STATE OF MARYLAND
DHMH
Maryland Department of Health and Mental Hygiene
201 W. Preston Street • Baltimore, Maryland 21201
Martin O'Malley, Governor – Anthony G. Brown, Lt. Governor – Joshua M. Sharfstein, M.D., Secretary

DEC 16 2011

The Honorable Edward J. Kasemeyer, Chair
Senate Budget and Taxation Committee
3 West Miller Senate Building
Annapolis, MD 21401-1901

The Honorable Norman H. Conway, Chair
House Appropriations Committee
Room 121, House Office Building
Annapolis, MD 21401-1912

RE: 2011 Joint Chairmen's Report, Page 72, M00L – Independent Study on the Future Demand for State-run Psychiatric Hospital Capacity – Extension Request

Dear Chairman Kasemeyer and Chairman Conway:

The Department respectfully requests an extension until September 1, 2012, to submit the report regarding an independent study on the future demand for state operated psychiatric hospital capacity required by page 72 of the Joint Chairmen's Report of 2011, Budget Code M00L.

The Mental Hygiene Administration has completed a solicitation for the study and the oral presentations of those vendors who met the technical requirements. We have requested a best and final offer from the recommended vendors that are competing for this project. We are confident that the winning bidder will be able to begin the scope of work this winter with all deliverables completed in the summer of 2012.

If you have any questions or need additional information, please contact Brian Hepburn, MD, Executive Director, Mental Hygiene Administration, at 410-402-8452 or bhepburn@dhmh.state.md.us.

Sincerely,

Joshua M. Sharfstein, M.D.
Secretary

cc: Thomas Kim
Renata Henry
Brian Hepburn, MD
Elizabeth Barnard
Mary Sheperd
Marie Grant
Patrick Dooley
Cathy Kramer, DLS
Simon Powell, DLS

STATE OF MARYLAND

DHMH

Maryland Department of Health and Mental Hygiene
201 W. Preston Street • Baltimore, Maryland 21201
Martin O'Malley, Governor – Anthony G. Brown, Lt. Governor – Joshua M. Sharfstein, M.D., Secretary

September 28, 2012

The Honorable Edward J. Kasemeyer
Chair
Senate Budget and Taxation Committee
3 West Miller Senate Building
Annapolis, MD 21401-1901

The Honorable Norman H. Conway
Chair
House Appropriations Committee
Room 121, House Office Building
Annapolis, MD 21401-1912

RE: 2011 Joint Chairmen's Report, Page 72, M00L – Report on the Potential Demand for State-Run Psychiatric Hospital Capacity

Dear Chairman Kasemeyer and Chairman Conway:

Pursuant to page 72 of the Joint Chairmen's Report of 2011, the Department of Health and Mental Hygiene (the Department) respectfully submits this report on the future demand, community strategies, and best practices for Maryland's State-run psychiatric hospitals. The committees restricted funding for the purpose of requiring that a consultant be engaged to analyze short and long term population trends in order to project future bed capacity needs while considering ways to maximize use of community based alternatives to hospitalization. The report of the consultant, Cannon Design, is enclosed.

The Department appreciates the efforts that Cannon Design undertook in developing their report and the participation of many stakeholders in the state. We concur with Cannon Design in its recommendations supporting:

1) additional community support services such as increased use of peer support networks, Wellness and Recovery Action Plans (WRAP), and peer run crisis services;

2) financial incentives to increase provider risk for outcomes;

3) additional affordable and supportive housing options;

4) greater partnerships with local businesses to provide additional employment opportunities;

5) improved use of technology through the implementation of Electronic Health Records and additional telepsychiatry capacity; and

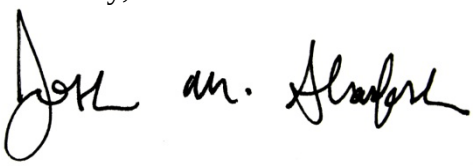
6) expanded community after care services and residential beds.

The Department does not concur, however, with Cannon Design's estimates of future state hospital bed need over the next decade. With the efforts that the Department is already implementing and considering to decrease inpatient bed needs, it would be premature to undertake the substantial expense of building a new facility. Upcoming changes in behavioral health care financing and expanded community capacity should further reduce the need for inpatient services. Our view is that the right time to consider a new facility is after these efforts have been implemented and their impact is well understood.

Should the need arise for additional beds in the short term, the Department has the ability to reclaim units at State hospitals before moving ahead with a new project. There are currently more than 200 beds, including those from the recently closed Assisted Living Units, that may be used if necessary.

The Department will provide an update on our planning in the report required by page 61 of the Joint Chairmen's Report of 2012, which is due on January 1, 2013. In the meantime, if you have any questions regarding this report, please contact Ms. Marie Grant, Director of the Office of Governmental Affairs, at (410) 767-6480. Thank you for your interest and review.

Sincerely,



Joshua M. Sharfstein, M.D.
Secretary

Enclosure

cc: Thomas Kim
Brian Hepburn
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Mary Sheperd
Simon Powell
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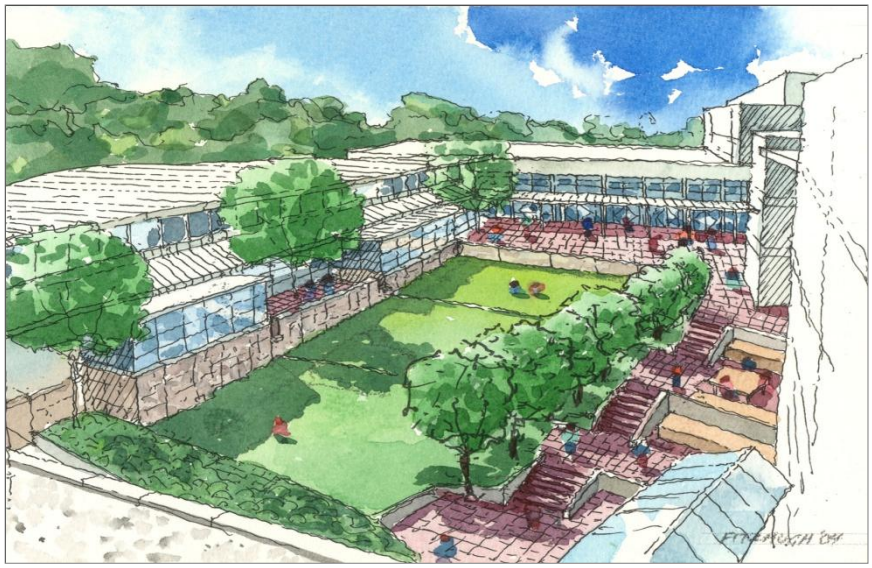
INDEPENDENT STUDY ON FUTURE DEMAND FOR STATE-OPERATED PSYCHIATRIC HOSPITAL CAPACITY

State of Maryland
Department of Health & Mental Hygiene (DHMH)
Mental Hygiene Administration (MHA)

July 17, 2012



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CANNONDESIGN

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1. Introduction

1.1 Acknowledgements

This study has been a collective and collaborative effort of many people. Special acknowledgements go to all who gave generously of their time and dedication to aid in the development of this study.

Maryland Department of Health and Mental Hygiene, Mental Hygiene Administration

Brian Hepburn, MD	Executive Director
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Gayle Jordan-Randolph, MD	Clinical Director & Interim Director of Forensic Services
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Albert Zachik, MD	Director, Child & Adolescent Services
W Lawrence Fitch, JD	Director, Forensic Services
Alice Hegner	Director, CSA Liaison
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Elizabeth Barnard	Director, Office of Capital Planning, Budgeting and Engineering Services
Arthur Blumenthal	Supervisor-Programmers/Analysts, Office of IT (DHMH)
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Thomas B. Finan Center

Judith Hott, RN	CEO
John Cullen	Administrator, Operations
Beverly Crawford	Supervisor of Health Records
Cindy Gero	Quality Improvement
Linda de Hoyos, MD	Clinical Director

Eastern Shore Hospital Center

Teresa Tyndall, LCSW	Acting CEO
Kelley Phillips, MD, MPH	Interim Clinical Director
Randy Bradford	COO
Jack O'Brien	Manager, Quality Improvement

Clifton T. Perkins Hospital Center

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Thomas Lewis	COO
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Rachel Jenkins	Director of Plant Management
Muhammed Ajanah, MD	Clinical Director
Chanda Hamilton, RN	Chief Information Officer

Springfield Hospital Center

Paula Langmead	CEO
Erik Roskes, MD	Director, Forensics Services
Jonathan Book, MD	Director, Clinical Services
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Community and Other Representatives

Sharon Bogins	Assistant Public Defender
Denise Camp	WRAP Outreach Trainer / Coordinator, OOOMD
Herbert Cromwell	Executive Director, Community Behavioral Health Association
Sue Diehl	Former President, Baltimore Mental Health Systems
Kathleen Ellis	Deputy Counsel Assistant Attorney General
Michael Finkle	Executive Director, On Our Own of Maryland (OOOMD)
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Barbara Hull Francis	Assistant Attorney General
George Lipman	Associate Judge, District Court of MD, District 1, Baltimore City
Cathy Marshall	CEO, Potomac Center
Phyllis McCann	Director, Forensic Prosecution
Linda Raines	Executive Director, Mental Health Association of Maryland
Kenneth Wireman	Executive Director, Main Street Housing, OOOMD

1.2 Project Approach

The State of Maryland Department of Health and Mental Hygiene (DHMH) and Mental Hygiene Administration (MHA) commissioned Cannon Design, a full-service architecture, engineering and interior design firm, and New Heights Group, a healthcare consultancy, to undertake a study to address future demand, community strategies and best practices for Maryland's state-owned psychiatric hospitals. The study was conducted in response to the Maryland Joint Chairman's language requesting that consultant services be engaged to analyze population trends in order to project future capacity needs while considering ways to maximize use of community-based alternatives. The report includes an assessment of not only the infrastructure of the five state-owned hospitals, but also the community-based alternatives and strategies that could co-exist to relieve some of the burden from state facilities.

Current State Assessment
The goal of this phase was to establish the current state of Maryland's state psychiatric hospital system. Throughout Phase 1, Cannon Design engaged a diverse group of stakeholders including the Mental Hygiene Administration leadership team, state hospital leadership and directors, community advocate groups and others. Cannon Design collected and reviewed relevant data to develop a clear understanding of the current strengths, challenges and opportunities for the state hospital system.

Future State Assessment
Cannon Design projected future demand for state psychiatric services and assessed the delivery of community health services today. Key deliverables included a high-level assessment of community strategies, custom growth projections and facility best practices from other state psychiatric facilities.

Initial Strategies and Recommendations
In this phase of work, Cannon Design developed high-level facility recommendations based on the assessment from the prior two phases. This performance-based program was linked to a variety of factors including current and projected psychiatric services demand, future service scenarios, site limitations, facility floor plan fit and other important drivers affecting space and physical layout.

Final Recommendations
In this phase, Cannon Design finalized facility recommendations for those options that best fit the vision of state psychiatric health services in the future.

Note About Language
The word “patient” is used throughout this report, referring only to the person’s status as an inpatient at a Maryland state psychiatric hospital, receiving inpatient services from a provider. Otherwise, we refer to people as “individuals.” We are aware of the stigma that certain words have in the mental health realm and have endeavored to do our best to use the term in a contextual role, not as a description of the person.

1.3 Executive Summary

Maryland's Department of Health and Mental Hygiene (DHMH) and Mental Hygiene Administration (MHA) engaged Cannon Design in conjunction with New Heights Group to develop an independent study to project future demand for Maryland's state psychiatric hospital capacity, identify gaps in the mental health care continuum and highlight facility best practices. From February to June 2012, Cannon Design met regularly with an advisory group of key stakeholders, interviewed over 50 individuals directly involved in the care of persons with mental illness and toured each of the five state facilities and campuses.

This study focuses on the future capacity needs of the five state psychiatric facilities factoring in the use of community-based alternatives, short and long-term population trends for individuals served by the state psychiatric hospitals and their respective needs and/or barriers that hinder the development and provision of appropriate services to these populations. 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 adult individuals served by the state hospitals; it does not include a detailed analysis of juveniles and children with mental illness, the Regional Institutions for Children and Adolescents (RICA) centers or individuals with developmental disabilities or substance use disorders.

Maryland Mental Health System Overview

State psychiatric hospitals, inpatient and outpatient community programs (outside the state hospital system), housing and transition options and the criminal justice system all play a role in Maryland's comprehensive continuum of mental health care. These components of the continuum require frequent collaboration between both state and local providers and agencies in order to identify individuals with mental illness, develop the appropriate course of treatment according to their needs and acuity level and advocate alternative avenues of care when individuals are ready to transition into the community or are able to achieve independent living.

Future demand projections for state psychiatric hospitals should be considered in the context of the broader continuum of care so that individuals with mental illness can be matched with the services that are best suited to their unique needs. For example, through investment in community services, it is possible to shift a portion of the inpatient state hospital demand over to community programs for patients who are ready to make this transition. In addition, more aggressive community program investment can lead to decreased arrests and incarcerations of those with mental illness, thereby decreasing the utilization of the criminal justice system.

This interrelatedness between components of the mental health system of care can be observed with the recent decline in Maryland's state hospital admissions, which was partially enabled through investment and expansion in community programs, policies and initiatives intended to transition long-term patients out of the state hospitals. The civil state hospital population in particular has declined in response to diversion programs in the community, as well as other factors.

This study considers the integrated relationship between the state psychiatric hospitals and community programs so that the future demand for the inpatient hospitals can be projected depending on the level of future investment in community programs and holistic coordination and management of patient care.

Maryland State Psychiatric Hospital Assessment

Maryland's five state psychiatric hospitals, Clifton T. Perkins Hospital Center, Springfield Hospital Center, Spring Grove Hospital Center, Eastern Shore Hospital Center, and Thomas B. Finan Center, are examined in this report within a physical infrastructure and a care delivery context. This study concludes that state psychiatric hospitals play a critical role in treating people with mental illness with limited community placement options, forensically involved individuals and the most complex and vulnerable cases in the state, but face significant hurdles that will hinder care delivery in the future.

Most notably, aging facilities and deteriorating plant infrastructure of the state psychiatric institutions pose considerable challenges in delivering safe, efficient patient care and represent long-term financial risk to the state. With the exception of Clifton T. Perkins, state-operated facilities were designed to serve a vastly different population than the forensic-dominated one they serve today. Existing spaces are not adequately configured, sized or designed to meet the needs of a modern psychiatric program or to create an optimal environment for safety and security.

Widespread economic downturn and state deficits have cut funding for public services in the past few years, disproportionately impacting the public mental health system. State psychiatric bed capacity has been reduced by 67% in the past 30 years, although claims for community services and expenditures have grown by 46% and 31% respectively from FY07 to FY10. Average daily population – the average number of individuals being treated – for state psychiatric hospitals declined over the past decade as state hospitals closed and policies directing movement of civil patients to the community setting were enacted. Average daily population is now limited by available bed supply as state hospitals move towards a forensic-dominated model and serve a greater number of individuals with complex, long-term needs. State psychiatric hospital annual occupancy rates range from 95% to 104% as overall average daily population exceeds the total number of operating beds. Combined with a 9% increase year-over-year in average length of stay (ALOS) over the past decade, these trends indicate that further capacity cuts may further stress access to inpatient services, staff and patient safety and quality of care unless changes to available capacity, community investment and barriers to systemic coordination are made.

Additional impediments include discharge delays due to lack of community housing and/or alternative step-down facilities, lack of intersystem communication and coordination, and workforce shortages. These factors cause bottlenecks within the mental health services continuum, leading to a backlog in the state psychiatric hospitals.

Community Evaluation

Maryland's system of mental health care provides a strong continuum of services, allowing consumers access to many high quality programs and services. There is a strong emphasis on evidence-based practices that have improved the quality of services across all settings. In addition, successful partnerships with other state agencies and innovative programs operated by consumer advocacy groups have facilitated new programs aimed at keeping consumers healthy and in the community. Stakeholders perceived numerous strengths of the public mental health care system, including consumer-directed care, diversion efforts, and subsidized housing initiatives.

Yet several 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 available housing for the mentally ill - particularly for those who have been incarcerated or have a history of violence and/or crimes of a sexual

nature. The high cost of real estate in Maryland is the primary noted reason for this critical weakness. Management of housing for people with mental illness crosses agencies (MHA and Department of Housing (DOH)) and requires interagency collaboration to support it. Despite good working relationships and several successful collaborations, the agencies each have separate departmental agendas and the priorities of one may not always be consistent with the priorities of the other. Shifts in funding can occur as a result, leaving one provider short of resources to implement the needed services. 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 mental health services in rural communities, lack of services to support people with mental illness in their homes and concerns about the current fee-for-service system's ability to fit services to the consumer.

The following strategies were recommended to address identified gaps within the mental health services care continuum and to alleviate bottlenecks affecting throughput for state psychiatric hospitals.

Expand breadth and reach of current initiatives. A number of evidenced-based best practices have been implemented in Maryland; however expanding successful programs statewide has been limited.

1. *Peer-supported networks*. Maryland can better leverage the peer support systems currently in place in the state hospitals, and expand these initiatives to community-based settings. These networks can be effective tools across the continuum, particularly in preventing need for additional ‘intercepts.'
2. *Diversion programs (Intercepts 1-3 from Sequential Intercept Model)*. The early intercepts that are key in a sequential intercept model (See Appendix E) – drop off centers/urgent care, pretrial and jail diversion programs, enhanced and expanded use of mental health dockets and mental health courts – have been implemented in various degrees across the state. Greater ‘buy-in’ from the court system are needed for this evidence-based practice to succeed.
3. *Telepsychiatry*. Maryland has initiated some telepsychiatry initiatives in the eastern and western parts of the state, but it does not appear that they has been leveraged to their full capability. Telepsychiatry can be used to provide psychiatric consult and support at multiple settings across state. Implementing telepsychiatry programs in which teleconference devices such as webcams are used to enhance communication between provider and consumer would prove most useful in rural environments. The established network can be used by acute care hospitals, jails, mobile crisis/ Assertive Community Treatment (ACT) teams, community mental health programs and other groups. The technology could also enhance professional training, increase recruitment and retention in rural hospitals and spur communication of best practices between state psychiatric hospitals and acute care hospitals and the Developmental Disabilities Administration (DDA). In addition, there is the potential to partner with acute care hospitals and designated rural counties that have systems already in place to minimize implementation cost.

Create new initiatives to further expand depth and breadth of services.

4. *Establish targeted forensic monitoring*. Expanding Community Forensic Aftercare Program (CFAP) services to include targeted case monitoring would assist with monitoring of treatment compliance and progress of individuals deemed Not Criminally Responsible (NCR) on conditional

release or others with court supervision issues. It would also allow CFAP to serve as liaison between individual, court, and community.

5. *Establish additional levels of community residential beds.* Establishing greater range of community residential programs would facilitate easier transition from hospital to community while 'flexible' beds could be adapted based on the needs of the consumer.
6. *Shift risk to community providers and Core Service Agencies through funding/payment changes.* Changes in the current fee-for-service payment system could facilitate reallocation of funds from higher intensity services (e.g., hospital) to lower intensity/community based services and programs (e.g., rental subsidies). The state may need to shift *how* it pays for care as well as *what* it pays for in an effort to focus resources on those services needed to keep consumers healthy.

Future Landscape

In Maryland, a number of impact factors ranging from market trends to care delivery models will influence state hospital demand over the next decade. Those factors include an anticipated overall population growth of 5% over the next ten years, growing prevalence of arrests and incarceration among individuals with mental illness, and future focus on quality outcomes and efficiency of care driven by health care reform. In particular, people ages 65 and older will comprise the fastest growing age groups, driven by the ageing of the Baby Boomer generation and net out-migration of younger (age cohorts 15 to 20) and middle-age cohorts (age cohorts 25 to 54). Changes in the general population can affect mental health services utilization, as aging cohorts consume healthcare resources at a higher rate, given the corresponding rise in chronic diseases and age-related mental illnesses. In addition, the aging population may have implications for the criminal justice system as research has shown that criminal offending peaks in late adolescence and then declines throughout adulthood.

Cannon Design set a ten-year time horizon and utilized both historical hospital utilization data and market population projections to forecast volumes that may be indicative of future demand for state psychiatric hospital care. The first step in forecasting process was to create a *baseline* volume forecast. The baseline forecast is a "demand" forecast, meaning it is based on a model of market demand for services, not taking into account supply side factors or changes in institutional strategy. The baseline forecast also assumed status quo – that is, current policies, strategies, facilities and investment will hold constant into the future. The baseline forecast for state psychiatric hospital growth was created utilizing historical Maryland Hospital Management Information System (HMIS) data as well as population forecasts and other variables directly related to state psychiatric hospital populations. Assuming that no significant investments or institution and state-wide changes are made, baseline projected growth is expected at 7% to 1,322 admissions from FY11 admissions of 1,248 over the next ten years, driven by increases in overall population and forensic population. The second step in the forecasting process was to develop a *custom* forecast, adding demand due to capacity constraints and wait-listed individuals from acute care providers who represent potential admissions to state psychiatric hospital. Customized demand for Maryland's state psychiatric hospitals is forecasted at 30% growth to 1,625 admissions assuming no significant investment in community services or effective strategies to divert admissions from the inpatient setting.

Future Capacity Need

Maryland's state psychiatric hospitals' overall inpatient capacity is 944 beds as of FY11. Factoring in latent demand, bed need is expected to grow in the absence of additional community investment. Depending on the community strategies selected for implementation, future bed needs can be modified.

This report divides the community strategies into scenarios for implementation ranging from status quo to comprehensive. Scenarios were based on selected assumptions of impact on state psychiatric hospital inpatient bed capacity. It should also be noted that although this study's primary focus was on individuals served by the state hospitals, the recommended community strategies could benefit all individuals served by the public mental health system.

For the projected bed need scenarios, Cannon Design recommends a target occupancy rate of at most 95% for state-operated facilities, which reflects the upper limit that should be attained to provide capacity to manage census fluctuations as well as changes in patient acuity. As the scenarios become more comprehensive and include more programs to divert individuals from utilizing state hospital beds, future state psychiatric hospital bed need declines.

Status Quo – Under the status quo scenario, all current policies and investments stay constant over the next decade. State psychiatric hospitals operate as they do today and proposed additional community strategies are not implemented. The only changes driving demand for adult mental health inpatient services for the state hospitals are demographic shifts and normal utilization trends. This scenario is intended to be used as a baseline to determine what future bed need capacity might be without changes to the current mental health system. Under status quo, bed need will increase to 1,426 beds by 2021, or 482 more beds than exist today.

Scenario A: Conservative – Under Scenario A, community strategies identified to have the highest ease of implementation and lowest capital requirements are implemented. Of the six community strategies, peer-supported networks and telepsychiatry were recommended for the conservative scenario. Scenario A is the most conservative scenario and projects bed need capacity for Maryland state psychiatric hospitals at 1,394 beds by 2021 or 450 more beds than exist today.

Scenario B: Moderate – A range of community strategies with moderate ease of implementation and capital requirements are implemented in Scenario B. Community strategies of peer-supported networks, telepsychiatry, alternative community beds and forensic monitoring were included in the Moderate scenario. This scenario projects needed bed need capacity at 1,282 beds by 2021 or 338 more beds than exist today.

Scenario C: Comprehensive – All recommended community strategies (peer-supported networks, telepsychiatry, alternative community beds, forensic monitoring, Intercepts 1-3 and funding/payment changes) are fully funded and implemented. Scenario C is intended to represent the best case scenario and potential bed need under the best circumstances. This scenario projects needed bed need capacity at 1,160 beds by 2021 or 216 more beds than exist today.

Conservative investment in community resources, or Scenario A, may decelerate growth of needed bed capacity, but will not reverse this trend. Conversely, comprehensive investment in the community, or Scenario C, will have the greatest impact on reducing demand for bed capacity but will require significant investment and time to align efforts at a systemic level. Scenario B was initially considered for implementation as the most realistically attainable scenario in the short- to mid-term. However, given historical and growing state commitment to investment in the community and following further consultation with executive leadership at MHA and DHMH, it was decided that recommendations would take a longer-term view and consideration of Scenario C would best address the identified gaps in the community while alleviating projected future demand for bed capacity.

Facility Trends

Assessment of facility trends across the nation demonstrate an increase in demand for forensic beds, the downsizing of aging campuses, the trend towards consolidated structures and continued demand for specialized mental health beds. Using Cannon Design's portfolio of experience and benchmarking the fifteen most recently constructed state psychiatric facilities around the country, the following trends were evident: flexibility and adaptability, 100% private rooms, standardization of unit size/layout to facilitate flexibility and adaptability, normalizing patient environment through the use of therapy and treatment malls as destinations, building zoning that allows patients to move toward self-directed care with privileges as they approach discharge and access to public spaces such as gymnasiums or conference rooms by the community and outside organizations to decrease stigma.

When looking at the benchmarked facilities, the average size of a new state facility in the last decade is 295 beds and the average building gross square feet (BGSF) per bed is 1,278. In more recent years, for facilities designed specifically for forensic patient care, the BGSF/bed is slightly elevated to approximately 1,500 BGSF/bed. This allows for "point of care" therapy spaces within the patient care unit for those individuals that are not able to utilize the centralized therapy mall programs. Examples of these on-unit spaces could be additional group therapy spaces, exercise rooms and visitor rooms within the unit sally port area. This increase also allows for admissions areas, sally ports and larger staff work areas that allow for panoramic visibility to as many patient spaces as possible.

Patient therapy malls have emerged as vital to the creation of a therapeutic environment that supports patients as they transition through recovery. Modern facilities incorporate flexible therapy malls that allow for expansion and contraction and flexibility for change of programming. In addition, many new facilities are including secure outdoor spaces into the therapy mall areas to provide a connection to nature and to foster a healing environment.

Lastly, best practice design includes a balanced approach to the need for safety and security and the need for a therapeutic environment that supports patient dignity and privacy. New building construction should look at passive ways, in addition to the active technology approaches, to provide security and safety for both the staff and patients such as clear lines of sight, locating staff workspaces for secondary observation, limiting distances of bed wing corridors and limiting support services traffic within the patient care unit.

Overall Recommendations

This study provides recommendations focused not only on improving the delivery of mental health services to individuals served by the state psychiatric system, but also on addressing other areas that have trickle-down effects on the state hospitals. Additionally, these recommendations are intended to spur and guide additional discourse with the objective of promoting and advocating a holistic system that delivers effective and integrated mental health care across the State of Maryland.

MHA System Recommendations

Clarify Long-Term Investment Strategy for the State Psychiatric Hospitals and Carve out Role within an Enhanced Community-Based System

Individuals struggling with long-term psychiatric illness, highly complex needs and legal entanglements are among the most vulnerable members of Maryland's society. The state serves a unique and virtually irreplaceable role in providing this care as there are few viable, alternative avenues. State deficits and

economic deterioration have resulted in cuts in funding for public health services, including a 67% reduction in state psychiatric beds in the past 30 years. However, the demand for mental health services for this vulnerable population has not experienced a corresponding decrease and is expected to continue to require increasing resources in the future. It is crucial that the identity of the state psychiatric hospitals is clearly articulated and supported with the appropriate capital plans that will affirm its mission as an integral part of the state's investment in its mental health and health services system. If the state pursues an aggressive investment strategy in community-based resources, it must ensure that front-end and back-end services are closely integrated with the state psychiatric hospitals to improve the flow of individuals through a system of more responsive and proactive care.

Improve Interagency Coordination and Accountability

Services utilized by individuals with mental illness require joint planning, coordination and continual communication with other state systems, including the justice system, housing, employment, corrections, education, substance abuse, developmental disabilities and Medicare/Medicaid payment systems, among others. Current lack of coordination has resulted in a fragmented system of service delivery and fostered gaps in services resulting in confusion around accountability and outcomes for both the service delivery system and the individuals being served. It is recommended that much tighter integration and coordination of service delivery occur between the Department of Health and Mental Hygiene / Mental Hygiene Administration and other key agencies and jurisdictions, which have maintained independent public mandates and developed as separate silos under the state government up to this point. Specific recommendations include:

- Create an Interagency Coordinating Committee to address cross-system issues, simplify regulations and incentives and to establish shared goals and approaches for implementation of the recommendations.
- Assess the current division of responsibilities between offices to address the complex regulatory environment and streamline care delivery to individuals with mental illness and individuals with multiple challenges whose needs are being met by multiple agencies today.
- Develop policies and incentives that promote service integration, coordination and collaboration between agencies, services and across systems. State policies must support interagency collaboration and the use of appropriate guidelines and incentives to promote adherence to state-wide practices.
- Streamlining regulations, funding and operational structures at the state as well as community level
- Facilitate movement of forensic population between the criminal justice system and mental health treatment through promotion of coordinated re-entry programs for jail and prison inmates needing mental health services upon release to the community. Improve collaboration with probation/ parole to avoid non-mental health admission and coordination with mental health services in corrections including intake screening and evaluation.
- Conduct additional studies of other state agencies, including the Department of Public Safety and Correctional Services (DPSCS) and Developmental Disabilities Administration (DDA), and map the flow of individuals with mental illness across systems. Specifically, a deeper dive investigation into the forensic population can address additional opportunities to streamline care and target early identification.
- Review and evaluate the total mental health system cost (DOH, DHMH, and criminal justice system, community services) to understand where opportunities exist to either pool or shift funding.

