about adequate housing.

Key Themes

Inequity in Funding and Service Distribution

Many participants cited an inequity in funding and service distribution in the system.
In particular they noted that rural communities often lack any resources – funds or services to meet the needs of consumers with behavioral illness. One local authority representative from a small community noted that they have no psychiatrist in the county; their regional hospital does not have a psychiatric unit and the nearest SPH is 145 miles away.

Participants suggested that instead of large, remote SPHs the state could develop smaller regional facilities. Serving individuals closer to home relieves the financial burden on families and enables them to provide better support to their family member. Ideally participants wanted a holistic model of care with hubs of care, mobile outreach, crisis respite, multi-county crisis centers, and telemedicine.

Focus on Inpatient Services Results in Few Resources Available in the Community

Participants noted there are many diverse options for keeping people out of the hospital all requiring better access to community services with more levels of care so that people get the right care at the right time.

Among the services the participants believe are absent or in short supply in the community are:

- Crisis residential services/beds
- Community-based Crisis Stabilization Units
- Day and Half-day programming
- (Jail) Diversion Programs
- Half-way Housing
- Pre-employment/Job Skills Training
- Life-skills Training
- Mobile Outreach
- Navigators
- Peer Support
- Recovery-Oriented Treatment
- Step-down residential
- Targeted Case Managers
- Telemedicine

The absence or shortage of short-term crisis beds results in many more people being admitted to SPHs for short-term stabilization, even though, the participants stated, these services can be provided more cost-effectively in the community. There was widespread agreement that the state needed to change its focus and fund services like telemedicine and other technologies and programs that would provide more treatment options particularly for rural communities.

The lack of appropriate services in the community like half-way houses, follow up care after an ER visit, and crisis respite, participants said, often leads to consumers cycling in and out of SPHs or jails.

There are Limiting Factors that Impede Provided Community Services

Stakeholders stated that Texas' strict licensure limitations on who can provide what hampered the development of community services. For example, a Texas hospital cannot provide crisis treatment outside of an emergency room because regulations do not permit them to do so. This prevents the use of hospital-based crisis management teams going into a person's home.

One psychiatrist raised the issue of a federal law that prohibits medical providers from prescribing drugs via telemedicine although clinics and hospitals are exempt from this prohibition, thus preventing a private physician from managing a consumer's medication remotely.

There is a Lack of Coordination of Care with Local Social Service Agencies

Further focus group participants asserted little communication or coordination between DSHS and the local mental health authorities exist. Many stakeholders, including local authority representatives, sheriffs, and county officials, felt inadequate communication between the local authorities and DSHS made it much more difficult for individuals transitioning from the SPHs back to the community to do so successfully.

Participants also cited the lack of coordination and collaboration between private behavioral health entities and public entities as a significant problem. This is problematic because of those with SMI who exhaust their insurance coverage. These individuals may be transferred to a SPH for care from a private facility. The lack of continuity from one system to the other causes inefficiencies and may result in diminished treatment outcomes.

> *"With the reduction in SH beds, the new "SH" is the jail."*
> *Local Authority Representative*

Participants contended DSHS also needs do a better job of coordinating with local law enforcement, schools, and acute care hospitals. They identified a need for widespread education and training for law enforcement officials and school faculty and staff. However, one participant noted the Texas Legislature passed legislation last session requiring schools to provide training to teachers, counselors, and others in the detection of behavioral or emotional disorders, but the training requirement did not come with funding.

Forensic Commitments Have Grown Due to a Lack of Community Based Alternative Services

Focus group participants cited the need for a wider-range of community services and alternatives for forensic consumers, specifically the need for locked or secure "step-down" facilities. Some communities have started to provide "re-entry services" to help behaviorally ill offenders reintegrate back to the community more successfully.

They also indicated that counties and public official need legislative relief from potential liability to make it easier to move behaviorally ill offenders back to the community once competency is restored or whatever sentence has been served.

Participants suggested taking class C misdemeanors off the table and diverting consumers to an outpatient competency program with dismissal of charges noting that Montana and California have taken inpatient diversion off the table for all but felony cases.