- Changes to the funding/payment system within and across agencies to create a shared responsibility and authority for managing these complex populations effectively. When goals and responsibilities are shared, the chances for an integrated solution improve.

Address Mental Health Workforce Shortage / Recruitment / Retention
In addition to the anticipated shortage of behavioral health professionals, there is projected to be a shortage of staff with appropriate training and skills for specific populations such as individuals with co-occurring (substance abuse/ developmental disability and mental health) diagnoses and geriatric populations. Lack of a well-trained, appropriately-sized and diverse workforce will limit the success of a mental health transformation.

Recruitment and retention are 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. 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.

Recommendations for addressing the workforce shortage and retention include:

- Increase housing alternatives for state employees: an increase in housing alternative for employees would provide accessible, affordable housing near their site of care.
- Conduct market wage assessment for state employees: a current market assessment for state employees' wage and salary rates should be conducted to determine and address major gaps in compensation and benefits.
- Review staffing levels and overtime: staffing levels at state psychiatric facilities are often prone to overtime hours and pay – this should be reviewed to facilitate a reduction of overtime expenses and determine where gaps or overages exist in staffing levels for each department.
- Utilize technology: e-training for hospital staff and community providers can address training gaps and needs, especially in rural communities and in discussing complex cases.
- Renovating or building new state hospital facilities with a focus on efficiency and safety can also help increase recruitment and retention, as staff satisfaction would improve in these areas.

Focus on Early Identification of Individuals Requiring Treatment Entry Into the Criminal Justice System
The state mental health system has frequently been characterized as a reactive, not proactive system, with many individuals receiving care only after entering the criminal justice system. Establishment of regional crisis intervention center, particularly in the Baltimore City area, in conjunction with partner agencies within the criminal justice, mental health and substance abuse systems, can aid in identifying individuals requiring care prior to entering the criminal justice system.

Standardize and Institute Consistent Accountability Measures and Controls
Accountability at all levels of the system is required to advance the delivery of quality services that are evidence-based and able to demonstrate clinical outcomes that promote individual rehabilitation and recovery. There are multiple levels of administration within the state system and across human service systems; a single entity accountable for services coordination and integration, there is inconsistent enforceability. In addition, establishment and measurement of commonly-measured clinical quality and performance outcomes will increase transparency and identify variation in care.

Our recommendations to address the accountability measures include:

- Develop and implement methodologies and protocols that measure client outcomes and that are consistent across all state facilities and providers.
- Establish demonstration projects to test various methodologies and measures of service system accountability.
- Develop standard definitions of care and measures across different settings and providers. Clear definitions of care by type and level and reporting of performance will help to minimize confusion around different program offerings and aid in approving plans for care.
- To reduce the impact of the Assisted Living Unit (ALU) closures occurring by September 1, 2012, MHA and the state psychiatric institutions will need to work closely with community providers and the Judiciary to facilitate movement to the community setting. Additionally, setting performance goals around ALOS and other quality measures with provider partners once the model has been privatized will become increasingly important to ensure that the right incentives are in place to transition patients from ALUs to community-based settings.

State Psychiatric Facility Recommendations

Our facility recommendations assume that the "Scenario C: Comprehensive" community services strategy is implemented and that significant investment and resources are committed to the community setting. This scenario projects that 1,160 beds will be needed in the system by 2021 – an additional 216 beds over the 944 existing licensed beds today. Cannon Design recommends a two-pronged strategy that will both provide this additional inpatient capacity need and address the aging infrastructure.

1. Increase Inpatient Capacity to Support Current and Projected Demand

As noted earlier, significant reductions in inpatient capacity have occurred in the state psychiatric hospitals though the system as a whole has been able to adapt to absorb some impact of previous hospital closures. However, the cost of that absorption is crowded conditions at many of the state psychiatric facilities, a census that frequently exceeds 100% occupancy levels, inefficient workflows due to overcrowding and a largely reactive model throughout the hospital system.

We believe that further capacity reduction will begin to have wide-spread consequences across the whole state continuum of mental health services unless systemic changes are made to the overall continuum. In today's system, the impact of having fewer psychiatric beds is likely to have a direct correlation to the number of individuals with severe mental illness who are homeless, boarded in emergency rooms and placed in jails and prisons. This capacity shortage will likely result in persistent bottlenecks at various points along the entire mental health continuum for the state psychiatric institutions, community services and private providers, operational strains on staff, and risks to patient safety and quality of care.

Based on an assessment of the geographic market and projected demand, Cannon Design recommends directing future inpatient investment to the Capital and Central regions where the current and future capacity need is the greatest. These two regions were identified as the areas of highest potential for additional inpatient capacity due to population trends, future patient origin density, access to transportation corridors and public transit and proximity to resources. In other geographic areas where future capacity needs are not as great or expected to grow more slowly, such as the Western or Eastern Shore regions, we recommend referring inpatient demand to the nearest point of care in the system.

An additional 216 beds over the existing 944 licensed beds is projected to be needed to meet inpatient capacity needs as outlined in the "Comprehensive Scenario C". Given the current economic reality facing

the State of Maryland, we propose that the need for additional bed capacity can be addressed in several ways:

- Reactivation of existing and/or unused beds in the state psychiatric system. Currently, 244 beds throughout the state hospital system have been identified as beds that can be converted back to active inpatient status, though additional study is recommended to assess their condition and determine the cost, code implications and time frame required to reactivate these beds.
- Private sector beds or Purchase of Care (POC) beds, in which the state reimburses a non-government acute care hospital to provide care for an uninsured individual with mental illness, can be utilized to meet existing latent demand for state psychiatric bed placement. However, beds in the private sector may not be appropriate or adequately configured to meet demands of some of the population segments in the state psychiatric hospitals, thus a careful evaluation of individuals who could be decanted to this setting is required.
- Development of new beds within the Central or Capital Regions. This strategy may be a viable strategy to pursue should pressures on the state budget ease or if additional funding is made available to the public mental health system in the future.

2. Upgrade or Replace Aging Beds

Due to the significantly aged and deteriorating infrastructure of some of the existing facilities, Cannon Design recommends upgrading and/or modernizing facilities to bridge the gap for best practices in clinical care, safety and security. Specifically, the greatest number of outdated beds is concentrated in the Central Region and should be a priority for upgrading or replacement in order to meet projected capacity demand in that region. This would provide the opportunity to implement best practices for state psychiatric care and evaluate the use of existing state assets for sale or other potential repurposing.

- Upgrade or replace the existing aging beds (with closed beds brought online) in the Central and Capital Region
- In these phases, it is assumed that bed count at the Thomas B. Finan Center and Eastern Shore remain the same and that inpatient demand in the Eastern and Western Regions can be adequately met with additional or new beds in the Central Region

This additional capacity should be implemented in several phases over a long-term investment horizon to allow capital dollars to be distributed over time. The phasing approach also allows time for the community services strategies to take hold and begin to materially decant some of the inpatient demands of the state hospitals into the community setting. Finally, a phased approach buffers the impact of capacity changes in the system to provide adequate time for operational planning, logistics and for transitioning patients and their families to the new care environments. Additional detail for this implementation is provided in Section 4.3.

Community Services Recommendations

Improve Visibility & Education for Community Services

One of the obstacles to providing and receiving community-based care is that many individuals with mental illness and their families may not even be aware of what services are available to them, where to find them or how to access those services. Improving the education and communications efforts surrounding these community locations would facilitate making these services more recognizable and accessible.

Implement the Comprehensive Community Services Investment Strategy
After careful consideration, it was recommend that the State of Maryland pursue "Scenario C: Comprehensive" as we believe it offers the right balance of viable, impactful community strategies which can also be implemented in a reasonable time and investment level. This scenario supports the Comprehensive custom forecast model for a projected capacity of 1,160 beds by 2021 at a 95% target occupancy level.

The following community strategies are considered part of this Comprehensive investment scenario:

- Peer-supported networks: evidenced-based model that complements the existing clinical care provided by licensed staff and recommends expanding the role of the peer support specialist, developing peer-run crisis facilities, improving integration of the community wellness centers and establishing community clubhouses.
- Telepsychiatry: there are currently limited telepsychiatry efforts across the state, however this strategy suggests a greatly expanding the reach of telepsychiatry and enhancing its application to other provider settings including emergency rooms, rural areas and other areas where access to psychiatric services may be limited.
- Alternative community beds: this strategy recommends the use of community residential beds to accommodate individuals who are now in the state hospitals awaiting competency, pre-trial evaluation and/or those admitted for minor violations of conditional release.
- Forensic monitoring: expand the existing forensic monitoring to facilitate earlier discharge and decrease readmissions to the state hospitals and jails. A comprehensive look at current community forensic after care programs is needed to move away from the current practice of holding patients in the state hospitals beyond what is deemed clinically necessary. A comprehensive plan for community aftercare would facilitate smoother and more timely transitions to the community and help stem the need for additional state hospital beds.
- Expansion of sequential intercepts 1-3 (law enforcement/ emergency services, post-arrest, and post-initial hearings) in the Sequential Intercept Model (described in Appendix E) emphasizes the necessary 'front end' social and clinical support services that keep individuals in their home communities, maximize independence and decrease the need for more intensive resources (hospital or jail). While many of these services exist in Maryland today, significant expansion is needed to provide equal access across the state and to broaden the breadth of services, including support for pretrial and programs, urgent care and/or drop off centers, mental health dockets and mental health courts.
- Restructure financial incentives to increase provider risk for outcomes. Given the importance of a more fluid continuum that uses services most appropriately, it is strongly recommended that the current public mental health payment system be evaluated and restructured to shift the risk for patient outcomes to the providers/CSA. Restructuring the payment system would allow the CSAs/ providers greater flexibility to fit the services to the patient rather than the patient to the service.

Partner with Local Businesses to Provide Employment Options For Individuals Leaving the Hospital
The Maryland State Department of Education, Division of Rehabilitation Services (DORS) and MHA coordinate efforts with selected, local businesses in each community to provide part-time or full-time job placement opportunities when individuals are ready to leave this hospital and are capable of managing employment. It is recommended that MHA enhance the current supported employment model; a patient's request for employment should be noted in the discharge/after care plan, followed by a referral to the appropriate entity for employment services. This would provide an immediate outlet for individuals with mental illness to service their community and get back on their feet, while also providing a structured, transitional environment as they return to the community.

Invest in Quality, Affordable and Supportive Housing
There are few viable housing options for individuals utilizing state hospitals for long-term care. The availability of adequate housing and/or housing alternatives has a direct correlation to state hospital utilization and for certain patient segments. A coordinated plan between the respective state agencies to address the housing challenges is a critical first step to facilitating the best use of resources. Housing investments should encompass support for individuals, providers, and developers. Support could include rent subsidies or vouchers, funding for the support mechanisms needed in supportive housing, and capital financing mechanisms for housing unit development.

Technology & Systems Infrastructure Recommendations

Implement Electronic Medical Records Across All State Hospitals and Community Providers
While electronic medical record adoption can have a high, initial capital cost, the long-term benefits could be substantial and improve care coordination across the state. There is a critical need for data-driven, needs planning that is transparent, consumer and family focused and outcomes-driven and that communicates the mental health needs of Maryland as a whole and the various counties. Benefits of this approach include:

- Providing a framework for consistent and continued measurement of outcomes.
- Providing more system transparency and establishing measurements for accountability using standardized outcome data
- Ability to produce and analyze clinical and operational data and communicate performance and findings to appropriate stakeholders.
- Supporting the establishment of policies across the system
- Better coordination with community services and other agencies

Expand Use of Telehealth and Teleassessment
As mentioned earlier, these systems may increase access to care, but also education and training throughout the state. The application of telehealth can range from hospital-to-hospital or hospital-to-community provider discussing a case to home monitoring for medication adherence to delivery of non-clinical services such as medical education, administration and research. The use of telehealth also goes hand-in-hand with electronic medical records, allowing physicians to document patient information electronically. As payers begin to reimburse for telemedicine encounters, the use of this technology is expected to grow exponentially.

RFID / Passive Badge System to Monitor Patient Activity and Provide Security Access
The use of RFID and intelligent badge systems have been used in many psychiatric settings and could be implemented to better monitor patient activity, track location and to facilitate security access to permitted or restricted areas for each patient. This approach could also preserve patient integrity and improve their perception of their care since it provides a passive way of managing their movement about the facility.

2. Current State Assessment

The Current State Assessment includes a review of state psychiatric hospitals' historical and current role in Maryland's public mental health continuum of care, setting the stage for understanding what might happen in the future. This section contains a summary of interview and tour findings gathered from site visits to all five state hospitals and interviews with key stakeholders.

Maryland Department of Health and Mental Hygiene (DHMH) and Mental Hygiene Administration (MHA)

Maryland's Department of Health and Mental Hygiene and Mental Hygiene Administration set the direction for mental health care in the State of Maryland.

MISSION
DHMH Office of Behavioral Health and Disabilities will develop an integrated process for planning, policy, and services to ensure a coordinated quality system of care is available to individuals with behavioral health conditions and developmental disabilities.

MHA will, through publicly funded services and supports, promote recovery, resiliency, and health for individuals who have emotional or psychiatric disorders.

VISION

- Coordinated, quality system of care
- Full range of services available
- Seamless linkages to services for the consumer delivered through a system of integrated care
- Recognition that co-occurring and co-morbid conditions are the norm
- Focus on treatment, behavioral health, support, recovery, and resilience
- Services developed in collaboration with culturally competent stakeholders in an environment that is culturally sensitive
- Improved health, wellness, and quality of life for consumers

VALUES

- Basic personal rights
- Responsive system
- Empowerment
- Family and community support
- Least restrictive setting
- Working collaboratively
- Effective management and accountability
- Local governance
- Staff resources
- Community education

Maryland State Psychiatric Hospitals

Five hospital centers – Springfield Hospital Center, Spring Grove Hospital Center, Clifton T. Perkins Hospital Center, Thomas B. Finan Center, and Eastern Shore Hospital Center – are owned and operated by the State of Maryland and are under the governance of the Mental Hygiene Administration of the Department of Health and Mental Hygiene. Current total state psychiatric bed capacity is 944 beds as of FY11.

Current conditions of the capital plants that make up the state psychiatric hospital system are mixed. While Eastern Shore Hospital Center and parts of Clifton T. Perkins Hospital Center are relatively new facilities, other facilities are considerably older and are located on campuses with multiple buildings, hindering efficiency. Two hospitals, Spring Grove Hospital Center and Springfield Hospital Center, were built in the 19th century. These two facilities primarily serve Central and Capital Maryland although, depending on bed availability, admissions may come from across the entire state.

2.1 Summary of Interview and Tour Findings[1]

Cannon Design interviewed over 50 stakeholders to understand their perceptions of the strengths and weaknesses of the current system of care, discover the most critical gaps in the care continuum and identify opportunities to fill those gaps and improve the efficiency and effectiveness of the mental health system in Maryland. The most consistent issues discussed are described below. It is important to note that these comments reflect the perceptions of the stakeholders interviewed and are not based on an independent analysis of the community mental health system, which was not part of the project scope.

State Psychiatric Facility Assessment

Aging and deteriorating physical plants create challenges in serving current patient mix efficiently.
Many of the buildings have infrastructure systems that are inefficient and deteriorating and have spaces that are difficult to reconfigure for best practices and diverse populations. Maryland's state psychiatric hospitals lack modern amenities that are present in most tertiary psychiatric facilities in other states and are consequently hampered in their ability to provide the best care and treatment possible. State psychiatric facilities vary in age, from 11 to over 200 years old. Most facilities have not undergone a significant upgrade since construction and are configured with a dormitory-style and pod layouts devoid of single rooms or private bathrooms. Multiple patients live side by side, with little opportunity for privacy. Spring Grove and Springfield campuses contain multiple buildings that were constructed to accommodate a much larger patient population. Eastern Shore and parts of Clifton T. Perkins are more modern, but these facilities will also require an overhaul in the next few decades.

Geographic placement is advantageous for some facilities, yet is a barrier for other facilities.
Springfield, Clifton T. Perkins, and Spring Grove are geographically well-placed near core urban hubs, facilitating recruitment of needed staff and transportation to and from their hospitals. However, Eastern Shore and Thomas B. Finan struggle to obtain necessary services, recruit staff and transport patients due to the higher cost of service delivery in rural areas and a sparser population.

Assessment by State Psychiatric Hospital

Springfield Hospital Center
Springfield Hospital Center is located on approximately 397 acres in Sykesville, Maryland. The hospital has a licensed capacity of 230 inpatient beds[2] and is accredited by the Joint Commission. Inpatient care is provided in three buildings – McKeldin, built in the1950s, Hitchman, built in the 1980s and Salomon, built in the1990s. Observed strengths of the campus include its partnership with other agencies and providers to utilize surplus acreage for training and business facilities. Use of the land include a partnership with the Maryland State Police to lease out unused buildings and property (i.e., Police Academy, high-sped training track), creation of a community cemetery for those donating their bodies to science and use of the Conference Center as a back-up command center for DHMH. In addition, support services are provided to Shoemaker House, a forty (40) bed alcohol and drug abuse rehabilitation program, operated by a for-profit organization; and the Secure Evaluation and Therapeutic Treatment Program (SETT), a twenty-two (22) bed, DDA-operated, forensic unit located on the grounds. Observed challenges included the average age of buildings on the campus (70 years old) and the number of vacant buildings on the campus. Inpatient units require additional group and activity spaces and staff work spaces on unit. Additionally, patient rooms are a mix of 2-bed and 4-bed room units, limiting patient privacy.

[1] For a comprehensive summary of interview findings, see Appendix A.
[2] Inpatient bed count at Springfield does not included Assisted Living Unit (ALU) beds. In accordance with the FY13 MHA budget, 78 beds will be removed from ALU units at Spring Grove and Springfield Hospitals by September 1, 2012, bringing the total operating ALU beds in the system down from 152 to 74. As of the time of the publication of this report, Spring Grove was already beginning the ALU closing process.

Spring Grove Hospital Center
Spring Grove Hospital Center is located on approximately 190 acres in Catonsville, Maryland. Spring Grove was originally founded in 1797 and is the second oldest continuously operating psychiatric hospital in the United States. The hospital moved to its current site in 1872; the oldest building still in use was built in the 1930s. The facility operates 351 inpatient beds[3] and a 24-bed domicile in a Secured Post Evaluation Forensic Unit and is accredited by Joint Commission and CMS-certified. Spring Grove provides acute, sub-acute, long term and residential care to adolescents, adult and geriatric individuals. Several units at Spring Grove provide specialized services, including an Adolescent Unit, Treatment Research Unit and a Medical/Psychiatric Unit designed to provide care to individuals with mental and medical illnesses. The campus also is home to the Maryland Psychiatric Research Center, which is part of the University of Maryland School of Medicine. Observed strengths of the campus include the range of services provided on the campus, including units dedicated to Adolescents and a Med/Psych services. Spring Grove has recently invested $22 million in the physical plant and decentralized some of its services. However, multiple outdated buildings on a large campus in which the newest building is 37 years old create challenges and inefficiencies in delivering care. Additionally, inpatient units have limited on-unit therapy space, counseling/interview areas, visiting spaces and staff work areas. Units require upgrades for patient and staff safety (safety glass, ligature risks) and no private showers/bathrooms are available for patients.

Clifton T. Perkins Hospital Center
Clifton T. Perkins Hospital Center (CTPHC) is a maximum-security psychiatric hospital operated in Jessup, Maryland. The Hospital is licensed as a special hospital - psychiatric by the Office of Health Care Quality and is accredited by the Joint Commission. The hospital opened in 1959 and was renovated in 1995 and 2010. CTPHC operates 247 inpatient beds and provides treatment to offenders who have been adjudicated Not Criminally Responsible (NCR) and/or Incompetent to Stand Trial (IST) and accepts, by transfer, felony inmates from correctional facilities who meet the criteria for involuntary commitment. Over 95% of individuals treated at CTPHC are court-ordered for evaluation and treatment and includes the most challenging and complex cases in the state. Services located in a single building aid in efficiency and staff response time. However, inpatient units require additional treatment spaces, therapy/group spaces, interview areas, quiet/comfort spaces and on-unit clinical offices. More beds are needed in the medium security unit and anticipated rise in geriatric patients will require units designed to accommodate these patients.

Eastern Shore Hospital Center
The newest of the state hospitals, Eastern Shore Hospital Center provides acute and long-term psychiatric services in Cambridge, Maryland. These services are provided in conjunction with, and in support of, those general hospitals on the Eastern Shore that provide psychiatric inpatient care, and with various nursing homes, clinics, and community rehabilitation programs dispersed throughout the Eastern Shore. Eastern Shore is a smoke-free facility and is accredited by Joint Commission and certified by the Centers for Medicare and Medicaid Services. Construction of the new replacement facility was completed in 2001 and inpatient care is provided in three psychiatric units for a total of 60 inpatient beds. Eastern Shore also houses a 16-bed assisted living unit at Manokin Assisted Living Program. The Treatment Mall contains a variety of patient amenities and therapy spaces and Eastern Shore has added comfort rooms to decrease use of restraint, and secure units and transparent barriers to nurse stations to address staff safety and security. However, inpatient units would benefit from the addition of private interview rooms on-unit with direct lines of sight from nurse stations; discreet staff entry onto unit into Nurse communication center; back-of-house team center space to allow for private staff clinical conversations and clinical planning on-unit; and on-unit group / therapy spaces for patients unable to attend therapy groups off-unit in the Treatment Mall. There is also a lack of dedicated admissions intake area for admissions only and no screening (metal detectors) or sally port (currently have locked doors).

[3] Inpatient bed count at Spring Grove does not include Assisted Living Unit (ALU) beds. In accordance with the FY13 MHA budget, 78 beds will be removed from ALU units at Spring Grove and Springfield Hospitals by September 1, 2012, bringing the total operating ALU beds for the system down from 152 to 74. As of the time of the publication of this report, Spring Grove was already beginning the ALU closing process.

Thomas B. Finan Center
The Thomas B. Finan Center, located in Cumberland, Maryland, operates 66 beds and 22 assisted living beds. Construction was complete in 1978 and the hospital opened in 1979. The Finan Center is accredited by Joint Commission. All units are connected in one building and patients have access to outdoor space. Units not utilized for inpatient care are currently leased to Alleghany Health and Sheppard Pratt. However, the facility is not well-equipped to handle a growing forensic patient population with no sally port and lack of on-unit therapy space, though the hospital is considering a secure link to adjacent units for this purpose. Inpatient units are designed around a pod concept of four pods of four rooms each, raising some issues with visibility, safety and occupancy/ placement when uneven numbers of male and female patients are present. There is no therapy mall space or private patient rooms, with a shared toilet/shower every four rooms.

State Psychiatric Hospital Clinical Operations and Performance

All facilities frequently operate over 100% occupancy.
With the recent closure of two facilities, Maryland's five remaining state hospitals are responsible for treating all individuals in need of state psychiatric hospital services. Overall average daily population exceeds total operating beds in the system, resulting in hospitals that are operating over capacity at most times in the year and have difficulty accommodating unplanned and/or unscheduled admissions. These high occupancy rates, in conjunction with inefficient layouts and lack of private rooms, create challenges in delivering the most effective and efficient care possible.

Numerous reasons cited for delays in discharge to the community.
Reasons include: services are not available depending on the nature of the crime (sex offense, arson) and history of assault; person with mental illness rejects treatment or placement recommendations; and specialized care, such as intensive 24-hour supervision or treatment of substance abuse disorders, is unavailable. State hospitals face barriers in treating individuals who refuse medication, and there is the perception that the clinical review panel process takes longer in state facilities than with commercial providers.

Patient and staff safety are at the forefront of acute care operations.
Recently, state hospitals have observed a trend of fewer seclusions and restraints as on the units than in previous years. Many of the hospitals have implemented safety and security design features in their inpatient units, which may be contributing to this trend.

Perception of impact related to closure of assisted living units (ALUs) differs between Department, state hospitals and community stakeholders.
Many MHA Directors see potential to ease impact of closure provided the right incentives are put into place and customized plans are crafted for each individual. All state hospitals and many community stakeholders cited necessity of keeping ALUs open to serve individuals they have not been able to place in the community and to alleviate inpatient capacity. Other community stakeholders noted that tangible impact of ALU closures can already be observed in the form of back-ups for competency evaluations and growing wait lists.

State Psychiatric Hospital Resources

Resources for state psychiatric hospitals will be dependent on gaining consensus on the role of the state in the mental health system. The state hospital system must be prepared for shifts in patient populations and future staffing shortages.

Staffing shortages lead to increased overtime.
Physician and staff recruitment and retention continue to be an issue. Hospital stakeholders quoted high staffing ratios (patients to physician) and expressed concern over inadequate staffing with many staff members working overtime shifts and high case loads for physicians. Low salaries also factor into difficulties in recruitment.

Changes in patient population will further stretch available resources thin.
Growth in geriatric psychiatric population was observed across all hospitals. Some hospitals cited change in behaviors of forensic patients, particularly those who have been incarcerated for long periods of time. Concern from many hospital interviewees were expressed over limited resources for growth and needed cross-training to adequately address needs of individuals with complex mental illness.

Widespread interest in expanding interagency training and sharing of best practices.
There is strong interest in ongoing learning and training de-escalation, crisis situations, safety for state hospital employees. Developmental Disabilities Administration (DDA) and MHA have an opportunity to share best practices in treatment for individuals with dual diagnosis (mental illness and substance abuse), as well as intellectual disability training for social workers. Cross-training with criminal justice system has occurred, but there is a need for more cross-training with public safety (parole officers specifically) as turnover is quick. Community efforts are underway to improve training and standards for police, corrections, probations related to individuals with mental illness.

State Psychiatric Hospital Alignment and Integration

Maryland has a history of strong investment in community resources.
Nearly three-quarters of Maryland's mental health budget is dedicated to community services. There is a large number of resources available and movement towards assertive community living / recovery model but also variation in availability. DHMH/MHA and the community oversee numerous partnerships and projects, using frequent meetings to further collaborate. DHMH and MHA largely have a good working relationship with most jurisdictions and core service agencies.

Mental Health Courts have high level of involvement in patient planning and discharge process.
High occupancy rates create challenges for state hospitals in meeting statutory requirement that at least a preliminary evaluation of competency and return to court take place within seven days, with Central region hospitals often scrambling to find placement for court-ordered individuals. Baltimore City courts are perceived to have more impact on the system than other jurisdictions with a number of active judges and courts highly involved in the patient planning and discharge process. The Judiciary is vested in ensuring that the needs of offenders with mental illness are treated so that they avoid return charges in the future and often requires a comprehensive discharge or conditional release plan. However, a dearth of inpatient and community placement and services for this population with both mental illness and criminal records creates throughput barriers between the two systems.

Community Services Assessment

Stakeholders perceived numerous strengths of the public mental health care system, particularly the emphasis on evidence based practices.
Nearly all interviewees indicated that the Maryland system of care provides a strong continuum of services across the state and consumers have access to many high quality programs and services. A few of the evidence based practices include:

- *Consumer-directed care*. This is a national movement and there is ample evidence to support the powerful role consumers can play in their own care.
    - Maryland is implementing the Wellness Recovery Action Plan (WRAP) process in the state hospitals as part of the transition to community plan. In some instances, peer support specialists are used to help with this and ensure the consumers are linked to resources, including peer support, when they leave the hospital.
    - The self-directed care pilot project in Washington County has been very successful at increasing the independence of consumers in the Core Service Agency (CSA). This pilot has been limited in scope to a select group of consumers, but there is interest in expanding the program within the area and into other regions of the state.

    - Consumer run agencies, such as On Our Own of Maryland, offer valuable support services, including housing, across the state. The peer run wellness centers offer a place for consumers to go to non-clinical, peer support.
- *Hospital and jail diversion* efforts aimed at keeping consumers in the community setting. Crisis intervention teams (CIT) are being trained in police departments and sheriff's offices statewide. Assertive Community Treatment (ACT) and mobile crisis teams are available throughout the state; and two psych urgent care centers operate in Baltimore.
- *Subsidized housing initiatives* include the Community Bonds program that provides capital for housing, a Baltimore pilot project that will buy down the cost of rent to 13% of Supplemental Security Income (from 30%), increasing access to these rental units, and a creative initiative in Montgomery County that enabled Springfield to shift some of its budget to the CSA for rent subsidies.
- *The Baltimore Capitation Project* is a different payment model that is unique in the state. The program provides financial incentives to keep people out of the state hospitals.
- *Integrating mental health with physical health.* While these are early in discussions, efforts are underway to develop approaches for integrating the physical and mental health of consumers. A couple of partnerships exist between mental health providers and local community health centers that offer learning opportunities and models for additional efforts. A task force has been established to look into this integration further.
- *A nationally recognized supported employment model* that brings together professionals in vocational rehabilitation and mental health treatment programs provides a proactive approach to support for those individuals with mental illness who want to work.