Housing Resources Are Not Adequate in the Community

Participants identified housing with proper supports for persons with behavioral illness as a critical need. Having a place to return to correlates directly with successful reintegration into the community. Participants cited the need to expand long-term care support services for people for behavioral illness noting that those who need long-term support services are the ones who cycle in and out of jail and inpatient care (Dickey, 2003).

> *"There is no [mental health] service model that works effectively if people have no place to live."*
> *Community Advocate*

Community advocates strongly favored three to four bed housing units designed for step down services. However, others cautioned that the state would need to consider both therapeutic effectiveness and economies of scale. Participants suggested that a Medicaid Waiver with a housing component would help address the need for housing and allow consumers to obtain only the services they needed. These could be provided by the private sector much like the HCS Waiver for individuals with developmental disabilities.

One community advocate noted that DARS provides housing supports for persons with disabilities. However, DARS only supports individuals who meet specific criteria. For example housing supports are limited to a year, but an individual with SMI may need housing support for a longer period or may cycle in and out of the system. State rules would need to be revised to support the needs of individuals with serious behavioral illness.

There is a Lack of Available Services in the Rural Communities

Many rural communities lack convenient access to acute assessment and stabilization programming due to poor proximity to behavioral health services, placing undue burden on local emergency departments and law enforcement agencies.

Behavioral Health Measures Comparison

Texas ranks below other highly populated states, as well as the national average, in many key behavioral health measures. Utilization of behavioral health services per 1,000 population is lower than the other comparative states, though SPH inpatient adult admissions is slightly higher than the national average. Additionally, in surveys measuring resident perception of behavioral health services, Texas scores lower in resident perception of access to services, quality of services, participation in treatment planning and outcomes from services as compared to other populous states, and the national average.

Exhibit 12-1. Comparing Texas' Behavioral Health Metrics with Other Large States

	AZ	CA	FL	IL	NY	PA	TEXAS	United States
Utilization Rates/Number of Consumers Served								
Community Utilization of Behavioral Health Services per 1,000 population	22.22	16.18	15.31	10.57	33.19	49.02	11.90	21.67
State Hospital Inpatient Adult Admissions	0.24	0.38	0.60	0.91[1]	0.65	0.43	1.01	0.90
Community Hospital Adult Admissions	0.37	17.63	0.60	-	0.89	1.00	0.60	2.28
Percent Adults with SMI and Children with SED	49%	89%	87%	69%	73%	62%	94%	70%
State Hospital LOS Discharged Adults (Median)	431 days	150 days	166 days	-	75 days	238 days	*17 days**	63 days
State Hospital LOS for Adult Resident patients in facility <1 year (Median)	128 days	106 days	115 days	-	86 days	93 days	37 days	69 days
Hospital Readmissions								
State Hospital Readmissions : 30 Days - Civil Consumers only	0%	3.3%	0.3%	14.3%	7.6%	1.6%	6.7%	8.9%
State Hospital Readmissions : 180 Days - Civil Consumers only	0%	11.9%	6.0%	23.5%	18.1%	6.5%	15.6%	19.6%
Resident Perception Survey Measures								
Access to Services	81%	85%	92%	-	90%	85%	77%	86%
Quality/Appropriateness of Services	83%	88%	92%	-	90%	83%	79%	89%
Participation in Treatment Planning	84%	78%	92%	-	80%	84%	65%	82%
Outcomes from Services	70%	70%	89%	-	80%	63%	56%	72%

Notes: Utilization reflects data prior to Illinois closing multiple state-operated psychiatric hospitals

**Though SAMHSA reports 17 days for Texas State Hospital LOS, this may have been incorrectly reported. Reporting Error. LOS for Fiscal Year 2010 = 52 days and LOS for Fiscal Year 2012 = 56 days*

Sources: 2012 SAMHSA Behavioral Health State Reporting Measures; CannonDesign analysis 2014.

Economic Impact of SPHs

Given these concerns expressed during staff interviews and community focus groups, it is important to quantify the economic impact that each SPH has in its respective communities, as well as the potential risk of closure by facility. An economic impact analysis concluded that the **economic impact is highest in Big Spring, Kerrville, Vernon, Rusk, and Terrell, and lowest in Austin, El Paso, San Antonio, and Waco.**

State Hospitals located in rural areas have a more significant impact on the local economy than those located in metropolitan areas.

The methodology that was used in this report to determine the economic impact is described below:

- Quantify the annual salaries of SPH employees, using hourly cost per full time equivalent (FTE) available from DSHS. Hourly costs per FTE are multiplied by 40 hours per week, then 52 weeks per year, to estimate total annual earnings.

- Estimate the indirect earnings associated with the SPH. The analysis uses the Bureau of Economic Analysis (BEA) Regional Input-Output Modeling System (RIMS) II Type I

multiplier for Texas Nursing and Residential Care Facilities. Indirect earnings are those that exist in other industries because of SPH transactions, sometimes referred to as the "halo effect." $100 of SPH earnings generates $22 of earnings in other industries.

- Determine the Gross Metropolitan Product (GMP) for each community, using information available from BEA. Data reflect 2012 and include the GMP by Metropolitan Statistical Area, Metropolitan Statistical Area, or County as available.
- Divide the direct and indirect SPH earnings by the GMP.
    - If direct + indirect earnings represent one percent or more of the community's GMP, the economic impact of the SPH is high (red).
    - If direct + indirect earnings are between 0.11 percent and 1 percent, the economic impact is medium (amber).
    - If direct + indirect earnings are 0.10 percent or less, the risk is low (green).

The economic impact, and risk associated with closing each facility, is summarized in the figure below.

Exhibit 12-2. Comparing Texas' Behavioral Health Metrics with Other Large States

Location	Annual Earnings	Earnings Multiplier	Indirect Earnings	Total Earnings Dependent on State Hospital	GMP bt MSA	Annual Earnings % of GMP	Earnings Impact Risk
Austin	$34,080,814	1.2189	$7,460,290	$41,541,104	$98,677,000,000	0.04%	Green
Big Spring	$19,373,566	1.2189	$4,240,874	$23,614,439	$1,357,692,000	1.74%	Red
El Paso	$10,436,798	1.2189	$2,284,615	$12,721,414	$29,717,000,000	0.04%	Green
Kerrville	$20,036,893	1.2189	$4,386,076	$24,422,969	$2,149,164,000	1.14%	Red
Vernon	$33,891,430	1.2189	$7,418,834	$41,310,264	$505,562,000	8.17%	Red
Wichita Falls	$32,462,150	1.2189	$7,105,965	$39,568,114	$6,038,000,000	0.66%	Amber
Harlingen (Rio Grande)	$18,104,884	1.2189	$3,963,159	$22,068,044	$9,935,722,000	0.22%	Amber
Rusk	$31,673,369	1.2189	$6,933,300	$38,606,670	$1,560,724,000	2.47%	Red
San Antonio	$31,947,714	1.2189	$6,993,355	$38,941,068	$91,995,000,000	0.04%	Green
Terrell	$33,206,693	1.2189	$7,268,945	$40,475,638	$3,775,935,000	1.07%	Red
Waco Center for Youth	$7,323,133	1.2189	$1,603,034	$8,926,167	$9,691,000,000	0.09%	Green
Total	**$272,537,444**	**1.2189**	**$59,658,447**	**$332,195,891**	**$255,402,799,000**	**0.13%**	

The Big Spring, Kerrville, Vernon, Rusk, and Terrell economies are the smallest, so earnings associated with the SPHs located in those communities are the most significant. In Vernon, the total GMP is only about $500,000, with the SPH responsible for approximately $41,000 of the area's earnings.

Larger metropolitan areas have more robust economic bases, so the SPHs are less vital to overall economic activity. Austin's GMP exceeds $98 million, so the SPH earnings of approximately $42,000 represent only a small fraction of the total economy.

The economic impact also depends on the size of the SPH. Harlingen and Waco have similar MSA GMPs, but the Harlingen facility is considerably larger, representing a higher percentage of the overall value of goods and services produced.

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