Yet several 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 available housing for individuals with mental illness - particularly for those who have been incarcerated. The high cost of real estate in Maryland is the primary reason for this critical weakness, as consumers are unable to find decent yet affordable housing. Management of housing for people with mental illness crosses agencies (MHA and DOH) and requires interagency collaboration to support it. Despite good working relationships and several successful collaborations, the agencies each have separate departmental agendas and the priorities of one are not always consistent with the priorities of the other. Shifts in funding can occur as a result, leaving one provider short of resources to implement the needed services.

- Rural communities in Maryland struggle to provide the same mix of services available in the urban areas because they lack the population base. The cost of duplicating all the services of the urban areas into the rural communities is prohibitive, yet these consumers have the same needs.

- There is insufficient integration among agencies at the state level, and the integration efforts made are generally informal. Individuals with chronic mental illness cross multiple agency boundaries; strong integration is needed to bring about a coordinated continuum of care.
    - The mental health and justice systems have very separate mandates, making coordination difficult, though both sides expend a great deal of effort to improve. The objectives and mandates for these two systems may clash when it comes to determining the best course of action for the individual consumer. This can result in forensic patients staying longer than clinically necessary for either competency evaluations or Not Guilty by Reason of Insanity (NGRI) placement. Transition to the community has additional requirements under the justice department's responsibility for public safety and the MHA's responsibility for clinically appropriate least restrictive setting.

- There are insufficient services to support the mentally ill in their homes and provide readily accessible emergency and support services when crises arise.

  - Crisis services are somewhat inconsistent across the state and there is no state model/approach for providing crisis services. Much of this is left to the overseeing CSA that must deal with resource availability and rural vs. urban issues. While ACT services are available in the urban areas, they are not in rural communities and consumers must rely on mobile crisis teams (less structured crisis interventions).
  - Only two psychiatric urgent care services are available and those are located in Baltimore at the two academic medical centers. These urgent care services provide an option between a hospital emergency room and local jail, serving as a diversion to a more resource intensive service.

- Maryland has had difficulty bringing successful pilot initiatives 'live' across the state, creating inconsistencies in access to needed services and delays in implementing successful programs.

- There is a gap in service that often occurs between the time an individual is discharged from the state hospital to the time they can receive follow up care in the local community mental health center. Medications often run out during this period. The time lag can cause the individual to decompensate to the point where readmission to the hospital is needed, contributing to the "revolving door" concern noted by many (frequent readmissions by certain patient segments).

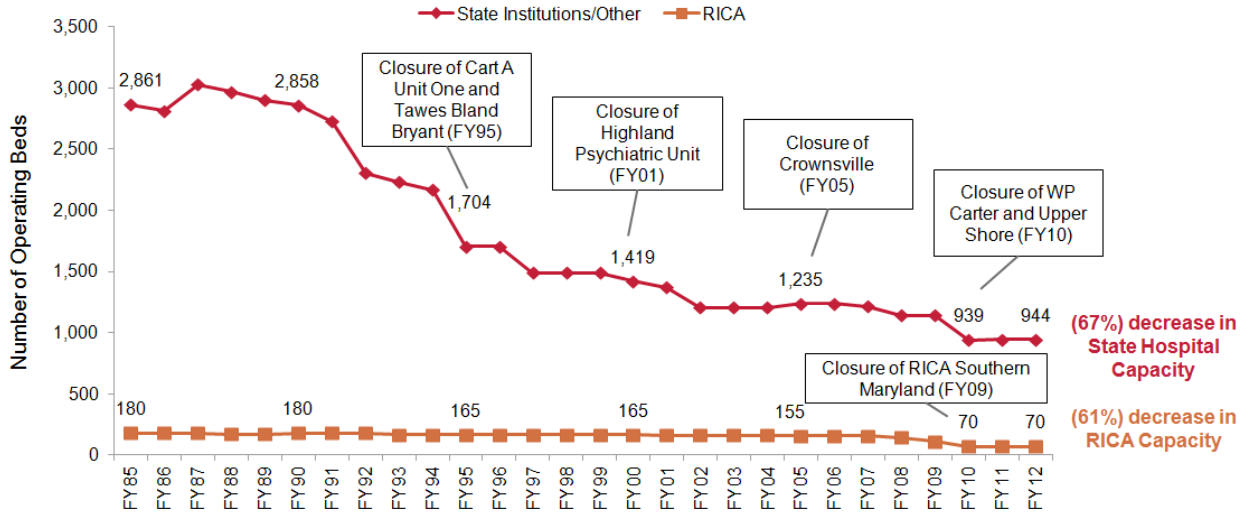
Concern was expressed that the current fee-for-service system limits the flexibility needed to fit services to the consumer; as a result, providers try to fit consumers to the service, which is not an optimal system of care. As such, the system appears focused more on the providers and not the consumers. An example is the separated budgeting/funding for the state hospitals and the community providers. This dual track funding has created a perception among some that the state hospitals are not part of the continuum of care. A consumer-driven approach would combine these two funding pools to allow greater flexibility in allocating resources. Additionally, some forensically-involved individuals could benefit from services not traditionally funded through the fee-for-service system, including transportation, child care, dental services and social support.

2.2 Inpatient Assessment

The inpatient assessment evaluated historical usage of inpatient services at the state psychiatric hospitals to provide context for the study and to set the stage for estimating future demand. A list of data sources used for this assessment can be found in Appendix I.

Widespread economic downturn and Maryland state deficits have led to cuts in funding for public health services in the past few years. State psychiatric hospital capacity declined by 67% since FY85 due to several state hospital closures. The most recent closures in FY10 of Walter P. Carter Hospital and Upper Shore Community Mental Health Center resulted in a shrinking of hospital bed capacity to the 944 state psychiatric inpatient beds currently available. In the same period, Regional Institute for Children and Adolescents (RICA) beds declined by 61%, down to 70 beds from 180.

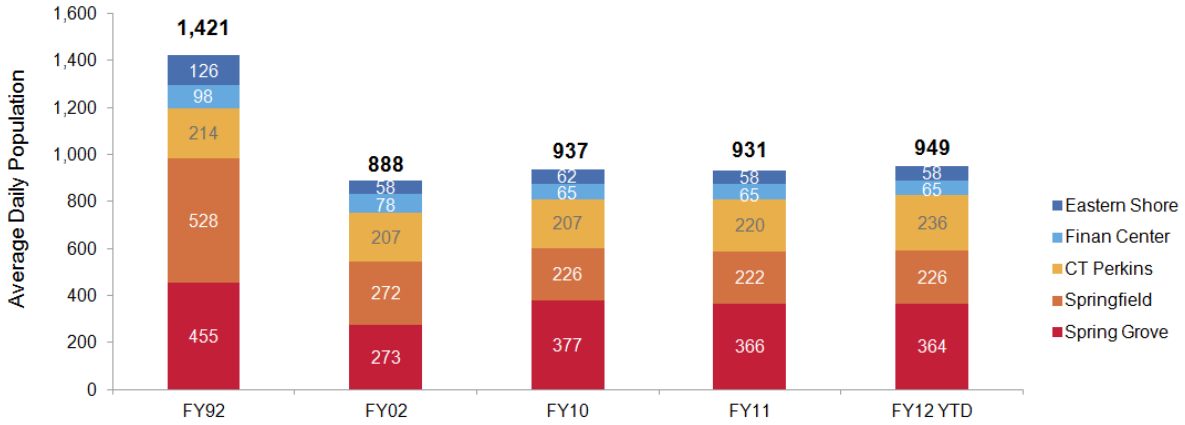
Total Maryland State Psychiatric Hospital Capacity, FY85 – FY12



Note: Data includes RICAs but does not include DOMs/ALUs. FY2012 current through December 31, 2011. Operated capacity based on number of beds in buildings now in use. It should be noted that the closure of Crownsville was done with minimum impact on bed capacity, additional capacity being added through the utilization of previously closed buildings at Springfield and Spring Grove. However, since that closure, as noted above, the system has shrunk in terms of bed capacity and number of facilities with the closure of Walter P. Carter and the Upper Shore Community Mental Health Center.

Correspondingly, admissions to the state psychiatric hospitals decreased by 65% due to several years of downsizing and MHA policies moving civilly-admitted individuals to the community setting. In recent years, after years of significant change, average daily population (ADP) has stabilized. Down from its high at over 1,400 in 1992, ADP now hovers near 950 in the most recent fiscal year. Spring Grove's ADP has decreased slightly from 377 to 364, while ADP at Clifton T. Perkins has risen from 207 to 236 in the last three fiscal years.

State Psychiatric Hospital Average Daily Population, FY92 – FY12 YTD

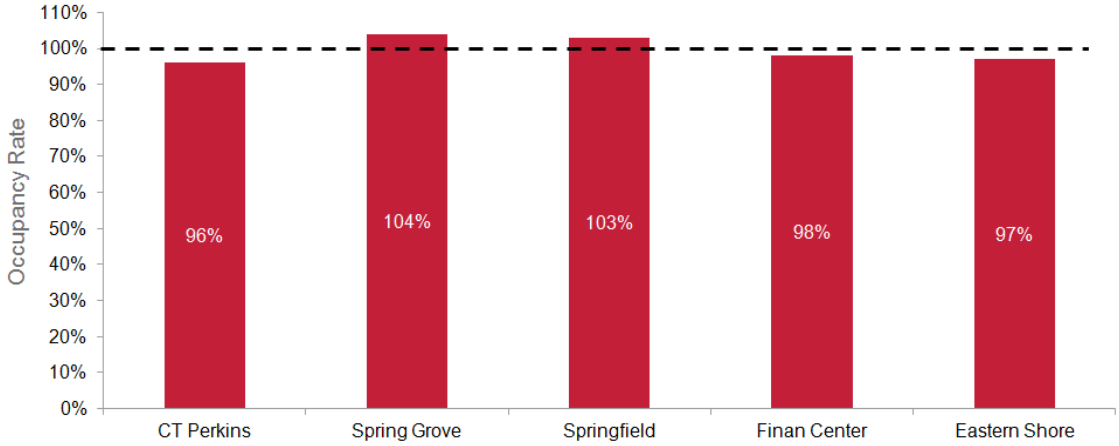


Note: Excludes admissions to closed state institutions (Carter, Crownsville, Upper Shore, Highland, Walter P. Carter), Assisted Living Units and Regional Institutions for Children and Adolescents.

In the most recent fiscal year, all state hospitals were operating at over 95% occupancy rate, with Spring Grove and Springfield Hospitals exceeding 100% capacity, well over the recommended target occupancy rate to manage census fluctuations or changes in patient acuity. It should be noted that occupancy rates across the system may differ due to distinct patient characteristics and rural versus urban environments. In previous decades, bed capacity exceeded ADP. In FY92, ADP was 1,421 but bed capacity in that year was 1,577. In FY02, ADP was 888 and bed capacity was 1,916. Today, hospitals are operating ADP

directly to available bed capacity. Given that total operating beds in the state psychiatric hospitals are 944, compared to 949 ADP, on aggregate the state system is operating over capacity.

Maryland State Psychiatric Hospital Occupancy Rates, FY12 YTD

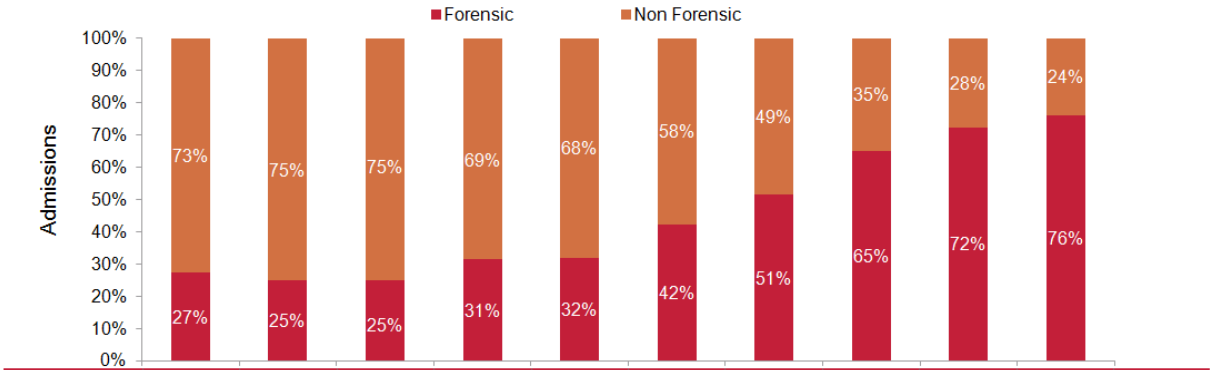


	CT Perkins	Spring Grove	Springfield	Finan Center	Eastern Shore
Avg. Daily Population	236	364	226	65	58
Operating Beds	247	351	220*	66	60

**Springfield records 230 operating IP beds and 40 ALU beds; DHMH HMIS report dated July 1, 2011 to January 31, 2012 reports 220 operating IP beds and 50 ALU beds.*
Note: While most units at Clifton T. Perkins are at or over capacity, the hospital's women's unit is regularly under capacity and thus the total occupancy rate is below 100%. In addition, the adolescent unit at Spring Grove typically only fills 50-60% of beds, which translates to higher occupancy rates in other units in the hospital.
Graph excludes Assisted Living Units and Regional Institutions for Children and Adolescents.

Another notable change includes the legal status under which increasing numbers of individuals with mental illness are now hospitalized. As overall average daily population shrunk over the past decade, the mix of individuals committed by the criminal courts, or forensically-involved individuals, continued to increase as a percentage of total, while the mix of individuals civilly-admitted declined. The graph below shows a reversal of the mix of civil and forensic admissions over the last decade, as total admissions to state hospitals declined by 65% from over 3,000 in FY02 to just over 1,100 in FY11. Civilly-admitted patients, historically at 73% of admissions in FY02, dropped to 24% of admissions in FY11 as they were increasingly pulled out of state psychiatric hospitals into other settings. Today, forensically-involved individuals represent the clear majority of admissions at 76%. It should be noted that this reversal in trend does not necessarily indicate a growing forensic population; instead, several stakeholders noted instead that the legal classification of patients has changed over time such that the same patient who, in the past, may have been considered a civil admission now may enter the door as a forensic admission.

All Admissions by Forensic Status, FY02-FY11

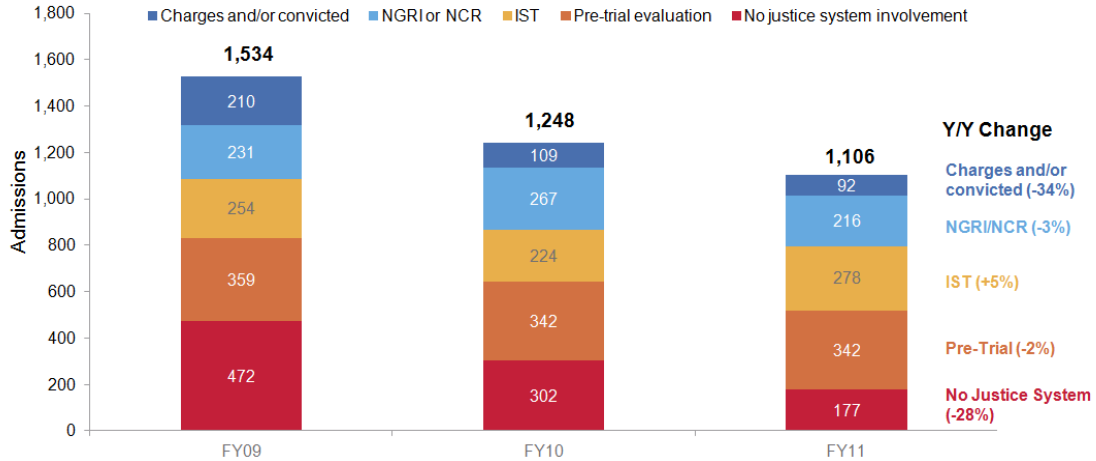


	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	10-Yr %
Non-Forensic	2,306	2,240	2,348	1,841	1,783	1,217	883	602	409	266	(89%)
Forensic	862	738	777	840	838	890	935	928	839	840	(3%)
Total	**3,168**	**2,978**	**3,125**	**2,681**	**2,621**	**2,107**	**1,818**	**1,534**	**1,248**	**1,106**	**(65%)**

Note: Excludes admissions for Regional Institutions for Children and Adolescents.

As forensically-involved individuals made up a greater percentage of admissions, admissions of individuals found to be Incompetent to Stand Trial (IST) grew as well, 5% year over year. However, individuals found Not Guilty by Reason of Insanity and Not Criminally Responsible (NGRI/NCR) declined by 3% year over year since FY09. Reflecting policies to move civilly-admitted individuals to the community setting, admissions by individuals with no justice system involvement decreased by 28% year over year, from 472 in FY09 to 177 in FY11.

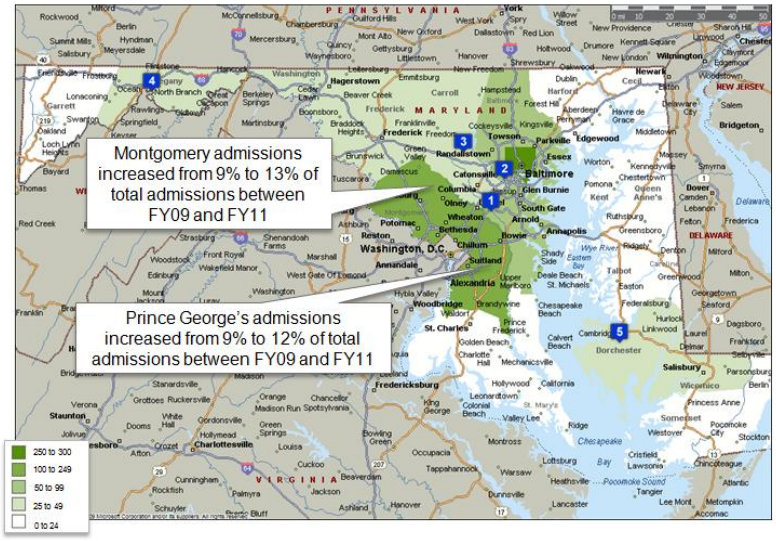
All Admissions by Legal Classification, FY09-FY11



Note: Excludes admissions for Regional Institutions for Children and Adolescents. Total includes #N/A and Inactive code. Charges and/or convicted includes under arrest and certified from an ER, certified from a detention center, certified from a correction center or involuntary admit from a local jail.

Half of all individuals served by state hospitals came from urban areas, namely Baltimore City and the Washington D.C. suburbs of Montgomery and Prince George's County. Notably, Montgomery County admissions increased from 9% to 13% of total admissions between FY09 and FY11, while Prince George's County also increased its admissions mix from 9% to 12% in the same period. Nearly one quarter of admissions originated in Baltimore City; the city had one of the highest use rates in the state at 42 admissions per 100,000 residents. Rural Dorchester and Allegany Counties had the highest use rates at 77 and 47, respectively.

Patient Origin, Total Admissions to State Psychiatric Hospitals by County, FY11



County	FY11 Admissions	% Mix	Use Rate (per 100K)*
Baltimore City	269	24%	41.9
Montgomery	144	13%	14.4
Prince George's	138	12%	16.3
Baltimore County	95	9%	11.9
Anne Arundel	92	8%	17.3
Frederick	40	4%	17.1
Howard	37	3%	12.8
Allegany	34	3%	46.5
Washington	32	3%	21.5
Wicomico	29	3%	30.1
Dorchester	25	2%	76.7
Carroll	25	2%	14.4
Other	146	14%	11.9
Grand Total	**1,106**	**100%**	**19.0****

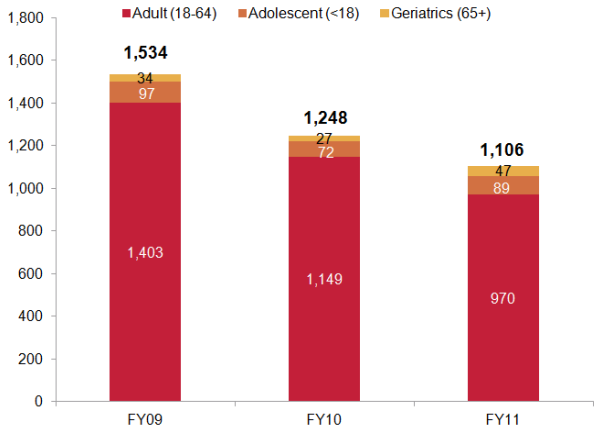
1. Clifton T. Perkins Hospital Center
2. Spring Grove Hospital Center
3. Springfield Hospital Center
4. Thomas B. Finan Hospital Center
5. Eastern Shore Hospital Center

**Use rate = FY11 admissions per 100,000 population in each county. **Calculated using total Maryland state population.*

Trends in the data also pointed to a changing patient population. State psychiatric hospitals are now admitting more individuals with severe mental illnesses. From FY09 to FY11, admissions from individuals with severe mental illnesses or severe emotional disturbances (SMI/SED)[4] increased from 79% to 84% of total admissions. In FY11, 82% of adolescent admissions, 84% of adult admissions and 70% of geriatric admissions were classified as individuals with a SMI or SED. In addition, state hospitals admitted a greater mix of geriatric individuals. In FY09 and FY10, only 2% of admissions were geriatric, while the geriatric mix increased to 4% in FY11. Despite the decline in total admissions between FY10 and FY11, the number of geriatric individuals admitted to state psychiatric hospitals increased from 27 to 47.

Though the percentage of geriatric individuals was small, this population represented users with the highest utilization of healthcare resources within the context of declining social and environmental supports and physical health. Life stressors such as retirement, death of a spouse, isolation, and reduced income all may play a role in increasing the prevalence of mental illness in older adults. Additionally, older adults are more likely to develop chronic medical conditions, further complicating care for those with mental illness.

Admissions to State Psychiatric Hospitals by Age Group, FY09 – FY11



Age Group	2009 % Mix	2010 % Mix	2011 % Mix
Adult	91%	92%	88%
Adolescent	6%	6%	8%
Geriatrics	**2%**	**2%**	**4%**

Note: Adolescent is ages <18, Adult is ages 18-64, Geriatrics is defined as ages 65+. Excludes admissions for Regional Institutions for Children and Adolescents.

[4] SED flag for patients less than 18 years of age; SMI flag for patients 18 years or older.

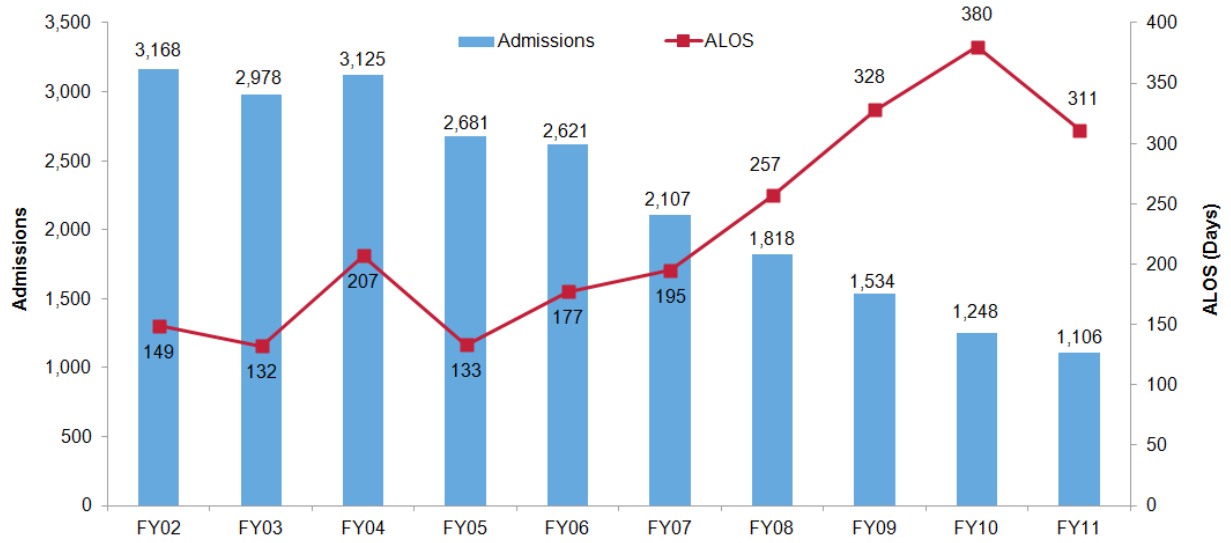
Sixty four percent of individuals admitted to a state hospital also had a medical diagnosis, with the highest rate at Springfield with 80% of admissions and the lowest rate at Clifton T. Perkins with 38% of admissions. From a look at the top ten medical diagnoses, most were related to chronic diseases including hypertension, diabetes, asthma, and obesity.

Top Ten Medical Diagnosis, Total Admissions, FY2011[5]

Rank	Medical Diagnosis	FY11 Admissions
1	Hypertension Not Otherwise Specified	74
2	Diabetes Uncomplicated Type II	53
3	Asthma Without Status Asthmmaticus	34
4	Hyperlipidemia Not Elsewhere Specified/Not Otherwise Specified	28
5	Obesity	24
6	Esophageal Reflux	22
7	Person Feigning Illness	15
8	Personal History of Injury	13
9	Hypothyroidism Not Otherwise Specified	10
10	Dermatitus due to Food Ingestion	9

These changes in the patient mix contributed to increases in ALOS. While total admissions declined over the last few years, ALOS in aggregate steadily increased, reaching a high of 380 days in FY10 and back down to 311 days in FY11. This overall increase of 109% or 9% year over year in ALOS was a reflection of the increase in mix of forensically-involved individuals with severe mental illness and the movement of civil admissions with shorter stays into community settings.

Admissions and ALOS for Total State Psychiatric Hospitals, FY02-FY11



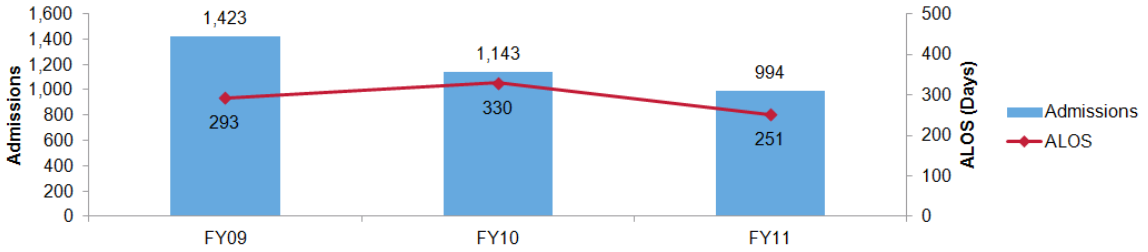
Note: ALOS = average length of stay. ALOS is calculated based on true admission and discharge date. Excludes admissions for Regional Institutions for Children and Adolescents.

State psychiatric hospitals have varying ALOS as they admit and treat different types of patients and offer distinct types of programming. For instance, Clifton T. Perkins had the longest ALOS as it is a maximum-security hospital and houses many individuals with a history of violence and thus with limited discharge

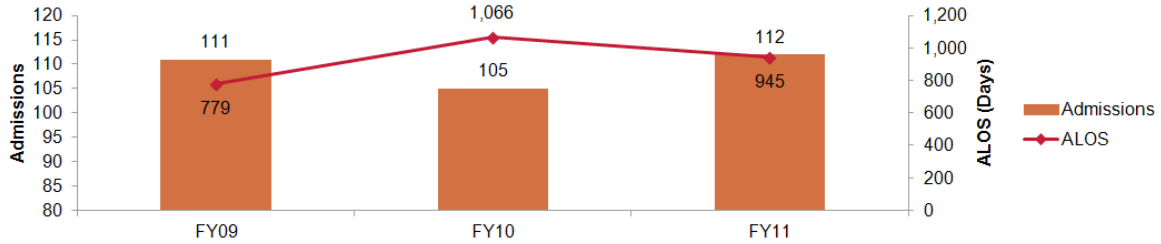
[5] Medical diagnoses pertaining to psychological disorders have been excluded from list (e.g., Psychological Stress). Admissions with medical diagnosis calculated as patients with at least one medical diagnosis.

options. When Clifton T. Perkins was excluded, overall length of stay hovered from eight to 11 months in recent years, while admissions dropped from 1,423 to 994. Clifton T. Perkins' ALOS ranged from roughly two to three years in the same period, with fairly flat admissions.

Admissions & ALOS for Total State Psychiatric Hospitals, (excluding CT Perkins), FY09 – FY11



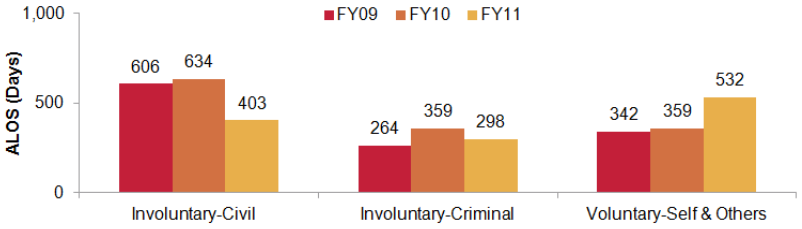
Admissions & ALOS for Clifton T. Perkins Hospital Center, FY09 – FY11



Note: ALOS = average length of stay. ALOS is calculated based on true admission and discharge date. Excludes admissions for Regional Institutions for Children and Adolescents.

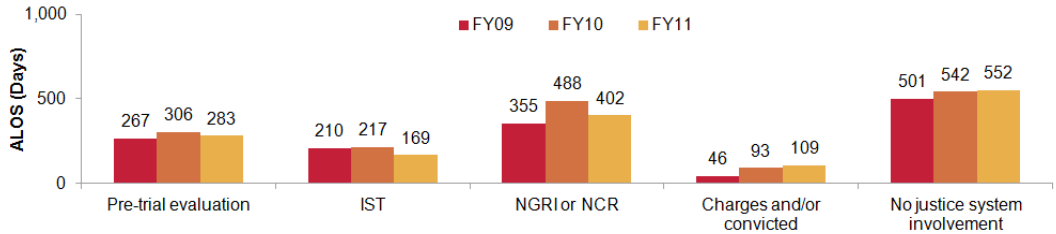
As the civil admissions declined as a percentage of state psychiatric hospital admissions, individuals who are were civilly admitted to state psychiatric hospitals tended to have longer ALOS (466 days) than forensically-involved individuals (260 days). Stakeholders noted this trend and attributed it to the movement of those civilly-committed individuals who might be successfully treated in the community setting out of the hospital, leaving behind the most complex and mentally ill cases.

Average Length of Stay by Admission Status, FY09-FY11



LOS	FY09	FY10	FY11
Forensic	238	326	260
Non-Forensic	451	464	466
Overall	**328**	**380**	**311**

Average Length of Stay by Legal Classification, FY09-FY11



Note: ALOS = average length of stay. ALOS is calculated based on true admission and discharge date. Involuntary-Juvenile Justice (Spring Grove) excluded from ALOS analysis. Excludes Guilty but Mentally Ill legal classification due to low volumes. Charges and/or convicted includes under arrest and certified from an ER, certified from a detention center, certified from a correction center or involuntary admit from a local jail.

2.3 Community Overview

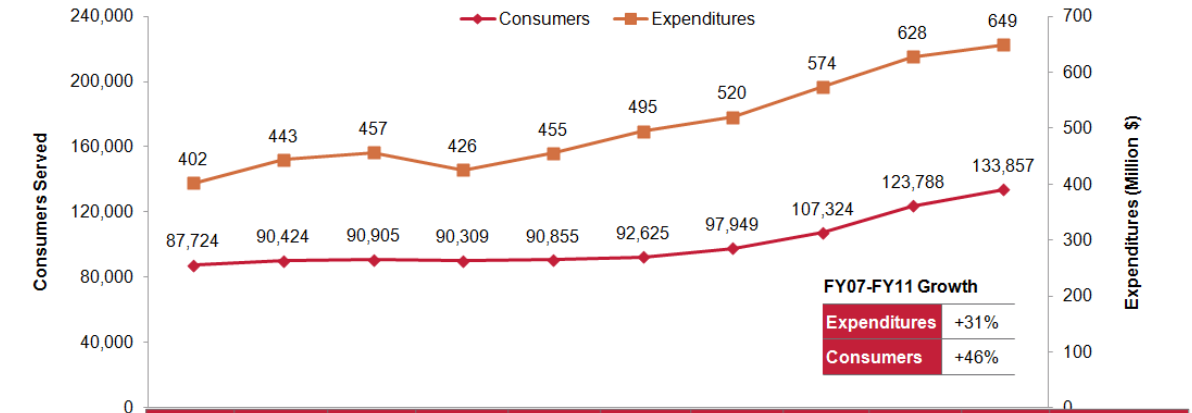
Community services for persons with mental illness are delivered through community-based organizations. Individuals from state facilities are served with a wide range of residential, vocational, and other support services, including family and individual supports and community supported living arrangements that enable an individual to stay in his or her own home, day programs, supported employment, resource coordination/case management, behavioral support services, transportation, residential alternative living units and residential group homes.

The principal current payment system is the Fee Payment System (FPS). The FPS has two components that address client need and service administration overhead, respectively. The FPS includes regional rate adjustments that increase the individual component portion of the formula for certain high-cost areas. The provider component of FPS pays for administrative, general, capital and transportation costs.

MHA uses an administrative services organization (ASO) to help administer the system. The ASO refers individuals to service providers, preauthorizes non-emergency care, conducts utilization review, conducts some evaluation activities, including consumer and provider surveys, collects data, and processes billing claims and payments. In addition to services administered by ASO, MHA provides grant funds for other services. The Core Service Agencies (CSAs) continue to have the responsibility for planning and monitoring services at a local level. In the analyses below, it should be noted that the community data represents individuals utilizing services funded through the public fee-for-service system and excludes Medicare and services funded through grand-funded contracts.

While admissions to state psychiatric hospitals declined over the last decade, the number of people with mental illness being treated in the community (i.e., outside of the state hospital system) through the public mental health system steadily increased. This increase in consumers served and, subsequently, expenditures can be explained by an expansion of Medicaid coverage, since more individuals are eligible to acquire services from Maryland's public mental health system under Medicaid. However, expenditures per consumer declined between FY09 and FY11, suggesting an increase in lower-cost services utilization.

Maryland Public Mental Health System Expenditures and Consumers, FY02-FY11



	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY07-FY11 Growth
Expenditures/ Consumer	$4,587	$4,904	$5,022	$4,715	$5,012	$5,346	$5,310	$5,350	$5,072	$4,850	(9%)

Between FY10 and FY11, community claims increased by 11%, with the largest mix of claims from outpatient and residential rehabilitation (61% and 25%, respectively).

State psychiatric hospitals play an important role in the mental continuum of care, but after discharge, community providers are essential in offering support to individuals with mental illness and preventing/ responding to mental health episodes. Capable and experienced community providers can reduce

readmissions rates to state psychiatric hospitals and can also prevent admissions through crisis and diversion services.

The number of community claims from the subset of adults admitted to a state psychiatric hospital increased by 20% in the last year (excluding outpatient claims). These claims made up 11% of total adult community claims in FY11, up from 10% in FY10. Average claims per adult admitted to a state hospital increased by 15% from 55 per patient to 63, with the most claims per patient found in the residential rehabilitation service category.

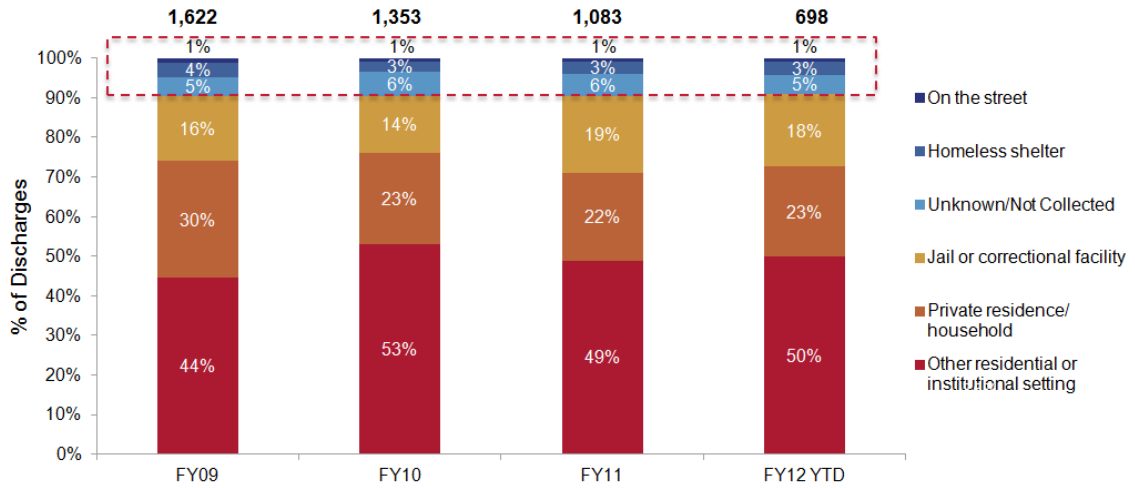
Community Claims from Adults Admitted to State Psychiatric Hospitals by Category, FY10 – FY11

Service Category	FY10	FY11	FY10	FY11	FY10	FY11	FY10	FY11
	Adult State Hospital Claims		% of Total Adult Community Claims		State Hospital Patients		Average Claims/Patient	
Residential Rehabilitation	91,439	112,776	12%	13%	507	554	180	204
Inpatient	9,552	8,852	8%	7%	324	293	29	30
Psychiatric Rehabilitation	4,667	5,924	5%	5%	616	657	8	9
Crisis	1,350	1,807	7%	9%	103	120	13	15
Mobile Treatment	1,028	1,110	6%	5%	146	165	7	7
Supportive Employment	548	767	2%	3%	108	130	5	6
Case Management	488	497	2%	1%	44	60	11	8
Baltimore Group (Capitation)	313	345	8%	8%	40	38	8	9
Partial Hospitalization	724	212	3%	3%	55	26	13	8
Residential Treatment	72	129	9%	13%	11	16	7	8
Purchase of Care	248	117	6%	3%	42	23	6	5
Emergency Petition	41	41	3%	3%	21	24	2	2
Respite Care	37	1	11%	1%	5	1	7	1
PRTF	0	0	0%	0%	0	0	0	n/a
Grand Total	**110,507**	**132,578**	**10%**	**11%**	**2,022***	**2,107***	**55**	**63**
	+20% Increase		**+1% Change**		**+4% Increase**		**+15% Increase**	

**Not sum of unique state patients using community services as patients may overlap service categories. Note: Analysis includes FY10 and FY11 community claims from individuals who were admitted to Maryland state psychiatric hospitals between FY09 and FY12 YTD. Excludes Outpatient service category and claims submitted for individuals aged <18. Claims can be submitted up to 12 months from the service date and therefore data regarding FY11 are partially incomplete as of June 2012.*

Despite this increase in community services utilization, up to 10% of adults discharged from a state hospital end up on the street, in a homeless shelter, or in an unknown living situation. Without the appropriate support system in place, such as lodging and/or family, these individuals are more likely to experience mental health episodes and require additional inpatient treatment.

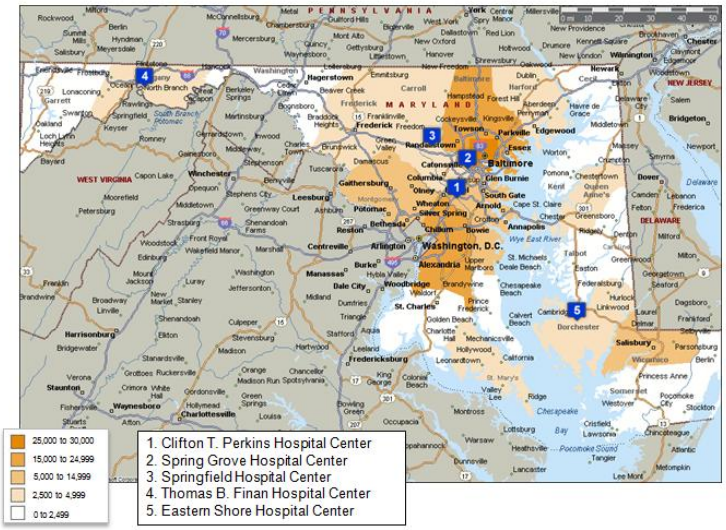
Living Situation After State Psychiatric Hospital Discharge, FY09 – FY12 YTD



Note: Excludes discharges from Regional Institutions for Children and Adolescents. FY2012 YTD = July 2011 though Feb 2012.

Baltimore City produced the most community claims from adults admitted to a state hospital, comprising 20% of the total. Prince George's and Baltimore County followed with 13% and 12%, respectively. Dorchester County had the highest use rate, at 12,716 claims per 100,000 people. Notably, Montgomery County was only the fifth highest origin for community claims from individuals admitted to state hospitals, while it was the second in rank with state hospital admissions origin.

County Origin for Community Patients Admitted to State Psychiatric Hospitals, FY11

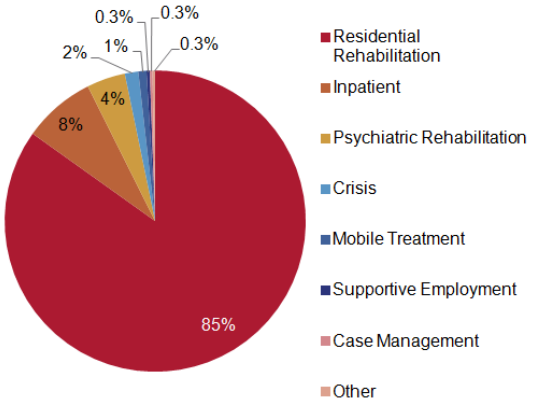


County	# Claims	% Mix	Use Rate (per 100K)*
BALTIMORE CITY	27,046	20%	4,211
PRINCE GEORGES	16,603	13%	1,966
BALTIMORE COUNTY	15,756	12%	1,968
ANNE ARUNDEL	13,555	10%	2,549
MONTGOMERY	13,288	10%	1,330
WICOMICO	6,651	5%	6,908
FREDERICK	4,938	4%	2,116
HARFORD	4,432	3%	1,793
DORCHESTER	4,145	3%	12,716
HOWARD	3,662	3%	1,263
ALLEGANY	3,120	2%	4,271
CARROLL	2,966	2%	1,713
ST. MARY	2,663	2%	2,507
QUEEN ANNE	2,621	2%	5,308
WASHINGTON	2,344	2%	1,575
CECIL	2,228	2%	2,155
OTHER	6,560	5%	1,511
Grand Total	**132,578**	**100%**	**2,284****

**Use rate = FY11 claims per 100,000 population in each county. **Calculated using total Maryland state population. Note: Analysis includes FY11 community claims from individuals who were admitted to Maryland state psychiatric hospitals between FY09 and FY12 YTD. Excludes Outpatient service category and claims submitted for individuals aged <18. Claims can be submitted up to 12 months from the service date and therefore data regarding FY11 are incomplete now.*

Readmissions to psychiatric inpatient institutions after state hospital discharge have long been recognized as one of the core measures of performance in the mental health system. Narrowing the subset of community claims to those from individuals who have been *readmitted* to a state psychiatric hospital, it was observed that these individuals utilize a very similar service mix as all state hospital patients. However, comparing the number of claims per consumer from readmissions to all hospital admissions, readmitted patients submitted fewer claims per person (56 compared to 63).

Community Services Utilized by State Hospital Readmissions, FY11



Community Claims and Patients for Patients Readmitted to State Hospital, FY11

Service Category	# Claims	# Patients	Avg Claims/ Readmit Pt	Average Claims/ All Hosp Pts
Residential Rehabilitation	28,924	172	168	204
Inpatient	2,642	85	31	30
Psychiatric Rehabilitation	1,414	193	7	9
Crisis	492	32	15	15
Mobile Treatment	297	54	6	7
Supportive Employment	118	29	4	6
Case Management	99	17	6	8
Baltimore Group (Capitation)	45	7	6	9
Purchase of Care	18	6	3	5
Partial Hospitalization	17	2	9	8
Emergency Petition	11	6	2	2
Residential Treatment	8	1	8	8
Grand Total	**34,085**	**604**	**56**	**63**

Note: Readmissions calculated as state psychiatric readmission between FY09-FY12 YTD. Analysis includes FY11 community claims from individuals who were admitted to Maryland state psychiatric hospitals between FY09 and FY12 YTD. Excludes Outpatient service category and claims submitted for individuals aged <18. Claims can be submitted up to 12 months from the service date and therefore data regarding FY11 are incomplete now.

Assisted living beds are considered step-down placements for patients in state psychiatric facilities who have responded to treatment but are not yet ready for community placement and/or for whom community placement may be difficult to find. As MHA plans to close several assisted living units (ALUs) in FY13, ALU length of stay has decreased significantly over last two years. According to the FY13 MHA budget, 78 beds will be removed from ALU units at Spring Grove and Springfield Hospitals effective September 1, 2012, which would bring the total operating ALU beds down from 152 to 74 (51% reduction)[6]. Though there are plans to privatize the ALU model and reinvest in community funding for psychiatric rehabilitation services, Cannon Design believes that the closure of ALU beds will likely result in increased lengths of stay for those individuals who otherwise would have been identified for ALU placement.

Assisted Living Unit Operating Beds, FY12YTD – FY13 Budgeted

Assisted Living Unit	Current (FY12)	FY13 Budget*	Delta
Eastern Shore	16	16	0
Finan Center	22	22	0
Spring Grove	74	26	(48)
Springfield	40	10	(30)
Total	**152**	**74**	**(78)**

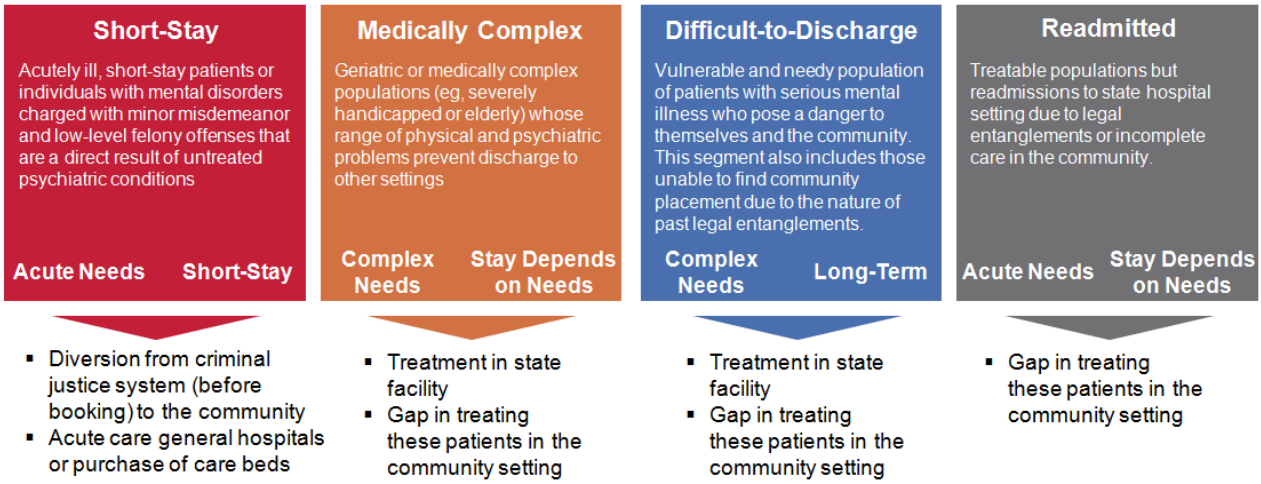
**MHA proposes to close capacity effective Sept 1, 2012. Note: ALU = assisted living units; ALOS = average length of stay. ALOS is calculated based on true admission and discharge date. FY12 YTD = July 2011 through Feb 2012. Springfield ALU includes Ancillary unit (excludes Sykesville SETT).*

[6] DHMH/ MHA "Analysis of the FY 2013 Maryland Executive Budget, 2012"

3. Future Projections

3.1 Segmentation of Individuals Served by State Psychiatric Institutions

In order to promote access to services and to remove barriers to care, mental health services across the care continuum need to be customized to specific populations and their needs. Segmentation of specific cohorts can help in tailoring these strategies. Cannon Design applied a segmentation model to further understand the characteristics of the individuals served by state psychiatric hospitals.



Note: Other patient category excluded from graphic above. Other comprised of patients who do not definitively fit in above categories.

Current patient mix was divided into specific cohorts by length of stay, acuity, legal status and severity of mental illness.

Short-Stay patients are described as individuals who are acutely ill or who have been changed with lower-level felony offenses that are a direct result of untreated psychiatric conditions. If a patient had a LOS of 30 days or less, considered a short-stay in a state psychiatric hospital, then they were included in this segment. The use of cross-system mapping or sequential intercept efforts at intercept 1 and 2 (law enforcement, crisis intervention; deferral from criminal justice system before charges incurred) would have the most impact on this segment. However, once charges/incarceration occurs; the patient would not be accepted by a private provider unless patient is released on PR bond (still possible at intercept 3).

Medically Complex patients are described as geriatric, medically complex, severely handicapped or having a range of physical and psychiatric issues preventing discharge to other settings. Patients of ages 65 or older, as well as those identified with co-occurring medical or substance abuse conditions were included in this segment.

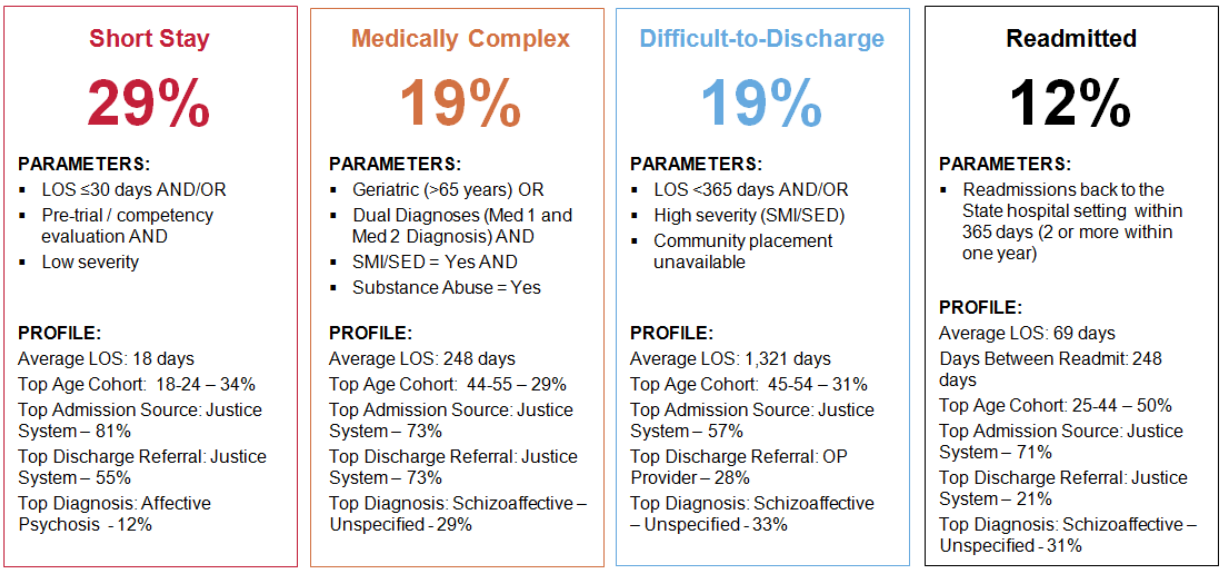
Difficult-to-Discharge patients represent a diverse, long-term psychiatric population, including civil and forensic patients, geriatric/medically complex patients, treatment resistant patients and individuals court-ordered for pre-trial evaluations. These are individuals who presented one or more barriers to discharge, including combinations of complex medical conditions, history of violence or other problematic behaviors (sexual or others) that complicate placement in the community and/or present risks to themselves or others.

Those with severe psychological issues who have not been discharged after 365 days[7], as well as those with severe legal entanglements were included in this segment. In particular, individuals with legal barriers- history of violence, sex offence or arson– may have a manageable mental illness but past legal/behavioral issues exclude them from consideration for many of the community housing/treatment options. This patient segment poses significant challenges for state psychiatric hospitals in part due to the lack of community placement options and/or prevailing public attitudes to individuals with a criminal history making community placement difficult. Many people will experience long lengths of stay and be absorbed into the long-stay population. Closing ALUs will likely increase this specific cohort length of stay in the inpatient setting unless an alternative community placement option is provided.

To determine frequent admissions to the state psychiatric hospitals or the **Readmitted** segment, Cannon Design analyzed repeat visits over the past three fiscal years and identified those who had been readmitted back to the state hospital setting two or more times within a one-year period. On average, days in between readmissions were 248 days. Readmitted individuals oftentimes are not charged with committing new offenses, but rather for violating conditions of probation or parole, such as failing to report to treatment or to maintain stable housing or employment. Non-compliance with medication is also another common reason for readmissions.

There is an **Other** segment that is not described above, comprised of individuals who overlap multiple categories above and/or do not definitively fit in one category. Another group not categorically broken out in the four segments below, but representing an important segment nonetheless is the **Wait List** segment. Through a separate data collection process with the Admissions Directors from the state psychiatric hospitals, waiting list admissions from detention centers, general hospital inpatient units, free-standing psychiatric hospitals, and special needs referrals were captured and incorporated into the study.

Short Stay and Readmissions segments make up 41% of discharges and describe a population for whom community strategies may have greater impact. Segmentation shows that even with expansion of community services and other alternatives, there will be certain subsets of the state hospital population that will continue to need hospital-level care that is not feasible to provide in community settings. Across all hospitals, Short Stay individuals make up the greatest percentage of discharges.



Notes: LOS = length of stay; Overlapping patient IDs removed among patient segments. Other patient category making up 21% of total mix excluded from graphic above. Other comprised of patients who do not definitively fit in above categories.

[7] Note: A number of states base this time limit on research that shows that most people will be restored within six months to a year, and continued treatment and detention to restore competency beyond this period may be unnecessary. Grant H. Morris and J. Reid Meloy, "Out of Mind? Out of Sight: The Uncivil Commitment of Permanently Incompetent Criminal Defendants," U.C. Davis Law Review 1, no. 27, 1993.

3.2 Forecast Methodology

Forecasting uses certain known quantities, mainly historical data, and entails projecting future data on population, forensically involved and civilly-admitted individuals, state hospital admissions and expected clinical trends. Some of these factors are sensitive to changes in laws, policies and practices; others are the result of broader forces at play (e.g., population and demographics).

Methodology

The purpose of demand forecasting in the planning process is to ensure that any future facilities will be planned, developed and sized appropriately. Cannon Design's forecasting methodology sets a ten-year time horizon and utilizes both historical hospital utilization data and market population projections to forecast volumes that may be indicative of future demand for state psychiatric hospital care. The first step in the Cannon Design forecasting process is to create a *baseline* volume forecast. The baseline forecast is a "demand" forecast, meaning it is based on a model of market demand for services, not taking into account supply side factors or changes in institutional strategy. The baseline forecast also assumes status quo – that is, current policies, strategies and investment will hold constant into the future. The second step is to then *customize* the baseline forecast with an overlay of planned investments, recruitment strategies, market outreach and consideration of future care delivery models.

The baseline forecast for state psychiatric hospital growth was created utilizing historical Maryland HMIS data from Fiscal Years 2009 to 2012YTD, as well as population forecasts and other variables directly related to state psychiatric hospital populations. Cannon Design then worked directly with key stakeholders and DHMH and MHA leadership to understand future goals and planned activities, which were used to drive the customization of the forecast. The custom forecast builds upon the baseline forecast and incorporates a series of calculations intended to reflect the interconnected nature of a variety of factors, including demographic shifts, closures resulting from budget cuts, and impact to length of stay.

Forecast Impact Factors

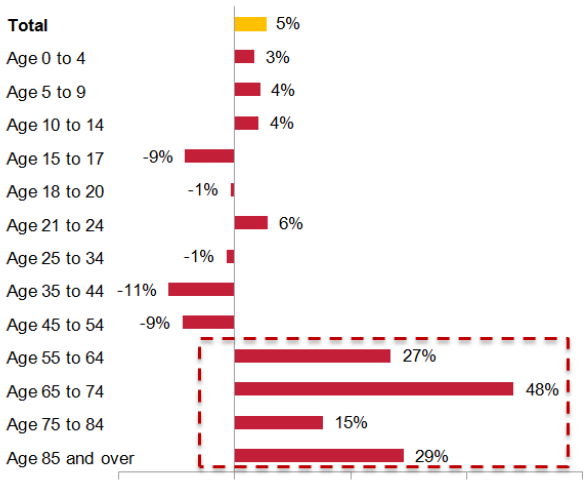
A number of key impact factors ranging from market trends to care delivery models were utilized in the creation of the forecast for state psychiatric hospital admissions over the next decade. These factors include both statewide and national trends:

Maryland Population Trends
According to the 2010 U.S. Census, the population of Maryland increased 9% from the 2000 Census to 5,773,552 residents, faster than most Eastern states, and buoyed by a growing minority population. The growth was greatest in counties near the Baltimore and Washington metropolitan areas and in the southern and coastal regions. One exception to state's overall growth was Baltimore City, where population growth declined 5% since the 2000 Census. When the recession hit in the second part of the decade, the number of people moving to the Eastern Shore and western Maryland declined.

Overall population growth between 2011 and 2021 is expected to increase by 5%.[8] Mirroring national trends, people ages 65 and older will make up 16% of the total population by 2021, up from the current 13%. These age cohorts will comprise the fastest growing age groups, driven by the ageing of the Baby Boomer generation and net out-migration of younger (age cohorts 15 to 20) and middle-age cohorts (age cohorts 25 to 54). Conversely, these adolescent and middle-aged cohorts will see a decline in growth over the next ten years. The aging of the population will have widespread implications for health care services and mental health services and public programs such as Social Security and Medicare in Maryland. Aging cohorts are expected to consume healthcare resources at a higher rate, given the corresponding rise in chronic diseases and age-related mental illnesses.

[8] Note: 2021 Population Projection was calculated from a straight-line analysis of Nielsen Claritas 2016 population estimate by ZIP Code. Source: Nielson Claritas & U.S. Census Bureau.

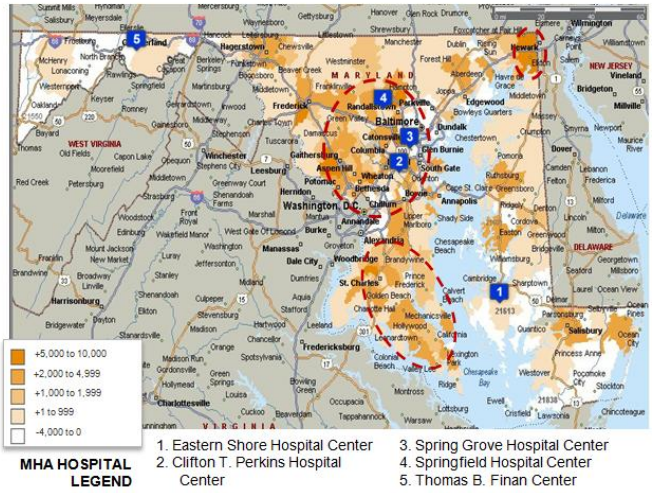
Maryland Projected Population Change by Age Cohort, 2011 – 2021



MARYLAND	2011	% Mix	2021	% Mix
Total	**5,805,777**	**100%**	**6,114,417**	**100%**
Age 0 to 4	386,338	7%	399,804	7%
Age 5 to 9	377,547	7%	394,417	6%
Age 10 to 14	371,258	6%	386,730	6%
Age 15 to 17	249,211	4%	228,003	4%
Age 18 to 20	237,143	4%	235,493	4%
Age 21 to 24	305,769	5%	323,457	5%
Age 25 to 34	763,044	13%	752,286	13%
Age 34 to 44	791,049	14%	700,855	11%
Age 45 to 54	889,064	15%	808,976	13%
Age 55 to 64	699,185	12%	887,535	15%
Age 65 to 74	412,490	7%	611,004	10%
Age 75 to 84	230,099	4%	264,947	4%
Age 85 and over	93,580	2%	120,910	2%

Over the next ten years, population growth will be concentrated in the Capital and Central regions but the fastest growth will be seen in Southern Maryland and Eastern Shore. Specifically, population growth will be concentrated along Baltimore-Washington Corridor, Gaithersburg, Cumberland, Hagerstown and Elkton. One exception to state's overall growth is Baltimore, where population growth declined 5% since the 2000 Census and will continue to decline slightly over the next ten years.

Maryland Projected Population Change by ZIP Code, 2011 – 2021



REGIONS	2011	2021	% Growth
Capital	2,056,876	2,166,882	5%
Central	2,694,027	2,811,993	4%
Southern	344,996	378,853	10%
Eastern	454,856	489,326	8%
Western	255,022	267,363	5%

Trends of Populations Related to State Psychiatric Hospitals

Criminal court case trends. Changes in the general population can also affect the size and make-up of the prison population. Research shows that criminal offenses peak in late adolescence and then decline throughout adulthood. As baby boomers age and the general population becomes older, crime rates may be expected to decrease as well. Additionally, recent initiatives implemented by the state such as the CitiStat program has demonstrated tangible reduction in crime rates. This is reflected in criminal court cases filed across the state, which declined by 9%, and trials held, which declined by 2%, from FY05 to FY11.[9]

Maryland prison capacity. Individuals who are incarcerated in corrections facilities (i.e., the Corrections population) are an important subset of the users of adult inpatient state psychiatric services in Maryland.

[9] Uniform Crime Reporting Program; Maryland Statistical Analysis Center;

Given the future population trends over the next ten years, it can be inferred that as the general population ages, criminal offending may be expected to decline as a result[10]. However, in 2010, for the first time in nearly 40 years, the overall number of state prisoners in the U.S. declined except for a handful of states, including Maryland. [11] The average daily incarcerated population in FY 2010 totaled 34,494 (prisons and jails) -- approximately one out of every 167 Maryland residents. In 2006, 70% of the prison population was serving sentences greater than 5 years. Consequently, despite a steady decline in crime rates in the last decade (Maryland's crime rate went down substantially during this time – there was a 6% drop in violent crime and a 5.1% decrease in property crime), the incarcerated population has remained high. Maryland released approximately 13,900 offenders back to their communities, and the 2010 rate of return to state prison within three years of release was 47.8%.[12] Additionally, parole violators accounted for 27% of state admissions in FY 2010.

Prevalence of mental illness in prisons and jails. Over the past few decades, attention has been focused on the increasing rates of arrests and incarceration among individuals with mental illness. Recent studies suggest that the rate of mental illness in these populations has risen over time. More importantly, increases in general incarceration rates mean that more people with mental illnesses are incarcerated. There are now more than three times more seriously mentally ill persons in jails and prisons than in hospitals nationwide. The general statistic quoted in national studies suggests that at least 16% of inmates in jails and prisons have a serious mental illness.[1314] In 1983 a similar study reported that the percentage was 6.4%, indicating that, in less than three decades, the percentage of seriously mentally ill prisoners has almost tripled. These findings are consistent with studies reporting that 40% of individuals with serious mental illnesses have been in jail or prison at some time in their lives.[15]

Health Care Reform

The Affordable Care Act (ACA) will have an impact on the reimbursement landscape as a whole and on the individuals served by the public health care system; in addition, Maryland will be one of 11 states participating in the Medicaid Emergency Psychiatric Demonstration project to receive a federal match for adult consumers receiving inpatient psychiatric care at certain non-state psychiatric hospitals.[16] Though reimbursement is expected to increase for mental health services, future reimbursement will increasingly be based on quality outcomes and efficiency of care rather than on the basis of volumes of services. In addition, likely stagnation in the supply of Medicare revenue dollars will challenge mental health providers to accommodate greater volumes all the while increasing performance outcomes and efficiency.

- Anticipated arrival of health reform will precipitate a range of changes in state health care with movement towards aligning incentives with prevention and overall wellness. Beginning in January 2014, Medicaid expansion that is included in the ACA is expected to add 175,000 individuals to Maryland Medicaid and Medicaid managed care organizations.[17]

- Newly created Maryland Health Insurance Exchange will provide coverage for an estimated 187,000 Maryland adults in the subsidized individual market for persons between 133% and 400% of the federal poverty level.

[10] Collins, Raymond E, "Onset and Desistance in Criminal Careers: Neurobiology and the Age-Crime Relationship," Journal of Offender Rehabilitation, Vol. 39 (3), 2004, pg 1-19, 2004; http://www.haworthpress.com/web/JOR
[11] U.S. Department of Justice, Bureau of Justice Statistics, 2011. http://www.justicepolicy.org/news/3292
[12] DPSCS, 2010 RISC Report, Baltimore, MD, DPSCS Office of Policy, Planning, Regulations and Statistics, 2011.
[13] W. Lawrence Fitch, JD, "State Hospitals and the Future of Forensic Services," NASMHPD Fifth National Summit of State Hospital Superintendents, May 7, 2007.
[14] Note: Serious mental illness was defined as including schizophrenia, schizophrenia spectrum disorder, schizoaffective disorder, bipolar disorder, brief psychotic disorder, delusional disorder, and psychotic disorder not otherwise specified. A total of 16.6% of the prisoners met criteria for one of these diagnoses in the previous month, with the rate among women (31%) being much higher than that among men (14.5%).
[15] Torrey, Dr. E. Fuller, Kennard, Aaron D., Eslinger, Don, Lamb, Dr. Richard, Pavle, James; "More Mentally Ill Persons Are in Jails and Prisons Than Hospitals: A Survey of the States," Treatment Advocacy Center and National Sheriff's Association, May 10, 2010.
[16] "CMS Announces Emergency Psychiatric Demonstration Project," Psychiatric News Alert, March 14, 2012; accessed at http://alert.psychiatricnews.org/2012/03/cms-announces-emergency-psychiatric.html on June 12, 2012.
[17] Miligan, Charles, "Medicaid and Health Reform: Implementation Progress and Issues," House Health and Government Operations Committee, DHMH, Office of Health Care Financing, January 25, 2012.

Future Trends for Mental Illness

New methods of care delivery and treatment innovations will lead to improvements in mental health management, efficiency and productivity. However, an increase in elderly people with mental illness will require enhanced efforts to effectively manage this vulnerable population.

Earlier Detection of Mental Illness

Growing awareness of mental illness and declining social stigma may contribute to earlier detection of disease. Identifying individuals with mental illness before major symptoms develop enables treatment of the disease as manageable and chronic and thus helps prevent incarceration and hospitalization.

Need Will Continue to Outstrip Supply

While psychiatric health providers have shifted from the acute care to the community setting, the need for these services continues to outstrip supply. Nationally, research shows that nearly a quarter of adults have a diagnosable behavioral health condition, and two-thirds of Medicaid patients with a top five illness (asthma, chronic obstructive pulmonary disease/congestive heart failure, coronary artery disease, diabetes and hypertension) also have behavioral health co-morbidities.[18]

Innovation in Online Interventions

Greater prevalence of online therapy and interventions and the use of video chat and videoconferencing technologies are predicted to enhance the therapeutic relationship. As mobile technology becomes more ingrained in the everyday routine, the use of texting, mobile communications, and smart phone applications may extend the intervention paradigm into novel environments.[19]

Increase in Elderly People with Mental Illness

Additionally, the proportion of older adults and incidence of chronic medical conditions point to growth of behavioral and mental disorders over the next decade and beyond. People ages 65 and older will make up 20% of the U.S. population by 2030, increasing from the current 13%.[20] Compounding this population boom are significant upswings in older adults with mental illnesses visiting the ED and acute care settings as family members and caretakers exhaust other care options. Longer lengths of stay for these patients and increases in admissions will translate to patient day growth and tighter psychiatric hospital capacity.

3.3 Community Strategies

Community-based services and providers are a critical component in the mental health services continuum of care and there is a high degree of interconnectedness between the availability of community services and the demand for inpatient care. Significant commitment to and investment in community resources is necessary if continued growth in the state hospital population is to be stemmed or minimized. A comprehensive and coordinated mix of community services and settings keeps consumers healthy, decreasing their dependence on more resource intensive sites of care such as the state hospitals and, in many cases, interactions with the justice system. Maryland has many strong programs and has instituted a number of best practices in community-based care, but the breadth and depth of these programs, as well as access across the state, remains a challenge unless there is significant investment in the community.

[18] The Advisory Board Company, "Revamp your approach to behavioral health care" 12 Oct 2011.
[19] Azy Barak & John M. Grohol (2011): Current and Future Trends in Internet Supported Mental Health Interventions, Journal of Technology in Human Services, 29:3, 155-196.
[20] The Advisory Board Company, "Et Cetera: Psychiatrists: Expect a Spike in Elderly Residents with Mental Illness," 19 May 2011.

Recommended Community Strategies

The following community strategy recommendations focus on both expanding the breadth and depth of current initiatives – to capitalize on the strengths of within the current system – and developing new initiatives. There are four underlying assumptions:

1. It will be less costly and more efficient to improve on, and get better use of, the current system of care than to add to it.
2. Earlier intercepts/interventions can reduce the need for subsequent, higher resource services, including state hospital beds.
3. Strategies build upon and/or complement existing initiatives and are not mutually exclusive
4. The patient segments most likely to be affected by expanding the network of community based services and providers are the Short Stay admissions and the Readmitted. As the breadth and depth of community programs grow, however, an effect on other patient segments will likely be seen .

Five recommended community provider strategies, and one recommended system change are described below:

#1. Peer Supported Networks

Peer support is an evidence-based model that complements the clinical care provided by licensed staff. Peer support services are now used in hospital emergency rooms and community clubhouses. States such as Georgia have established Medicaid reimbursement for peer support specialists. CMS also recognizes that the experiences of peer support providers can be an important component in a state's delivery of effective treatment. Maryland has not fully leveraged the peer support services available within the state, nor has the peer support specialist been recognized as a key member of the care team. Peer support opportunities include:

- Expand the role of the peer support specialist in hospital transition to the community. Each individual should have completed Wellness Recovery Action Plan (WRAP) with a peer support specialist before transition to the community; the PSS should also be responsible for connecting, them to community based peer and clinical support. This is done inconsistently now and should be a standard of practice at each state hospital facility
- Develop peer run crisis respite facilities to decrease the pressure on the medically driven acute crisis services. This ‘sub-acute’ level of crisis is voluntary and peer run, but can and should be an important part of the continuum.
- Improve integration of the community wellness centers with the state systems and care plans. Establishing the peer networks as a pivotal, yet independent, part of the system of care can be a significant in promoting the recovery model within Maryland.
- Establish community clubhouses to provide social support and facilitate partnerships with local businesses, housing, and other community services. Clubhouses have been very effective at linking consumers with communities, and can enhance access to housing and even supported employment. At a minimum, they provide one more support mechanism for consumers at a cost significantly less than a traditional clinical setting.

Some of the key steps in implementing this strategy include:

- Engage consumer and provider groups 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, the priority services to target initial efforts, the training requirements needed for peer support specialists, and how they might be classified and paid by the state.

- Evaluate other services and models used in other states to supplement what already exists in Maryland. There are multiple peer operated/owned models outside Maryland, and a key step in pursuing this recommendation is to review these and identify any that may be a good addition to the continuum in Maryland.
- Develop payment mechanisms for peer run settings and/or peer support specialists. The state should evaluate opportunities to provide ongoing financial support to incorporate peer support into the daily operation of the state's continuum of care.

#2. Intercept 1-3 interventions

Expansion of Sequential Intercepts 1-3 (law enforcement/ emergency services, post-arrest, and post-initial hearings) in the Sequential Intercept Model (described in Appendix E) emphasizes the necessary 'front end' social and clinical support services that keep individuals in their home communities, maximize independence and decrease the need for more intensive resources (hospital or jail). While many of these services exist in Maryland today, significant expansion is needed to provide equal access across the state, and additional services should be considered to broaden the breadth of services provided:

- Expand support for pretrial and jail diversion programs across the state. Continue support for crisis intervention teams throughout police and sheriff's departments. These diversion programs are the first defense in preventing individuals from escalating into higher levels of intervention/ treatment. Ensuring access to medications, connecting consumers with needed resources in their areas, and education of other professionals who may come in contact with the mentally ill on how to respond (expanding CIT concept to other areas) are also key diversion strategies.
- Develop additional urgent care centers and/or drop off centers. These could be developed in partnership with area acute care hospitals that often see the acute mentally ill in their emergency departments and do not always have the resources to provide the expertise needed for care.
- Enhance and expand the use of mental health dockets and mental health courts. The state has had mixed results with these initiatives, but these evidence-based practices have been shown to reduce recidivism and hospitalizations in other states.
    - The purpose of mental health courts is to promote the early identification of defendants with severe mental health/developmental disabilities to promote coordination and cooperation among law enforcement, jails, community treatment providers, attorneys and the courts for defendants during the legal process and achieve outcomes that both protect society and support the mental health care needs of the individual.

Implementing any of these strategies will require considerable collaboration with the Department of Justice and local law enforcement agencies, in addition to local acute care hospitals. There is a significant need for a consolidated and integrated plan (completed by DOJ and MHA) to develop these early intercept models. The ultimate success of these efforts could be hindered without this integrated plan. The combined plan can address how the agencies will implement their respective mandates while integrating their services to provide the best opportunities for the mentally ill consumers, and can also recommend changing funding streams to better achieve the objectives of the diversion efforts.

An evaluation of the mental health courts in Maryland is warranted to see if they are meeting the intended purpose and identify barriers to success. An evaluation could also identify areas where these operations deviate from best practices and foster plans for improvement.

Representatives from the MHA noted that a state crisis plan is in place, but community representatives interviewed were not aware of it, or stated that it did not meet their needs. A comprehensive state plan for crisis services should identify the number and type of settings available by geographic area. The plan should outline how crisis services integrate with health and justice/law enforcement services, and when each is called upon as well as the role that they play.

#3. Expand/enhance forensic monitoring and/or peer case management

Forensic monitoring is currently being done through the Community Forensic Aftercare Program, and the results show a much lower readmission/recidivism rate than for individuals released directly into the community, a finding consistent with other states. This success supports expanding monitoring efforts to facilitate earlier discharge and decrease readmissions to the state hospitals. Strong linkages with peer support networks as well as supported housing may further boost the program's success.

Enhanced forensic monitoring should be part of the combined MHA/DOJ plan mentioned in Strategy #2 above. The forensic population crosses both the Justice and Mental Health Systems, so initiatives that target this population should be collaborative and jointly funded to provide both agencies incentives to participate fully. Evaluating the cost/benefit of the current program may help support expansion. The cost/ benefit should include the implications on the justice system resources as well as mental health.

As the forensic monitoring program is expanded, peer support specialists may be used as monitors, or to assist monitors with large case loads. The peer specialists can target select people, particularly those at greater risk for readmission/recidivism and/or those with more complex challenges.

#4. Develop statewide telepsychiatry access.

There have been recent initiatives to use telepsychiatry in the eastern and western regions of the state, but in general telepsychiatry has been underdeveloped in Maryland. Telepsychiatry is seeing substantial growth across the country and its applications are moving beyond community mental health settings to emergency rooms and other provider settings where access to psychiatric services may be limited.

The shortage of psychiatrists is not likely to be corrected soon, and telepsychiatry efforts can provide more efficient and effective use of this limited resource. This is particularly important to the more rural areas in the state. In addition to expanding access to clinical services, establishing teleconferencing capabilities can also enhance professional training, increase recruitment/retention of professional staff in rural communications, and facilitate communication across settings. In addition, telepsychiatry can be utilized as a forum for acute care providers to glean state hospital best practices in caring for the most complex and vulnerable populations in the state.

A telepsychiatry network should build on the current efforts in designated counties and can be comprised of multiple networks and providers, coordinated across the state. Lessons learned from other telepsychiatry initiatives around the country should be evaluated and incorporated into the state plan. Other implementation steps include:

- Identify the current professional capacity in Maryland that might participate in the telepsychiatry network. This may include private psychiatrists, psychiatrists at the state hospitals and/or within the public mental health system, and academic psychiatrists/residents.
- Evaluate existing telemedicine efforts within acute care hospitals to identify partnership opportunities that could minimize state implementation costs and facilitate integration with other specialties.
- Identify priority communities, settings, and patients to target for telepsychiatry services. The priorities may be determined based on current access to services, risk for hospitalization, and/or geographic isolation.

#5. Increase community after care services and residential bed levels.

Transitioning from the state hospitals (DDA or MHA) is a challenge that too often results in a readmission back to the inpatient facility. Readmissions can be prevented if sufficient investment is made in after care services designed to facilitate and ease this transition. Currently, not enough of these programs exist to

manage the growing Maryland population. After care services may include case management, supportive housing and employment, and use of patient driven wellness action recovery plans (WRAPs).

Maryland currently recognizes two levels of community residential beds, intensive and general, and the beds are generally used as a transition from the state hospitals. Community residential beds could also be used to house individuals now in the state hospitals awaiting competency, pre-trial evaluation, and/or those admitted for minor violations of conditional release. The state hospitals are the only option for these individuals now, but this is not necessarily the most clinically appropriate, least restrictive or cost effective setting. Providers would need to increase staffing levels and security to accommodate this population, but the potential benefits (consumer remaining in the community, less institutional setting, recovery orientation) could outweigh any additional costs. Using community residential beds for this level of care would also replace state hospital beds with a less costly alternative.

Assisted living units (ALUs) also provide another level of residential care that could be very useful in transitioning to independence. The current ALUs that are scheduled to close provide an important step in the transition back to the community. Providing these in the community could help decrease hospital length of stay as well as readmission rates.

Modifying the community residential bed levels will require a group of clinicians, consumers and justice representatives to determine the levels of care and supervision needed, and admission/discharge criteria. Pathways for transitioning between and among settings, including the state hospitals, would be critical to facilitate placement in the right place at the right time. Finally, payment systems would have to be changed to accommodate the new levels of care.

#6. Restructure financial incentives to increase provider risk for outcomes.

Patients need to be moved through the current system of care more efficiently and effectively. The state hospitals have long lengths of stay often well beyond clinical necessity and difficulty moving patients through the system creates a back-up in admissions to all levels of care. Stronger linkages to community resources are needed to identify bed availability and needs by type on an ongoing basis, integrate systems to move patients from different levels of care, and share clinical resources to assist patients in transitions from one setting to another.

Given the importance of a more fluid continuum that uses services most appropriately, it is strongly recommended that the current public mental health payment system be evaluated and restructured to shift the risk for patient outcomes to the providers/CSA. Restructuring the payment system would allow the CSAs/ providers greater flexibility to fit the services to the patient rather than the patient to the service.

The current fee-for-service payment environment that covers most MHA consumers does not provide an incentive to move individuals through the continuum. Each provider has accountability for their own service during one step of the consumer's care path, and not the role they play in the bigger picture of maintaining the health of the consumer. Only the Baltimore Capitation Project model has the built-in incentives to keep people healthy and independent.

While a capitated model provides the most comprehensive incentives, some other options exist that would at least begin to shift the risk for outcomes to the providers. Rather than a strict fee-for-service approach that pays the same for each unit of service, a graduated system could be put in place based on the assumption that resource needs decrease as the individual moves through treatment settings (i.e., gets better). Most consumers do not need the same level of care on day one of service as they do on their last day of service, and this model is based on that assumption. In a graduated payment system, per diems would decrease as patients continue through the service. This approach is effective in residential settings, yet it is less so for outpatient settings.
Bundled payments are another option to consider. Bundled payments can include several providers or services in an area and would facilitate collaboration across the continuum. A provider/CSA would be given one payment to cover all (or some) community-based services until the individual has achieved

their intended outcome. It is up to the providers included in the bundle to determine how the dollars are best spent.

There is no doubt that changing the payment system will be challenging and requires approval at multiple levels, but it may make the greatest difference in the ultimate outcomes for the mental health consumers. Current legal and regulatory restrictions will need to be evaluated to identify potential hurdles in making effective changes and determining which model(s) makes most sense. An opportunity exists to incorporate risk-sharing ideas into the current discussions of managed behavioral healthcare organizations and other integrated physical/mental health models.

Each of the community strategies identified here could result in a decrease in the demand for state hospital beds. However, each comes with its own set of risks and rewards as summarized below:

Strategy	Risk	Reward
Peer supported networks	▪ Training/ supervision ▪ Provider culture	▪ Consumer acceptance
Intercepts 1-3	▪ Training/ supervision ▪ Resistance from court system	▪ Evidence supports decreased hospitalization, jail time, greater movement toward independence
Telepsychiatry	▪ Limited clinician to client face to face time	▪ Ability to cover state and cross settings ▪ Potential to partner with private healthcare systems
Forensic monitoring	▪ Support of courts ▪ Staffing	▪ Consumers connected to help and support ▪ Decreased recidivism
Increase community residential bed levels	▪ Cost of additional residential beds ▪ State may have less control than with current ALUs	▪ Consumer stays connected to community ▪ Facilitates re-integration
Payment alternatives	▪ Maryland waiver could be a challenge ▪ Culture	▪ Incents providers to move consumers to right place at right time ▪ Facilitates development of multiple levels of care

Community Implementation Scenarios

Cannon Design divided the community strategies into three scenarios to be considered for implementation, in addition to the status quo scenario. Scenarios were based on selected assumptions of impact on state psychiatric hospital inpatient bed capacity. The presented scenarios were selected if they were proven to have worked in other state mental health systems, were identified as likely to be effective in Maryland should they be implemented and/or if there was available data to calculate estimated impact on reductions in admissions to state psychiatric hospitals. It should also be noted that although this study's primary focus was on individuals served by the state psychiatric hospitals, the recommended community strategies could benefit all individuals served by the public mental health system.

Status Quo – Under the status quo scenario, all current policies and investments stay constant over the next decade. State psychiatric hospitals operate as they do today and proposed additional community strategies are not implemented. The only changes driving demand for adult mental health inpatient services for the state hospitals are demographic shifts and normal

utilization trends. This scenario is intended to be used as a baseline to determine what future bed capacity might be without changes to the current mental health system.

Scenario A: Conservative – Under Scenario A, community strategies identified to have the highest ease of implementation and lowest capital requirements are implemented. Scenario A is the most conservative scenario and assumes implementation of Peer Networks and Telepsychiatry. Potential impact is reduction in the custom forecast due to decrease in admissions of Short Stay, Readmissions and Wait Listed patients.

Scenario B: Moderate – A range of community strategies with moderate ease of implementation and capital requirements is implemented in Scenario B. This scenario assumes implementation of Peer Networks, Telepsychiatry, Forensic Monitoring and Alternative Community Beds. Potential impact is reduction in the custom forecast due to decrease in admissions of Short Stay, Readmissions and Wait Listed patients, and reduction in LOS.

Scenario C: Comprehensive – All recommended community strategies are fully funded and implemented. Scenario C is intended to represent the best-case scenario and potential bed need under the best circumstances. This scenario assumes implementation of all strategies. Potential impact is reduction in the custom forecast due to decrease in admissions of Short Stay, Readmissions and Wait Listed patients, and reduction in LOS.

Community Scenario	Strategies Included	Potential Impact to Custom Forecast
Conservative Implement strategies with highest ease of implementation	▪ Peer Networks ▪ Telepsychiatry	Wait List: 13% in 3 years
Moderate Implement easiest and moderate community strategies	▪ Peer Networks ▪ Telepsychiatry ▪ Forensic monitoring ▪ Alternative community beds	Readmitted: 13% in 5 years Wait List: 13% in 5 years LOS Reduction: 14% in 5 years
Comprehensive Implement all community strategies	▪ Peer Networks ▪ Telepsychiatry ▪ Forensic monitoring ▪ Alternative community beds ▪ Intercepts 1-3 ▪ Payment alternatives	Short Stay: 8% in 7 years Readmitted: 50% in 7 years Wait List: 13% in 7 years LOS Reduction: 25% in 7 years

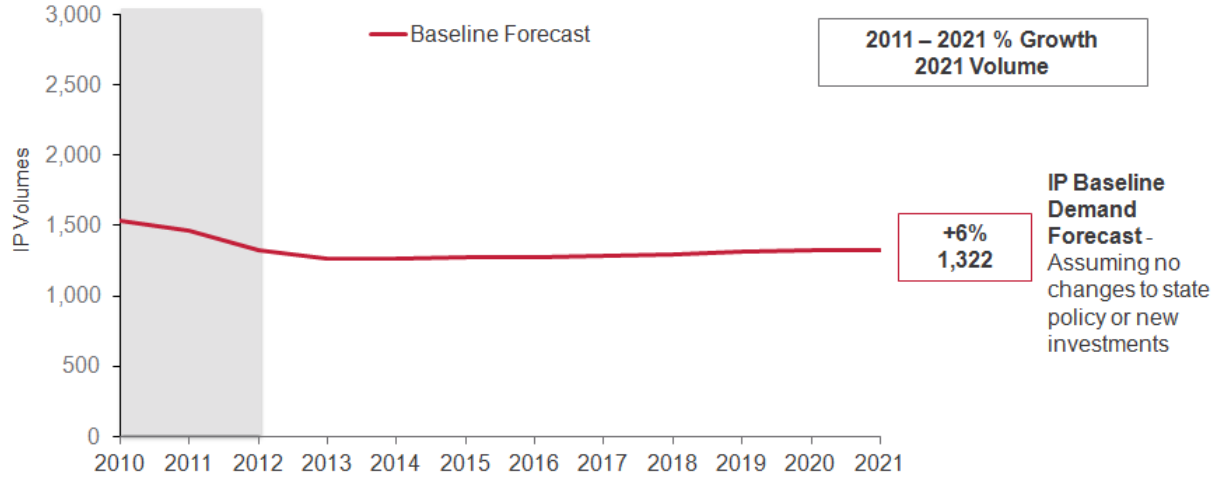
3.4 Forecasted Growth

Baseline Forecast

Over the past few years, there has been deliberate movement towards pulling out civilly committed individuals with shorter stays and treating them at acute care facilities or in the community. From interviews with a number of stakeholders at each facility and in-depth review of historical patient-level data, generally, the individuals left in the state psychiatric system represent those who are forensically-involved, cannot find placement in the community due to a history of violence or other legal entanglements, and/or are the most complex and vulnerable cases in the state. Assuming institution and statewide strategies do not change and there are no significant new investments made, projected ten-

year baseline growth is expected at 6% to 1,322 admissions from FY10 admissions of 1,248. Baseline growth will be driven by increases in overall population and forensic population.

State Psychiatric Baseline Demand
IP Overall Discharge Volume, 2011 – 2021



Custom Forecast

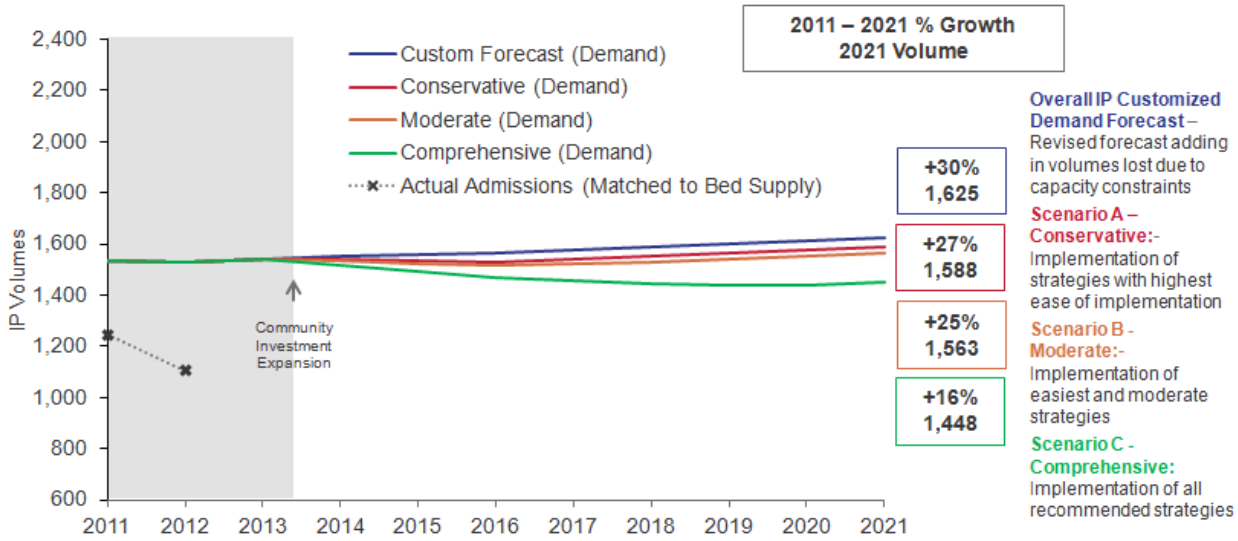
Incorporating inputs from the Project Steering Committee, Cannon Design customized the baseline forecast by including the following factors:

- Volumes lost due to capacity constraints added back to forecast. Specifically, the custom forecast incorporates projections for individuals on wait lists for placement into the state psychiatric hospital system. Waiting list admissions ranged from 3 to 10 individuals per month by hospital and represented referrals from both the forensic side (court-ordered or detention centers) and civil side (referrals from acute care hospitals, freestanding psychiatric hospitals and special needs). While forensically involved individuals awaiting placement in a state psychiatric hospital can be admitted in less than two days, waiting time for individuals on the civil wait list was substantially longer, some quoting a minimum of two months. This lengthy waiting period for civil patients increases the burden of care for community inpatient providers and helps explain the decline in civil admissions in the state psychiatric hospital system. Demand for future psychiatric hospitalization for individuals in jails and prisons was calculated by taking into account assumptions on the percentage of incarcerated individuals with mental illness (literature assumes a 16% mental illness prevalence rate), imprisonment rate per 100,000 people and population growth over the next ten years. An in-depth study into the forensic population, not in the scope of this study, will aid in refining these assumptions.
- Increases in numbers of geriatric and medically complex state hospital patients will occur in light of demographic shifts. These shifts in the patient population will cause increases in LOS and ultimately, bed need capacity needs. Length of stay has direct impact on bed capacity and is determined by many factors, included the skill of the hospital treatment tea, ability to implement realistic discharge plans and availability of appropriate housing and treatment in the community.
- Assisted Living Unit (ALU) closures in FY13 at Spring Grove and Springfield are expected to increase length of stay for those individuals who no longer require inpatient care but are not considered fully ready for placement in the community and/or who are difficult to place.

Customized demand for Maryland's state psychiatric hospitals is forecasted at 30% to 1,625 admissions over the next ten years. With implementation of the community strategies, custom demand can vary depending on the level of investment in the community. Implementation of the Conservative scenario would result some reduction in growth to 27% to 1,588 admissions, Moderate scenario to 25% growth to

1,563 admissions and Comprehensive scenario to 27% growth to 1,448 admissions over the next ten years.

State Psychiatric Custom Demand Scenarios
IP Overall Discharge Volume, 2011 – 2021



Note: Assumes movement of Voluntary Self and Voluntary Other patients with LOS <60 days to community/other setting and reduction in readmissions over ten years with community investments in place. Ten-year growth calculated from actual volumes for FY10, not projected demand.

4. Future Needs & Options

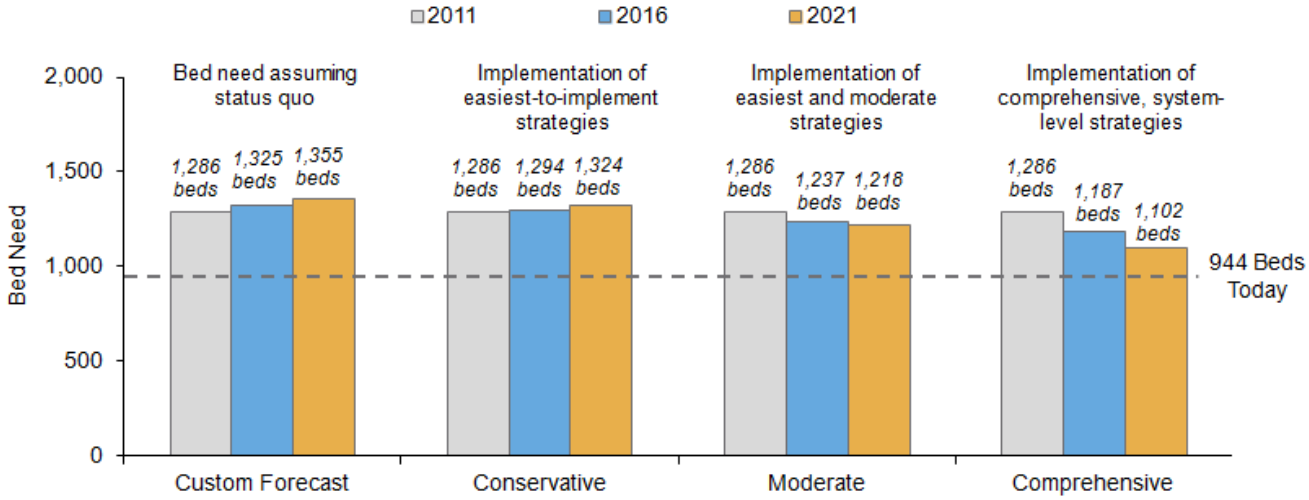
4.1 Maryland State Psychiatric Hospital Projected Facility Needs & Sizing

The projected demand for state hospital capacity utilizes volume forecasts, as well as length of stay (LOS) and average daily population (ADP) projected changes. Future bed capacity is calculated by multiplying anticipated annual admissions with length of their stay (LOS) to determine total days, or number of patient-days of hospital care which individuals served by state psychiatric hospitals will use per year. Total days are then divided by a recommended occupancy standard and number of days in a year to determine bed need.

Today, state psychiatric hospital capacity is 944 beds. In the absence of community investment and as the number of individuals served by the state psychiatric system grows and average LOS increases, bed need is expected to increase over the next ten years. However, future needs can be modified by a determination of the role of the state hospitals in the future and the community strategies selected for implementation.

The community implementation scenarios represent a few options that can balance the demand for state psychiatric beds against services in the community, ensuring that patients are served in the most appropriate and least restrictive care setting.

State Psychiatric Hospital Current and Projected Bed Need by Scenario
No Occupancy Target, 2011 – 2021



Note: LOS improvements expected for certain patient types resulting from implementation of Moderate and/or Comprehensive scenarios.

Historically, the state has not adhered to a standard occupancy rate for determining hospital bed capacity. If demand for bed capacity were to be calculated without applying a target occupancy rate, the breakdown would be as follows:

Status Quo (No Occupancy Target) – Intended to be used as a baseline to determine what future bed capacity might be without changes to the current system. Under status quo, bed need increases to 1,355 beds by 2021. In this scenario, bed need continues to grow largely because of projected admissions growth rate and increasing lengths of stay.

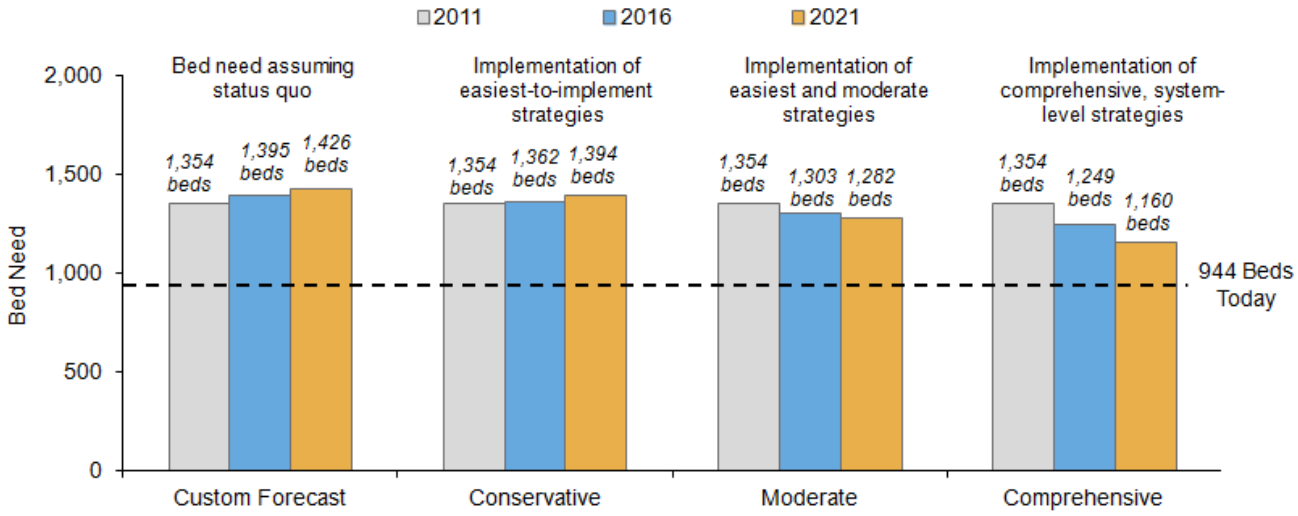
Scenario A: Conservative (No Occupancy Target) – Scenario A projects needed bed capacity for state psychiatric hospitals at 1,324 beds by 2021.

Scenario B: Moderate (No Occupancy Target) – Scenario B projects needed bed capacity at 1,218 beds by 2021.

Scenario C: Comprehensive (No Occupancy Target) –Scenario C is intended to represent the best case scenario and bed need under the best circumstances. This scenario projects needed bed capacity at 1,102 beds by 2021.

Cannon Design recommends the use of a target occupancy rate to enable hospitals to manage census fluctuations or changes in patient acuity without compromising necessary access to care. As noted earlier, all state psychiatric hospitals are near or over 100% occupancy. Cannon Design recommends a target occupancy rate of at least 95% for state-operated facilities. Though 85% is commonly recommended for acute care hospitals, given the increasing pressure on the state to reduce costs, Cannon Design believes that a maximum 95% target occupancy rate is a more attainable target.

State Psychiatric Hospital Current and Projected Bed Need by Scenario
95% Target Occupancy, 2011 – 2021



Note: LOS improvements expected for certain patient types resulting from implementation of Moderate and/or Comprehensive scenarios. Recommended occupancy rate for acute care hospitals is 85%; for state hospitals, occupancy rate may not be attainable, therefore was modified to 95%.

Status Quo (95% Target Occupancy) – Under status quo, bed need increases to 1,426 beds by 2021. In this scenario, bed need continues to grow largely because of projected admissions growth rate and increasing lengths of stay.

Scenario A: Conservative (95% Target Occupancy) – Scenario A projects needed bed capacity for Maryland state psychiatric hospitals at 1,394 beds by 2021.

Scenario B: Moderate (95% Target Occupancy) – Scenario B projects needed bed capacity at 1,282 beds by 2021.

Scenario C: Comprehensive (95% Target Occupancy) –Scenario C is intended to represent the best case scenario and potential bed need under the best circumstances. This scenario projects needed bed capacity at 1,160 beds by 2021.

Planning inpatient capacity need in conjunction with enhancing the breadth and depth of community services will enable the State of Maryland to proactively planning for a future care model that will truly serve the neediest and most vulnerable individuals with mental illness in Maryland. Assuming no changes are made to the mental health system, bed need is expected to continue to grow over the next ten years. Conservative investment in community resources, or Scenario A, may decelerate growth of needed bed

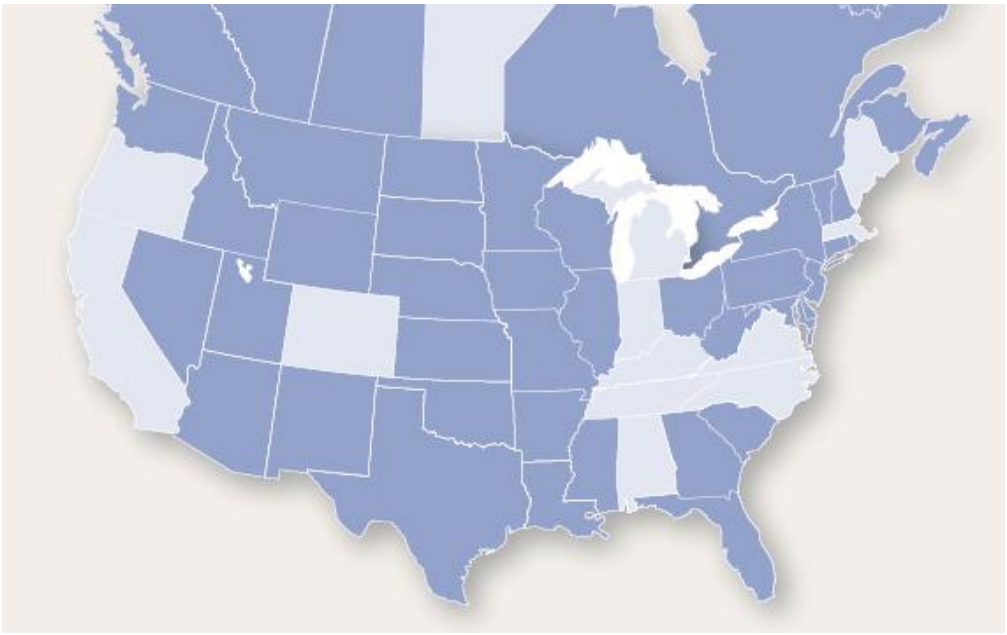
capacity, but will not reverse this trend. Conversely, comprehensive investment in the community, or Scenario C, will have the greatest impact on reducing demand for bed capacity but will require significant investment and time to align efforts at a systemic level. Following discussions with MHA and DHMH leadership and factoring in historical trends towards increased and prolonged community investment , the implementation of the Comprehensive Scenario C is recommended to address identified gaps in community services while producing the greatest reduced demand for projected bed capacity.

4.2 State Psychiatric Hospital Best Practices

Increasingly, state psychiatric hospitals are devoting resources to providing forensic mental health services. A study of 48 states conducted in 2007 found that while over half (55%) indicated that they were closing or downsizing their state psychiatric hospitals, 40% reported that they were involved in some aspect of new construction within their state psychiatric system. This new construction included replacing an old hospital with a new hospital (23%) and increasing the size of one of more hospitals (17%).[21]

Cannon Design surveyed 13 states, Washington, D.C., and one province (indicated in light blue in the map below) that have constructed new state psychiatric facilities since 2004. Each facility is summarized in Appendix D along with state-specific trends driving each new hospitals' design and construction. This portfolio of states undergoing construction and/or renovation provided benchmarks for sizing, bed capacity, and design best practices.

Map of the Newest State/Province Psychiatric Hospitals (Constructed or under construction)*



**Case study states highlighted in light blue*

Sizing Benchmarks

Bed Capacity Benchmarks: Bed capacity for the new facilities range from 92 to 1,500 beds. However, the majority of new state replacement facilities fall into the mid-200 to mid-300 bed range. The average size of a new state facility is 295 beds.

[21] 2007 Lutterman, T., Berhane, A., Phelan, B., Shaw, R., & Rana, V. (2009). Funding and characteristics of state mental health agencies, 2007. HHS Pub. No. (SMA) 09-4424.

Facility	State	Year	# Beds
Southeast Regional Treatment Center	Indiana	2005	150
Center for Forensic Psychiatry	Michigan	2005	210
North Carolina State	North Carolina	2008	432
Western Tennessee Mental Health Institute	Tennessee	2010	162
Saint Elizabeth's	Washington, D.C.	2010	293
Oregon State Hospital	Oregon	2011	620
Western State Hospital	Virginia	2012	246
Worcester State Hospital	Massachusetts	2012	320
Bryce Hospital	Alabama	2013	268
Eastern State Hospital	Kentucky	2013	239
Saskatchewan Hospital North Battleford	Saskatchewan, Canada	TBD	304
Average			**295**
Riverview Psychiatric Center	Maine	2004	92*
Coalinga State Hospital	California	2005	1,500*

* Bed average eliminated outliers of 92 and 1,500 beds. Note – table does not include all case studies due to incomplete data.

BGSF Benchmarks: The majority of the surveyed new state replacement facilities have allocated 1,100 to 1,500 BGSF per bed. Average BGSF per bed is 1,278.

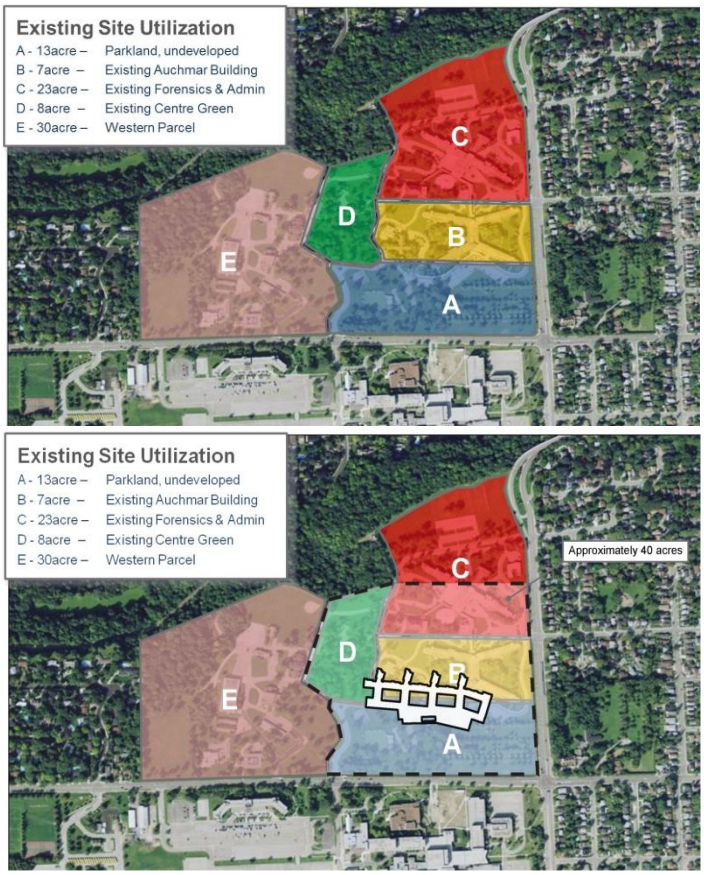
Facility	Beds	Total SF	BGSF / Bed	Const. Cost	Cost / Bed	Cost / sf
Southeast Regional Center	150	216,000	1,440	$40M	$266,667	$185
Center for Forensic Psychiatry	210	330,000	1,571	$93M	$442,857	$282
North Carolina State	432	488,500	1,131	$110M	$254,630	$225
Western Tennessee Institute	162	n/a	n/a	$56M	$345,679	n/a
Saint Elizabeth's	293	450,000	1,536	$140M	$477,816	$311
Oregon State Hospital	620	700,000	1,129	$350M	$564,516	$500
Western State Hospital	246	336,000	1,366	$125M	$508,130	$372
Worcester State Hospital	320	430,000	1,344	$302M	$943,750	$702
Bryce Hospital	268	225,000	840	$73M	$272,388	$324
Eastern State Hospital	239	n/a	n/a	$129M	$539,749	n/a
Saskatchewan North Battleford	304	233,250	1,143	n/a	n/a	n/a
Average	**295**		**1,278**			
Riverview Psychiatric Center	92*	125,000	1,359	$22M	$239,130	$176
Coalinga State Hospital	1,500*	1,200,000	800	$14M	$209,333	$262

* Bed average eliminated outliers of 92 and 1,500 beds. Note: BGSF = Building Gross Square Foot

Site Selection Best Practices

When selecting a site for a new state psychiatric facility there are several rules of thumb to keep in mind. Typically 50% of the total site area is occupied by building, while the remaining 50% of the site is allocated to green space for outdoor activities, parking, loading and receiving, and site circulation. Also, on average every ten beds requires about one acre of space on a site or roughly 30 acres for a 300-bed facility. Acquiring additional site area for a landscape buffer or civic spaces can help blend the facility and site into the surrounding community. Two other site selection factors include site access for visitors, staff and service traffic, as well as adjacencies with key organizations to support current and future partnerships.

Case Study: St. Joseph's Healthcare Hamilton- Pre-Replacement Facility Site Utilization



When considering various factors that go into planning a new psychiatric hospital facility, St. Joseph Healthcare Hamilton (SJHH) in Ontario, Canada, as one of the newest facilities under construction, was selected to represent current best practices. SJHH is a provincial replacement facility on an existing site and utilizes only part of the land available, allowing the hospital to sell or lease the remaining parcel of land. Similar to many of the state psychiatric hospitals in Maryland, the SJHH campus dates back to the 1800s and contains a number of scattered buildings. The first image represents the current site broken up into different zones. Section C in the first image represents the location of the existing 200-bed inpatient facility.

The second image represents the designated area for the new replacement facility, a 305-bed hospital. The overlaid building represents the new hospital currently under construction, while the area within the dotted line indicates the acreage to be utilized for the new facility – around 38 acres of land.

Case Study: St. Joseph's Healthcare Hamilton Replacement Facility Campus Organization

1. Proposed 305 Bed Building
2. Centre Green
3. Centre Green Extension / IPU Landscape
4. Civic Landspace
5. Parking in the Landscape
6. Playing Fields
7. Service / Delivery

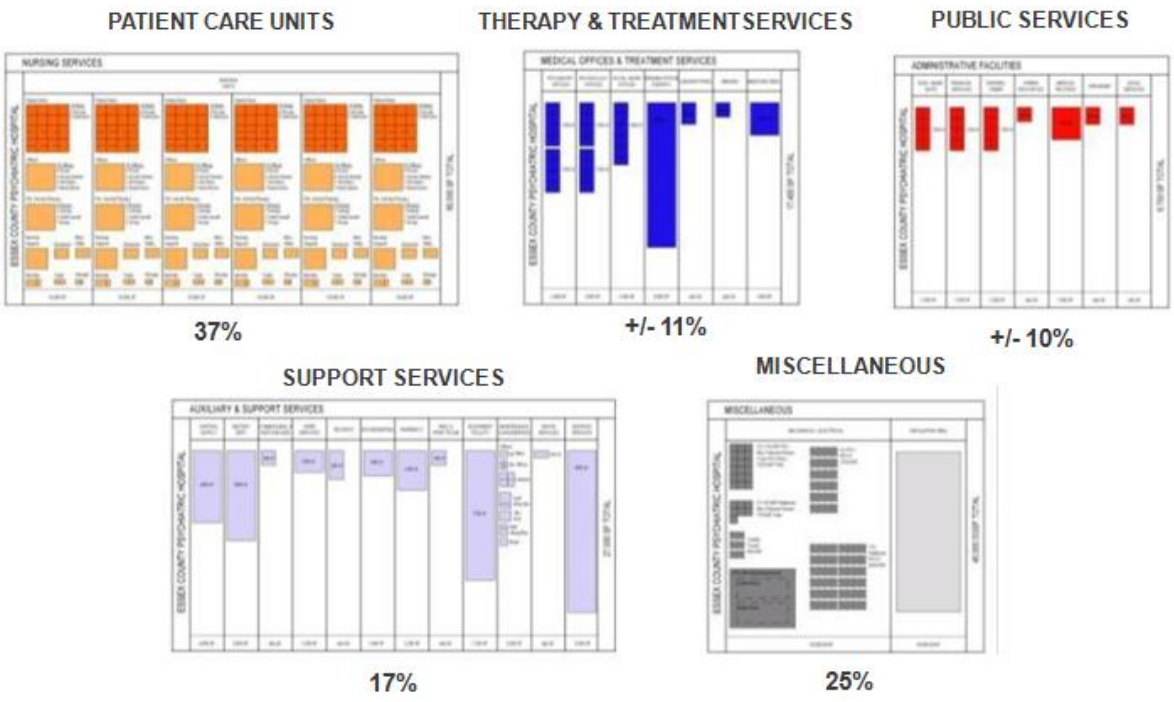
Building Organization and Programming

With regard to the overall campus organization, single building campuses function better than multiple building campuses. Single building campuses allow for ease of patient transport and increased safety and security moving patients to various treatment spaces throughout the facility. Single facility campuses can also improve patient care by allowing better access to treatment spaces for patients that may not be able to be transported safely between multiple buildings. They also decrease travel distances for staff, increasing efficiency and the amount of time staff have available for patient care.

Some of the highest risk areas for patient safety are elevators and stairwells, where the patients are in confined spaces with few supervising staff. Limiting the height of a facility to one to four stories can help eliminate the need for vertical patient circulation by bringing patient treatment spaces to the level of the inpatient unit.

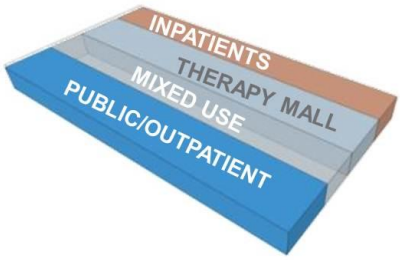
Psychiatric hospital facilities are typically divided into four major building zones: Public, Therapy, Patient Care Units and a Support Zone. The public zone of the facility includes the main visitor entry, administration spaces, any community spaces such as auditoriums and classrooms and education spaces. The therapy zone includes treatment mall spaces, medical clinics, and other patient destinations such as a café or gymnasium. The patient care units are the basic building blocks for an inpatient psychiatric facility and in general house between 16 to 28 patients. The support zone includes the back of house spaces that support the facility and are not accessible to visitors or patients such as the kitchen, maintenance shop, receiving, and mechanical rooms.

Typically, the program of a behavioral healthcare facility will breakdown into the following ratios:



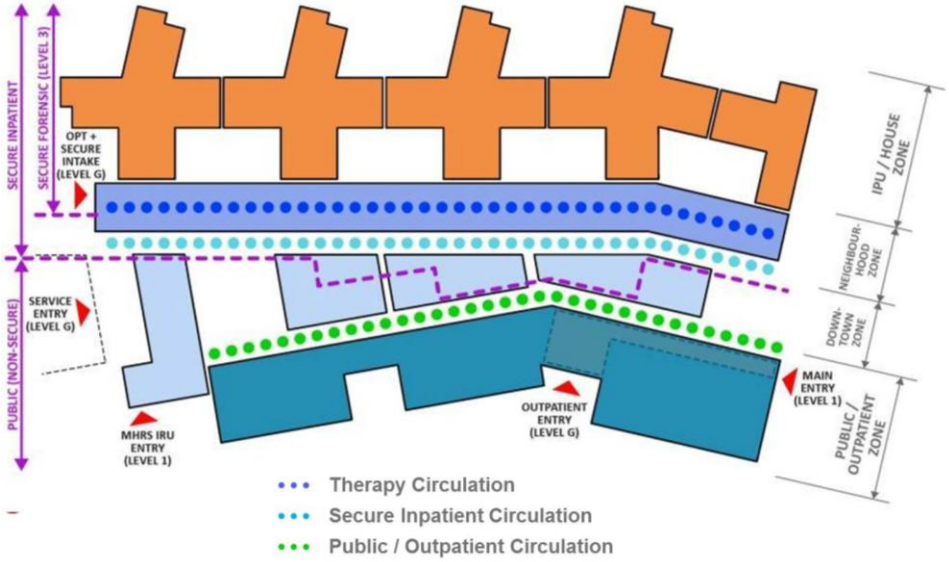
The most adaptable facilities are planned to allow for future expansion of patient care units, therapy spaces, support zones, and public programs. Best practices also include designing with the full continuum of care in mind; transitional housing units are often located on site. Anticipating possible patient census changes over time is critical in designing new facilities. In general, it is best practice to design a facility to be a safe, secure and therapeutic environment with minimal renovations for the full range of patient typologies from Forensic to Geriatric and Adolescent, regardless of what the current patient population is during the design and construction phase.

Case Study: St. Joseph's Healthcare Hamilton- Replacement Facility Zoning, 850,000 sf



The SJHH 305-bed facility is broken into four zones for inpatient care, therapy mall, mixed use and public/outpatient care. The public/outpatient care zone will be an outpatient service building connected to the behavioral health hospital, providing medical outpatient care to the general community. This zone was built to capitalize on ongoing partnerships with community groups and to purposefully invite the community to the building as a means to break down the stigma that exists regarding mental illness. Additionally, the mixed use area includes destination spaces with multiple functions – such as a gymnasium or auditorium – that are open not only for behavioral health purposes, but also to outside organizations.

Case Study: St. Joseph's Healthcare Hamilton- Replacement Facility Zoning and Circulation



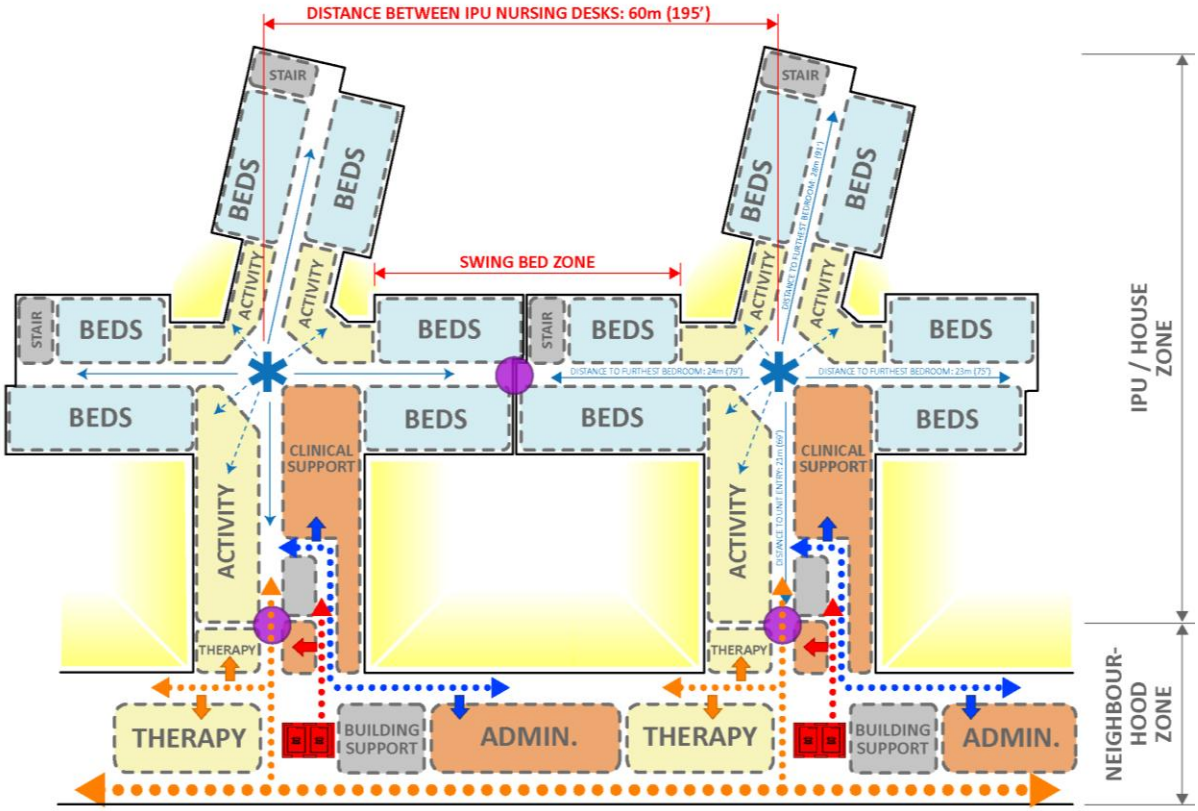
Patient Care Unit

The patient care unit is the building block for a psychiatric inpatient facility. In early stages of treatment, patients typically spend the bulk of their time on the unit. Modular unit design allows for the flexibility for patient populations to change over time. It is vital that patient care units be safe and secure, meeting the durability and maintenance requirements of an institution, while at the same time balancing the need for patient dignity and privacy.

The location of patient care units within a facility should accommodate admissions procedures and transfer of new patients to units throughout the facility. Locating an admissions unit adjacent to the admissions area helps assist in safe, dignified transfer of incoming patients to the facility. Ideally, these areas are discreet and separated from public and visitor zones of a facility. Forensic programs benefit from adjacencies to courtrooms and meeting rooms.

Passive supervision is an important element of patient care unit design. A single point of awareness allows for direct sightlines down all patient bedroom corridors, to all activity spaces, outdoor spaces and to the unit entry. Minimizing hiding spaces and alcoves helps reduce the need for secondary means of supervision such as mirrors and cameras that can be very institutional in appearance and stigmatizing for patients. Quiet rooms and seclusion suites should be located for direct sightlines and optimal staff supervision, but in locations that minimize possible disruption to the therapy and activity zones of the unit.

Patient Care Unit Zoning Diagram



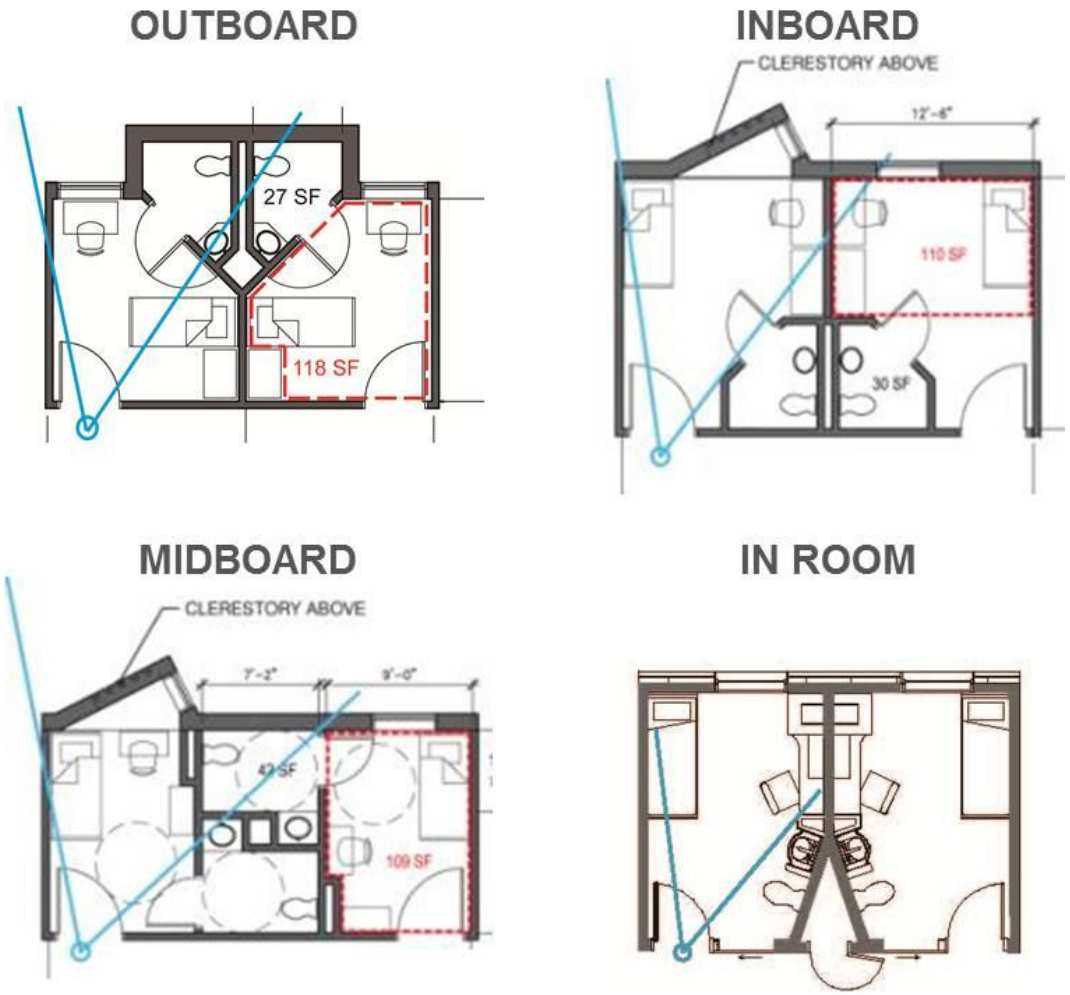
Patient care units not only support patient treatment, but also staff and visitors. Visitation rooms for families help provide spaces for interaction. Designing units so that staff has control of visitors coming on and off the unit assists in eliminating the risk of contraband being brought on unit. The unit should segregate non-patient support spaces such as soiled utility, clean linen and electrical rooms to the extent possible so that cart traffic and service traffic is minimized on the unit. Cart traffic and service staff on the unit can be a safety risk for patients and can be disruptive to therapy. A central team zone for nursing staff that includes both on-stage and off-stage spaces for unit supervision is important for work that requires a degree of privacy. Discreet staff entries allow staff to move on and off the unit through the team center and staff-only zones.

Another important design consideration is the various stages of patient treatment. Often the most acute patients may not be ready to leave the unit or go to a therapy mall; on-unit therapy space is essential for these patients who are in the early stages of recovery. A variety of visible, supervised on-unit spaces should be provided, such as activity/ dining rooms, group rooms, laundry rooms and quiet rooms. Natural

daylight and views throughout the unit create a ground effect for patients, allowing a patient to always know what time of day it is, what the weather is like and what season it is. Additionally, on-unit, secure and supervised outdoor space enables all patients, no matter where they are in their recovery process, to access the outdoors.

Patient Room Best Practices

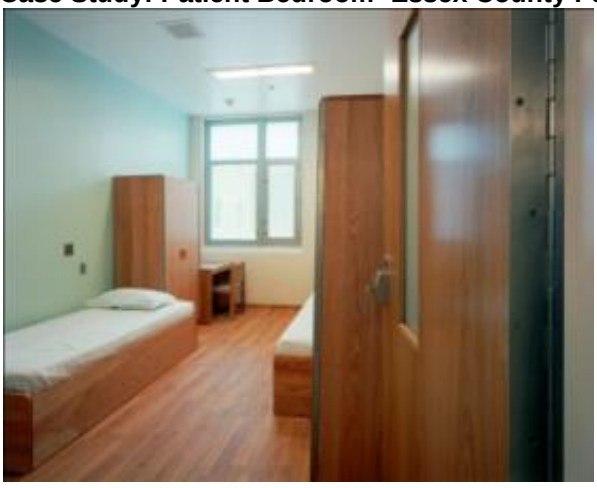
Patient Room Typologies- Ensuite Bathroom Locations and Sight Lines



The patient bedroom and ensuite bathroom are two of the highest risk zones for patient safety. It is possible to mitigate these risks through anti-ligature, tamper-resistant and vandal proof design of all materials and products within patient reach. Consideration must be given to whether or not to provide ensuite showers within the bathrooms. At minimum, patient bathrooms should allow staff to lock off access to the bathroom and water shut off controls should be provided to allow staff to limit unsupervised patient access to water when necessary. It is important to balance the need for patient supervision and safety with the need for patient privacy and dignity. Each patient bedroom should provide a window with a view to the outdoors, and should be designed to allow for sightlines to all areas of the room from the bedroom entry. Accommodations must also be made to ensure that patients cannot barricade themselves in their rooms. Best practice is to provide 100% private rooms, which supports patient dignity and privacy. Private rooms also increase unit safety and can help increase occupancy rates as they eliminate underutilized double rooms due to patient incompatibility.

Case Study: Patient Bedroom- Waypoint Centre for Mental Health Care

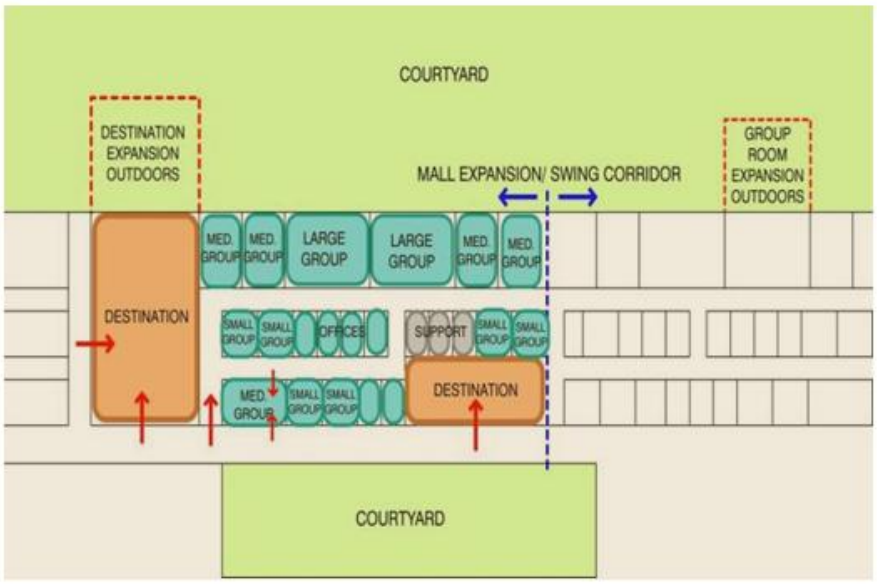
Case Study: Patient Bedroom- Essex County Psychiatric Hospital



Therapy Mall Best Practices

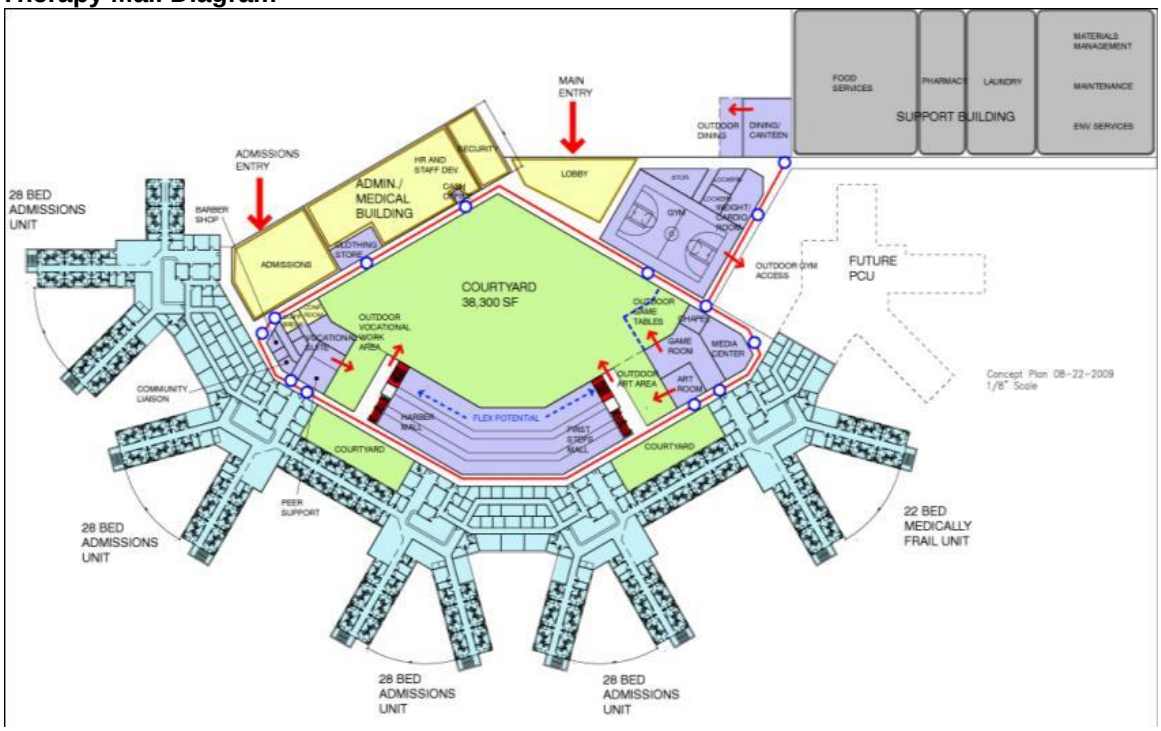
The patient therapy mall is vital to the creation of a therapeutic environment that supports patients as they transition through recovery. Centrally locating the therapy mall to the facility helps ensure it is easily accessible from all patient care units. Adjacency to patient care units that house the most acute or possibly frail patient populations should be considered. Destination spaces such as canteens and libraries for patients farther along in their treatment should be located at the greatest distance possible from the patient care units. Consideration should be given to locating spaces such as gymnasiums and classrooms in transitional zones between the secure inpatient zone and the public zone to allow for the flexibility for patient and community use at different times. The ability to bring the community into the behavioral healthcare facility helps to de-stigmatize mental illness within the community. Therapy malls should be carefully planned and scheduled to maximize space utilization of group rooms and activity spaces. Multi-functional and flexible spaces accommodate different types of therapy and anticipate change in therapies over time. The provision of patient therapy malls improves clinical outcomes for patients through increasing available treatment and allowing patients to move off unit for therapy as their recovery allows.

Therapy Mall Flexibility Diagram – Generic Therapy Mall



The therapy mall concept supports patients' various levels of privileges with limited additional staff resources and can provide incentive for patients as they recover. Different types of therapy spaces such as music and art should be highly visible to patients within the therapy mall to increase patient interest and participation. Combining ancillary treatment spaces into a single therapy mall increases efficient use of staff time through decreased patient transportation time. This allows staff to spend more time focused on actual patient care and treatment. Providing a therapy mall within a single inpatient facility rather than in multiple campus buildings also increases the amount of therapy available to all patients.

Therapy Mall Diagram

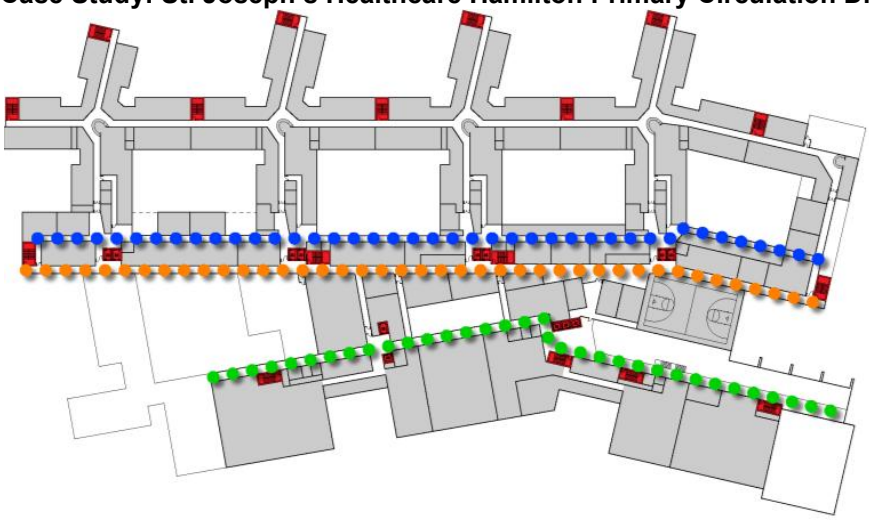


Case Study: Waypoint Centre for Mental Health Care Therapy Mall

Safety & Security

The goal of a psychiatric hospital facility design is to create a therapeutic environment supportive of patient recovery. The facility cannot be therapeutic if it is not a safe and secure environment for patients, staff and visitors. All major circulation spines should be clear and straightforward, without significant turns, breaks, or dead-ends that can create hiding areas or blind spots. It is important that patient activity and therapy spaces, including outdoor courtyards, are in direct view from the staff team center on the unit. Additional sight lines from staff spaces and circulation corridors into patient activity spaces and courtyards allow for additional supervision and secondary staff support. Hiding spaces and alcoves should be eliminated throughout the patient care environment, allowing for direct sightlines and staff supervision.

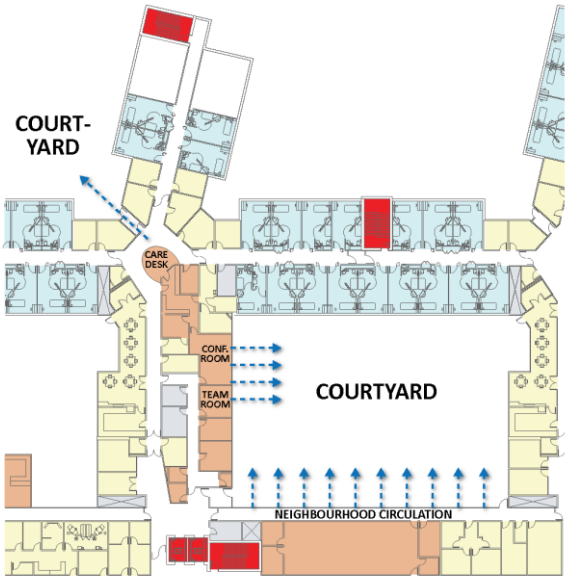
Case Study: St. Joseph's Healthcare Hamilton Primary Circulation Diagram



Best practice design includes a balanced approach to the need for safety and security and the need for a therapeutic environment that supports patient dignity and privacy. In order to do this, a facility risk assessment should be applied that categorizes all spaces into three risk zones: High, Medium and Low. High risk zones are the spaces where patients are alone and unsupervised for periods of time such as the patient bedroom and private patient bathrooms. Medium risk zones are spaces where patients have some observation or are rarely along like Group Rooms, Activity Rooms and Dining Rooms. Low risk zones are areas where patients are observed or accompanied at all times or staff only areas such as bedroom corridors, exam rooms and soiled utility rooms. This risk assessment allows for the appropriate level of safety and security with regard to material selection and anti-ligature, tamper-resistant and vandal-proof product selection to be provided where necessary, while also helping to avoid unnecessary project costs by not providing this where there is no value added. Details such as material selection, detailing and

product selections such as fixtures, hardware and furniture are particularly important in a psychiatric hospital setting. In patient areas deemed high or medium risk, all fixtures and materials should be tamper-resistant and vandal-proof, including items such as fasteners, sprinkler heads, smoke detectors, and glazing. In the high risk, unsupervised areas, no ligature points or risks for patient self-harm should be provided. This includes selecting the appropriate plumbing fixtures, mirrors, door hinges and hardware, shower curtains and other potentially dangerous items.

Case Study: St. Joseph's Healthcare Hamilton PCU Sight Lines



Safety/Security: Reasonable Degrees of Prevention - Below 4 Feet

4.3 Facility Recommendation

The current and future state assessment highlighted several opportunities to elevate the level of state mental healthcare for the Maryland's citizens. One dimension of that opportunity for Maryland is through a strategy of facility updates or modernization focused on improving the consumer and staff experience and ensuring that care is delivered in an efficient and safe environment. This section describes the recommended facility strategy.

Key Principles Guiding Facility Strategies

Cannon Design articulated guiding principles in developing future facility options to meet demand. Additionally, future facility options were evaluated through each of the Lean-based 3P lenses (Production, Preparation, Process) to ensure optimal outcomes. The concept of 3P, as it applies to healthcare facilities, refers to an integrated approach in designing the facility, the workflow processes and the space while also minimizing waste. This approach is critical in a healthcare environment where the activities of "producing" and "preparing" services for patients depends heavily on a well-tuned "process".

The objectives of the facility strategy were to:

1. Appropriately define the bed quantity and need of the system based off of detailed analysis
2. Replace aging infrastructure and facilities that do not support best models of care, safety and security
3. Best serve a dominant Forensic patient population

The option was crafted to deliver the following outcomes:

1. Provide long-term fiscal responsibility
2. Provide best location for ease of access and transportation
3. Attract and retain quality professional staff
4. Help the state to phase implementation in manageable way and in clear and appropriate timeframe

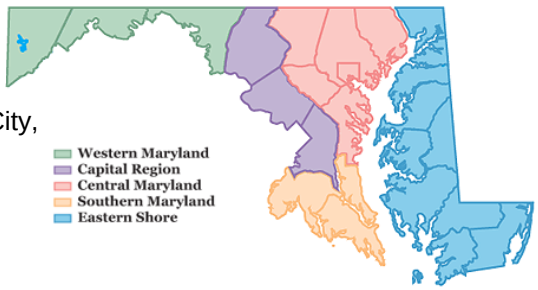
Facility Strategy Assumptions
There were five key assumptions that went into the development of the facility strategy and the determination of recommended solutions that address the future state psychiatric needs of Maryland:

1. Current operating bed count is 944 across the five state psychiatric hospitals.
2. Recommended target occupancy rate of 95%.
3. Based on the "Comprehensive Scenario" projections, 1,160 beds will be needed in the system by 2021 to support patient demand, an additional 216 beds over existing operating beds today.
4. The long-term strategy should include plans to upgrade or phase out aging infrastructure in order to meet clinical care, safety and security needs.
5. State should leverage site/land that they currently own to provide for new construction.

Site Recommendation:
In planning for potential implementation of new services or facility resources, designated planning areas are useful in predicting utilization and distributing volumes. Maryland's counties were divided into five planning regions: Western Maryland, Eastern Maryland, Southern Maryland, Capital and Central Maryland.

Regions were divided into the following counties:

- Western Maryland: Allegany, Garrett and Washington counties;
- Central Maryland: Carroll, Howard, Anne Arundel, Baltimore City, Baltimore and Harford;
- Capital Region: Frederick, Montgomery and Prince George's;
- Eastern Shore: Caroline, Cecil, Dorchester, Kent, Somerset, Wicomico, Worchester, Queen Anne's and Talbot;



- Southern Maryland: Charles, St. Mary's and Calvert counties.

Within these five regions, the following factors were considered for determining potential site placement:

- Location in terms of ability to recruit and retain staff
- Proximity / nearness to families/support system of persons served in the state hospitals
- Availability and accessibility of transportation
- Population trends and potential demand for future state psychiatry services
- Ability to support existing communities by targeting resources to support development

Central and Capital Regions were identified as the highest potential regions primarily due to population trends, future patient origin density, access to transportation corridors and public transit, and proximity to resources. Within Central Maryland, Baltimore City and Baltimore counties are the top potential placement counties. Within Capital region, areas along the I-95 corridor, as well as portions within Prince George's county, are considered high potential areas for placement. Placement of services in Prince George's, in particular, can also reach Southern region patients.

Though provision of new services or placement of a new replacement facility would provide a boost to their local economies, Eastern and Western Maryland were identified as lower potential regions mostly due to the smaller population base, difficulty in attracting and retaining qualified professionals in these areas and fewer transportation alternatives available. Additionally, Southern Maryland, while adjacent to Capital region and currently the only region without state psychiatric beds, presents a challenge in that its unique geography limits connections to the remainder of Maryland and the broader transportation networks.

Facility Recommended Approach

The recommended facility investment path for the psychiatric state facilities is as follows:

1. **Increase Inpatient Capacity to Meet Current and Projected Demand:** Based on the geographic market assessment and projected state psychiatric demand, we recommend matching future inpatient investment where the need is projected to be the greatest, particularly in the Capital and Central regions. In those geographic areas, such as the Western or Eastern Shore regions, where future capacity needs are expected to grow more slowly, transition that capacity to the nearest point of care in the system. There are several ways that the state can fulfill additional capacity needs, ranging from conversion of existing beds not currently in use to development of new beds. In light of its budget constraints and operating reality, the state will need to determine which strategy is most viable to pursue.

2. **Upgrade or Replace Outdated Beds:** Due to the significantly aged and deteriorating infrastructure of some of the existing facilities, we recommend updating and/or modernizing facilities to bridge the gap for best practices in clinical care, safety and security. In addition to addressing the existing aging and costly infrastructure, this would also provide the opportunity to implement best practice facility designs for state psychiatric care and evaluate the use of existing state assets for sale or other potential repurposing.

We recommend that this additional capacity be phased over a long-term investment horizon to allow for capital dollars to be spread over time. The phasing approach also allows time for the community services strategies to take hold and begin to materially decant some of the Inpatient capacity demands of the state hospitals into the community provider setting. Further, a phased approach buffers the impact of capacity changes in the system to provide adequate time for operational planning, logistics and for transitioning patients and their families to the new care environments.

Facility Relationship to Geographic Market Assessment
The following table describes the difference between current beds and total target beds by 2021 and determines the regions that will have need for additional beds based off the geographic market assessment. The division of bed assumes:

- 82% of demand for beds will be in the Capital and Central Regions
- Demand for additional or new beds exists in the Capital Region – 216 beds needed
- First increase bed capacity to the system to meet demand, then upgrade or replace aging infrastructure

Region	% of Total Patients in 2021	Total Target Beds 2021	Current Beds	Baseline Need as % of Patients
CENTRAL REGION	46%	534	571	-37
CAPITAL REGION*	36%	418	247	171
WESTERN REGION****	4%	46	66	-20
EASTERN SHORE *	8%	93	60	33
SOUTHERN REGION**	6%	69	0	69
Totals		**1,160**	**944**	**216**

*Assumes that Clifton T. Perkins is close enough to Capital Region to allow this facility to serve this region.
**Assumes that Southern Region bed growth will be provided in the Capital Region
***Assumes that Eastern Shore bed growth will be provided in the Central Region
****Assumes that the Western Region bed decrease will be taken out of the Central Region - existing beds to remain

Phasing

Since it is not realistic to expect a community strategy to take hold immediately or to upgrade and/or replace beds at the same time, a phasing strategy is recommended. A phasing strategy allows capital dollars to be spread out over time, community strategies to take hold and appropriate time for planning and transitioning changes for patients and families. The phasing for this concept would follow this sequence:

PHASE 1: INCREASE INPATIENT BED CAPACITY TO MEET CURRENT AND PROJECTED DEMAND

An additional 216 beds over existing 944 licensed beds is required to meet inpatient capacity demand. It is recommended that additional inpatient capacity first be added to Capital and Central Regions to meet the demands in these region, but will depend on the strategy that the state decides to adopt to increase inpatient bed capacity. Given the current economic realities for the State of Maryland, Cannon Design recognizes that several different approaches may be needed outside of new construction in order to meet capacity needs. These approaches may include one, or several in combination, of the following:

- **Reactivation of existing and/or unused beds in the state psychiatric system.** An inventory of beds that could be considered for conversion or reactivation to inpatient beds was provided to Cannon Design by MHA and DHMH. Potential beds for conversion were identified across all five state psychiatric hospitals.
    - Eastern Shore Hospital Center: 16 existing ALU beds identified as potential beds that could convert back to inpatient beds. Community beds would be required to move the current ALU residents to the community and re-purpose the ALU beds.
    - Thomas B. Finan Center: 32 potential beds identified from existing ALU beds and a currently closed inpatient unit. Community beds would be required to move the current ALU residents to the community and re-purpose the ALU beds.
    - Clifton T. Perkins Hospital Center: 32 potential beds with the re-opening of a currently vacant unit.
    - Springfield Hospital Center: 64 potential beds by converting closed and/or closing ALU beds.

- Spring Grove Hospital Center: 100 potential beds with the use of closed and/or closing ALU beds and converting two MHA buildings back to inpatient use.

In total, 244 beds were identified across the five hospitals with the potential to be converted to active inpatient status. However, additional study of the condition of existing, unused capacity to determine the cost, code implications and time period required to reactivate these beds, thus not all 244 beds may be suitable for inpatient conversion.

- **Use of private sector beds or purchase of care (POC) beds**. POC beds are those in which the state reimburses a non-government acute care hospital to provide care for an uninsured individual with mental illness. Though there have been recent cuts made to the budget for POC beds, it is possible that these beds can be utilized to decant or mitigate existing latent demand for state psychiatric bed placement. It should be noted that beds in the private sector may not be appropriate or adequately configured to meet demands of some of the population segments in the state psychiatric hospitals, thus a careful evaluation of individuals who could be decanted to this setting is required.

- **Development of new beds within the Central and Capital Regions.** This strategy may be a viable strategy to pursue should pressures on the state budget ease or if additional funding is made available to the public mental health system in the future.

PHASE 2 AND 3: UPGRADE OR REPLACE AGING INFRASTRUCTURE

The remaining aging beds in the state system can be upgraded or replaced in phases. Here, we describe a phased approach in which these upgrades or replacements can occur and be distributed by region according to projected demand. However, the state can choose to pursue multiple and incremental phases. These phases assume that all 244 identified beds across the five state psychiatric hospitals can be successfully brought online to meet the 216 bed need (though these numbers may require adjustment following additional study of existing bed conditions).

- Phase 2 assumes the upgrading infrastructure or replacement of beds in the Central Region.
- Phase 3 assumes the upgrading infrastructure or replacement of beds in the Capital Region.

FACILITY NAME	Current Beds		PHASE 1 - COMPLETE	
			Bring Available Existing Beds Online	
	EXISTING	ADD'L	EXISTING	
Spring Grove	351		451	
Springfield	220		284	
CT Perkins	247		279	
Finan	66		98	
Eastern Shore	60		76	
Add'l Beds in Central Region	n/a		n/a	
Add'l Beds in Capital Region	n/a		n/a	
SUBTOTAL	**944**	**0**	**1,188**	
GRAND TOTAL	**944**		**1,188**	

5. Recommendations

5.1 Recommendation Summary

Recommendations Overview

This study provides several recommendations focused on improving, enhancing or facilitating the delivery of mental health services to individuals served by the state psychiatric system.

The role of the state psychiatric hospital is fluid and is greatly affected by both local and national trends, some of which are beyond the control of their administrators and the agencies that operate them. However, it is very clear that the role of the state psychiatric hospitals is both distinct and critical, and virtually unduplicated elsewhere in the current care system. Because these state facilities provide a unique set of mental health services to a unique population, it is critical that they are adequately resourced and provide access to those individuals whose needs simply cannot be met elsewhere.

MHA System Recommendations

Clarify Long-Term Investment Strategy for the State Psychiatric Hospitals and Carve out Role within an Enhanced Community-Based System

Individuals struggling with long-term psychiatric illness, highly complex needs and legal entanglements are among the most vulnerable members of Maryland's society. The state serves a unique and virtually irreplaceable role in providing this care as there are few viable, alternative avenues. State deficits and economic deterioration have resulted in cuts in funding for public health services, including a 67% reduction in state psychiatric beds in the past 30 years. However, the demand for mental health services for this vulnerable population has not experienced a corresponding decrease and is expected to continue to require increasing resources in the future. It is crucial that the identity of the state psychiatric hospitals is clearly articulated and supported with the appropriate capital plans that will affirm its mission as an integral part of the state's investment in its mental health and health services system. If the state pursues an aggressive investment strategy in community-based resources, it must ensure that front-end and back-end services are closely integrated with the state psychiatric hospitals to improve the flow of individuals through a system of more responsive and proactive care.

Improve Interagency Coordination and Accountability

Historically, mental health services are delivered in separate systems and/or poorly integrated with other types of medical care and resources. This lack of integration is troubling, especially given that it is oftentimes a small number of individuals, many with multiple chronic conditions in addition to a mental illness, who consume the largest portion of resources. Services to these medically complex individuals require joint planning, coordination and continual communication with other systems, including the justice system, housing, employment, corrections, education, substance abuse, developmental disabilities and Medicare/Medicaid payment systems. Maryland is moving towards a more integrated model with the initiative to create one behavioral health administration rolling substance abuse and mental health into one administration, but will need to increase the involvement of other agencies.

To improve and deliver a more holistic and comprehensive care continuum for individuals with mental illness, it is recommended that much tighter integration and coordination of service delivery occur between the Department of Health and Mental Hygiene / Mental Hygiene Administration and other key agencies and jurisdictions. The agencies most involved with the state hospital population include the Department of Criminal Justice, the DOH and the Department of Health/Mental Hygiene Administration. These agencies all maintain their independent public mandates, and have developed as separate 'silos' under the state government. To be truly responsive to all Marylanders, each department's mandate should also include a responsibility and accountability to the other agencies for helping to manage these most challenging and vulnerable populations.

Strategies to enhance this coordination and integration include:

- Create an Interagency Coordinating Committee to address cross-system issues, simplify regulations and incentives, and to establish common goals and approaches.
- Assessing the current division of responsibilities between offices to address the complex regulatory environment, and streamline care delivery to individuals with mental illness and individuals with multiple challenges whose needs are being met by multiple agencies today.
- Development of policies and incentives that promote service integration, coordination and collaboration between agencies, services and across systems. In order to achieve an integrated, accountable system, state policies must support interagency collaboration and the use of appropriate guidelines and incentives to promote adherence to state-wide practices.
- Streamlining regulations, funding and operational structures at the state as well as community level
- Facilitating movement of forensic population between the criminal justice system and mental health treatment through promotion of coordinated re-entry programs for jail and prison inmates needing mental health services upon release to the community. Improve collaboration with probation/parole to avoid non-mental health admission and coordination with mental health services in corrections including intake screening and evaluation. Better integration of the criminal justice and mental health systems is critical before any substantive changes can be expected in the current utilization of state hospital beds.
- Conducting additional studies of other state agencies, including the Department of Public Safety and Correctional Services (DPSCS) and Developmental Disabilities Administration (DDA), and mapping the flow of individuals with mental illness across systems. Specifically, a deeper dive investigation into the forensic population can address additional opportunities to streamline care and target early identification.
- Review and evaluate the total mental health system cost (DOH, DHMH, and criminal justice system, community services) to understand where opportunities exist to either pool or shift funding so that the needs of individuals with mental illness may be addressed in a more clear, responsive and effective manner. For example, given the movement of individuals between the corrections system and mental health system, there is opportunity to re-assign or pass through funds designated for the treatment costs of jail or prison inmates with mental illness.
    - Changes to the funding/payment system within and across agencies can also create a shared responsibility and authority for managing these complex populations effectively. When goals and responsibilities are shared, the chances for an integrated solution improve.

Address Mental Health Workforce Shortage / Recruitment / Retention

The recurring workforce shortage in the mental health services field is a national issue and Maryland is no exception to this trend. Specifically, in addition to the anticipated shortage of behavioral health professionals, there is projected to be a shortage of staff with appropriate training and skills for specific populations such as individuals with co-occurring diagnoses, substance abuse and geriatric populations. Without a well-trained, appropriately-sized and diverse workforce, most efforts at mental health transformation are likely to struggle.

Recruitment and retention are 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. 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.

Suggested strategies for addressing the workforce shortage and retention include:

- Increase housing alternatives for state employees: an increase in housing alternative for employees would provide them with more employment incentive with accessible, affordable housing near their site of care.
- Conduct market wage assessment for state employees: a current market assessment for state employees wage and salary rates should be conducted to determine and address major gaps in compensation and benefits. While labor budgets remain tight, selective market adjustments could both improve recruitment efforts for critical positions and reduce staff turnover.
- Review staffing levels & overtime: staffing levels at state psychiatric facilities are often prone to overtime hours and pay – this should be reviewed to facilitate a reduction of overtime expenses and determine where gaps or overages exist in staffing levels for each department.
- Utilize technology for training: utilize e-training and teleconferencing technology for hospital professionals and community providers. Use of this technology can help to cross train staff in caring for the growing number of individuals with complex needs.
- Renovating or building new state hospital facilities with a focus on efficiency and safety can also help increase recruitment and retention, as staff satisfaction would improve in these areas.

Early Identification of Individuals Requiring Treatment Before They Enter Criminal Justice System
The state mental health system has frequently been characterized as a reactive, not proactive system, with many individuals receiving treatment only after entering the criminal justice system. Establishment of regional crisis intervention center, particularly in the Baltimore City area, and in conjunction with partner agencies within the criminal justice, mental health, and substance abuse systems, can aid in identifying individuals requiring care prior to entering the criminal justice system.

Standardize and Institute Consistent Accountability Measures and Controls
Accountability at all levels of the system is required to advance the delivery of quality services that are evidence-based and able to demonstrate clinical outcomes that promote individual rehabilitation and recovery. There are multiple levels of administration within the state system and across human service systems that hinder development of a coordinated continuum of service; a single entity accountable for services coordination and integration would aid in enforceability. Also, establishment of commonly measured clinical quality and performance outcomes will increase transparency and identify variation in care.

Our recommendations to address the accountability measures include:

- Develop and implement methodologies and protocols that measure client outcomes and that are consistent across all state facilities and providers.
- Establish demonstration projects to test various methodologies and measures of service system accountability.
- Develop standard definitions of care and measures of accountability across different settings and providers. Clear definitions of care by type and level and reporting of performance will help to minimize confusion around different program offerings and aid in approving plans for care.
- To reduce the impact of the ALU closures, MHA and the state psychiatric institutions will need to work closely with community providers and the Judiciary to facilitate movement to the community setting. Additionally, setting performance goals around LOS and other quality measures with provider partners once the model has been privatized will become increasingly important to ensure that the right incentives are in place to transition patients from ALUs to community-based settings.

State Psychiatric Facility Recommendations

Our facility recommendations assume that the ”Scenario C: Comprehensive” community services strategy is implemented and significant investment and resources are committed to the community setting. This scenario projects that 1,160 beds will be needed in the system by 2021- an additional 216 beds over the 944 existing licensed beds today. Cannon Design recommends a two-pronged strategy that will both provide this additional inpatient capacity need and address the aging infrastructure.

1. Increase Inpatient Capacity to Support Current and Projected Demand
As noted earlier, significant reductions in inpatient capacity have occurred in the state psychiatric hospitals though the system as a whole has been able to adapt to absorb some impact of previous hospital closures. However, the cost of that absorption is crowded conditions at many of the state psychiatric facilities, a census that frequently exceeds 100% occupancy levels, inefficient workflows due to overcrowding and a largely reactive model throughout the hospital system.

We believe that further capacity reduction will begin to have serious, wide-spread consequences across the whole state continuum of mental health services unless systemic changes are made to the overall continuum. In today's system, the impact of having fewer psychiatric beds is likely to have a direct correlation to the number of individuals with severe mental illness who are homeless, boarded in emergency rooms and placed in jails and prisons. This capacity shortage will likely result in persistent bottlenecks at various points along the entire mental health continuum for the state psychiatric institutions, community services and private providers, operational strains on staff, and risks to patient safety and quality of care.

Based on an assessment of the geographic market and projected demand, Cannon Design recommends directing future inpatient investment to the Capital and Central regions where the current and future capacity need is the greatest. These two regions were identified as the areas of highest potential for additional inpatient capacity due to due to population trends, future patient origin density, access to transportation corridors and public transit and proximity to resources. In other geographic areas where future capacity needs are not as great or expected to grow more slowly, such as the Western or Eastern Shore regions, we recommend referring inpatient demand to the nearest point of care in the system.

An additional 216 beds over existing 944 licensed beds is projected to be needed to meet inpatient capacity needs as outlined in the “Comprehensive Scenario C”. Given the current economic reality facing the State of Maryland, we propose that the need for additional bed capacity can be addressed in several ways:

- Reactivation of existing and/or unused beds in the state psychiatric system. Currently, 244 beds throughout the state hospital system have been identified as beds that can be converted back to active inpatient status, though additional study is recommended to assess their condition and determine the cost, code implications and time frame required to reactivate these beds.
- Private sector beds or purchase of care (POC) beds, in which the state reimburses a non-government acute care hospital to provide care for an uninsured individual with mental illness, can be utilized to meet existing latent demand for state psychiatric bed placement. However, beds in the private sector may not be appropriate or adequately configured to meet demands of some of the population segments in the state psychiatric hospitals, thus a careful evaluation of individuals who could be decanted to this setting is required.
- Development of new beds within the Central or Capital Regions. This strategy may be a viable strategy to pursue should pressures on the state budget ease or if additional funding is made available to the public mental health system in the future.

2. Upgrade or Replace Aging Beds
Due to the significantly aged and deteriorating infrastructure of some of the existing facilities, Cannon Design recommends upgrading and/or modernizing facilities to bridge the gap for best practices in clinical care, safety and security. Specifically, the greatest number of outdated beds is concentrated in the

Central Region and should be a priority for upgrading or replacement in order to meet projected capacity demand in that region. This would provide the opportunity to implement best practices for state psychiatric care and evaluate the use of existing state assets for sale or other potential repurposing.

- Upgrade or replace the existing aging beds (with closed beds brought online) in the Central and Capital Region
- In these phases, it is assumed that bed count at the Thomas B. Finan Center and Eastern Shore remain the same and that inpatient demand in the Eastern and Western Regions can be adequately met with additional or new beds in the Central Region

This additional capacity should be implemented in several phases over a long-term investment horizon to allow capital dollars to be distributed over time. The phasing approach also allows time for the community services strategies to take hold and begin to materially decant some of the inpatient demands of the state hospitals into the community setting. Finally, a phased approach buffers the impact of capacity changes in the system to provide adequate time for operational planning, logistics and for transitioning patients and their families to the new care environments.

One source of funding is to review existing state assets for potential repurposing. There are various resources currently available statewide, including vacant or underutilized buildings owned by MHA, local counties, and, the private and non-profit sectors. These buildings and lands can potentially be repurposed to for mixed-use development or to provide additional land for community programs. Finally, the sale of all or portions of these inactive facilities or land could net surplus capital resources to expand community-based programs.

Community Services Recommendations

Improve Visibility and Education for Community Services
One of the obstacles to providing and receiving community-based care is that many individuals with mental illness and their families may not even be aware of what services are available to them, where to find them or how to access those services. Improving the education and communications efforts surrounding these community locations and their services would facilitate making these services more recognizable and accessible while also de-mystifying and de-stigmatizing their critical role. Changes in the payment structure that provide greater incentives to move patient to the most appropriate, least intensive settings will also go a long way to increasing access to, and use of, the full continuum of services.

Implement the Comprehensive Community Services Investment Strategy
After careful consideration and discussion with MHA leadership, it was recommended that the state pursue “Scenario C: Comprehensive” offering a range of impactful community strategies which can be implemented over the long-term and reduce demands on inpatient bed capacity. This scenario supports the Comprehensive custom forecast model for a projected capacity of 1,160 beds by 2021 at a 95% target occupancy level.

The following community strategies are considered part of this Comprehensive investment scenario:

- Peer-supported networks: this is an evidenced-based model that complements the existing clinical care provided by licensed staff and recommends expanding the role of the peer support specialist, developing peer-run crisis facilities, improving integration of the community wellness centers and establishing community clubhouses.
- Telepsychiatry: there are currently limited telepsychiatry efforts across the state, however this strategy suggests a greatly expanding the reach of telepsychiatry and enhancing its application to other provider settings including emergency rooms, rural areas and other areas where access to psychiatric services may be limited.

- Alternative community beds: this strategy recommends the use of community residential beds to accommodate individuals who are now in the state hospitals awaiting competency, pre-trial evaluation and/or those admitted for minor violations of conditional release.
- Forensic monitoring: this strategy would expand the existing forensic monitoring to facilitate earlier discharge and decrease readmissions to the state hospitals and jails. A comprehensive look at current community forensic after care programs is needed to move away from the current practice of holding patients in the state hospitals beyond what is deemed clinically necessary. A comprehensive plan for community aftercare would facilitate smoother and more timely transitions to the community and help stem the need for additional state hospital beds.
- Expansion of sequential intercepts 1-3 (law enforcement/ emergency services, post-arrest, and post-initial hearings) in the Sequential Intercept Model (described in Appendix E) emphasizes the necessary 'front end' social and clinical support services that keep individuals in their home communities, maximize independence and decrease the need for more intensive resources (hospital or jail). While many of these services exist in Maryland today, significant expansion is needed to provide equal access across the state and to broaden the breadth of services, including support for pretrial and programs, urgent care and/or drop off centers, mental health dockets and mental health courts.
- Restructure financial incentives to increase provider risk for outcomes. Given the importance of a more fluid continuum that uses services most appropriately, it is strongly recommended that the current public mental health payment system be evaluated and restructured to shift the risk for patient outcomes to the providers/CSA. Restructuring the payment system would allow the CSAs/ providers greater flexibility to fit the services to the patient rather than the patient to the service.

Partner with Local Businesses to Provide Employment Options For Individuals Leaving the Hospital
The Maryland State Department of Education, Division of Rehabilitation Services (DORS) and MHA coordinate efforts with selected, local businesses in each community to provide part-time or full-time job placement opportunities when individuals are ready to leave this hospital and are capable of managing employment. It is recommended that MHA enhance the current supported employment mode; a patient's request for employment should be noted in the discharge/after care plan, followed by a referral to the appropriate entity for employment services. This would provide an immediate outlet for individuals with mental illness to service their community and get back on their feet, while also providing a structured, transitional environment as they return to the community.

Invest in Quality, Affordable and Supportive Housing
There are few viable housing options for individuals utilizing state hospitals for long-term care. The availability of adequate housing and/or housing alternatives has a direct correlation to state hospital utilization and for certain patient segments. A coordinated plan between the respective state agencies to address the housing challenges is a critical first step to facilitating the best use of resources. Housing investments should encompass support for individuals, providers, and developers. Support could include rent subsidies or vouchers, funding for the support mechanisms needed in supportive housing, and capital financing mechanisms for housing unit development.

Technology & Systems Infrastructure Recommendations

Implement Electronic Medical Records Across All State Hospitals and Community Providers
While electronic medical record adoption can have a high, initial capital cost, the long-term benefits could be substantial and improve care coordination across the state. There is a critical need for data-driven needs planning that is transparent, consumer and family focused and outcomes-driven and that communicates the mental health needs of Maryland as a whole and the various counties. Benefits of this approach include:

- Providing a framework for consistent and continued measurement of outcomes.
- Providing more system transparency and establishing measurements for accountability using standardized outcome data

- Ability to produce and analyze clinical and operational data and communicate performance and findings to appropriate stakeholders.
- Supporting the establishment of policies across the system
- Better coordination with community services and other agencies

Expand Use of Telehealth and Teleassessment
These systems may alleviate variation in care, education and training throughout the state. The application of telehealth can range from hospital-to-hospital or hospital-to-community provider discussing a case to home monitoring for medication adherence to delivery of non-clinical services such as medical education, administration and research. The use of telehealth also goes hand-in-hand with electronic medical records, allowing physicians to document patient information electronically. As payers begin to reimburse for telemedicine encounters, the use of this technology is expected to grow exponentially.

RFID / Passive Badge System to Monitor Patient Activity and Provide Security Access
The use of RFID and intelligent badge systems have been used in many psychiatric settings and could be implemented to better monitor patient activity, track location and to facilitate security access to permitted or restricted areas for each patient. This approach could also preserve patient integrity and improve their perception of their care since it provides a passive way of managing their movement about the facility.

6. Appendices

Appendix A. Interview Summaries

This section captures the main themes and opinions of various stakeholders concerning the state of Maryland's mental health system. Cannon Design solicited input from MHA directors and staff, state hospital CEOs and staff, Maryland Advisory Council on Mental Hygiene, consumer advocacy groups, the Developmental Disabilities Administration, the Maryland Judiciary, and the Maryland Attorney General's Office.

Nearly all stakeholders identified community housing as the most significant gap in the mental health care continuum.

- Stakeholders frequently remarked on the lack of housing options for people discharged from state hospitals, particularly those who have been incarcerated.
- Community advocacy group sees need for housing services that offer a level of care between that of RRPs and independent housing.
- There is a perception of limited movement between residential beds to permanent housing.
- High housing costs in Maryland contribute to inability of people with disabilities and mental illness in accessing housing.

Interview quotes:

- "*Housing is a huge issue and confounded by the different agencies that control housing services. They try to coordinate but it isn't as much as it should be."*
- *"Community providers are not supporting people ready and willing to live in an RRP unit"*
- *"Maryland has a number of great effective pilot projects, but they never get funded and never get scaled due to lack of money and resources."*
- *"Rent subsidies have big impact, especially for long-term state hospital patients, which helps increase turnover."*
- *"Most of the emphasis has been on independent housing, which is good, but not always adequate in having all of the support necessary."*
- *"Maryland has some of the highest housing cost in the country ...monthly rent exceeds monthly checks, even with supported housing."*

Availability of crisis services varies by region within Maryland partly due to poor financial incentives. However, these services are critical for helping individuals before they enter the criminal justice system.

- Crisis beds are thought to be insufficient due to limited funding.
- Advocacy groups support the use of peer-run respite services as a low-level crisis service, and believe it would reduce emergency department visits.

Interview quotes:

- *"The state could use more crisis services – they work for people with complex needs and for high-cost users."*
- "*Not all jurisdictions have crisis services. The issue is that crisis providers need to make the model work in the fee-for-service environment and payment for crisis is historically low."*
- *"Fee-for-service payment system doesn't support Crisis/ Peer-run respite services."*

Fee-for-service (FFS) system results in restricted availability of wraparound and flex services and contributes to limited provider follow-up to people with mental illness in the community.

- Perception from community stakeholders that FFS limits providers' ability to sustain relationships with mental health consumers, as providers have no responsibility to follow up on missed appointments, nor can they do that financially.
- Forensic consumers could benefit from additional services not funded through public mental health FFS system, e.g., transportation, employment services, social support, dental services.

Interview quotes:

- *"While we have providers, do not have follow through which is so important to the forensic population. This contributes directly to need for increased hospital beds for forensic patients."*

- *"Barriers for people coming out of state hospitals is housing and flexible services that don't fit within fee-for-service system.*"

Aging infrastructure and outdated technology result in operational inefficiencies across the state hospital system. Implementation of electronic medical records (EMR) and telepsychiatry would create streamlining opportunities.

- On the MHA side, there is a belief that state hospitals are much less efficient than private hospitals due to old facilities, lack of technology, and distance between facilities.
- EMR implementation in state hospitals is stifled by budgetary constraints, but some initiatives have not been completely halted.
- For regional institutions, continuing medical education (CME) training requires significant travel due to the rural locations. More telecommunication would help ease this for staff.

Interview quotes:

- *"In the state hospitals, facilities are spread out, transportation is almost always an issue. Staff communicates by word of mouth."*
- *"Telepsychiatry is catching on slowly, but it is catching on. Rural areas will benefit the most."*

Impressions of the state hospital system's optimal role in the mental health continuum of care varied among stakeholders, with a minority in support of reducing reliance on state hospital facilities and a number of individuals concerned about further closures.

- Stark difference of opinion exists between stakeholders on need for more or less state hospital beds.
- Most interviewees expressed reluctance to close any more beds at this time without significant investment in community programs.
- Acknowledgement that forensic population makes up largest patient mix, but very complex civil cases will not disappear from state hospital system.

Interview quotes:

- *"The state hospitals are not recognized as an equal player in the mental health services system."*
- *"It is a good thing state hospitals haven't grown, reduction in state beds is good. Purchase of care beds offer more fluidity in transitioning to the community than the state hospitals."*
- *"State hospitals have a role in forensics, larger than in the past, but there is a need for long term sub-acute care for people that have not been successful in the community. We've tried to balance them, but now focus is on forensics."*
- *"We cannot decrease state beds until community programs are adequate."*
- *"There is quite a future for state hospitals in terms of patient populations who will not be able to be treated in the community setting. I don't ever see them privatizing."*
- *"There is fear that if we get rid of publicly-funded facilities, private facilities will not be able to deliver the care needed."*
- *"Resources for state hospitals is shrinking at a rate that is very concerning I've been doing this work for a long time and the pressure put on beds, workers and amount of time to do this work is distressing."*
- *"Somebody should be not in the state hospital because of their societal / legal status, but because of their clinical status."*
- *"Hospitals are viewed as cash cows and they're not. Currently, they're doing the best with what they have."*

Some progress has been made in interagency communication and cross-training, yet stakeholders stated that additional coordination, training and communication is necessary.

- In recent years, MHA has improved communication and training with DDA and criminal justice system.
- More cross-training is needed with public safety (parole officers) due to quick turnover.
- Additional best-practice sharing between MHA and DDA would be a significant benefit for treating individuals with both intellectual disabilities and mental illnesses.

Interview quotes:

- *"Barriers between MHA and DDA have begun to fall down; we have a good working relationship."*
  "More training with social workers on the mental health side is needed, as some social workers

don't understand what intellectual disabilities is and what documentation you have to prove that to come into an Intermediate Care Facility for the Mentally Retarded (ICF/MR).

- *"There is a lot of communication and meetings that take place between different organizations and agencies. However, I don't know if it's effective because everybody is entrenched in their own position."*

Mental health courts were described as important in the jail diversion process and in reducing recidivism, but are also perceived to contribute to delays to state hospital discharge.

- State psychiatric hospitals are mostly populated by court orders.
- Many regions across the state are forming consolidated mental health dockets.
- Some community stakeholders point to the tendency of judges use hospitals as alternatives to jail, as it is seen as a less restrictive environment.
- State hospitals find it difficult to plan for admissions to specific units, as courts rely on them to admit patients without input into the process.
- Once individuals are admitted to a state hospital, there are barriers to discharge due to judges' specific demands regarding community placement.

Interview quotes:

- *"Some mental health courts are very active social workers, which in theory is good thing but in practice this can be bad thing because DHMH doesn't have capacity to provide services to all these people. Once they find them unable to be restored to competency and are civilly committed, the court tries to mandate care."*
- *"Judges say if we were doing better in community and follow up, maybe wouldn't have these people coming in the first place. There is difficulty in placing people out of the hospital and getting courts being satisfied with placement."*
- "*Courts have a high bar for services in the community, supervised housing and fairly intensive services. Some judges reject care plans that are clinically sound but not enough supervision and housing."*
- *"The mental health court may be the reason why there are longer bed stays, but aftercare plans don't fall apart as quickly and recidivism is lower."*

Concerns cited in ensuring consistency in level of care post-discharge. Programs to measure outcomes are beginning to be put in place, but need to be available at the provider level in order to provide clarity and consistency around care.

- Limited ability to track outcomes and to demonstrate outcomes in the State.
- Fidelity of care varies by provider.
- Need for transparent measurements for accountability that will require standardized and validated outcome data.

Interview quotes:

- *"Many times pilots demonstrate success but programs are largely judged on the basis of statistics, not outcomes."*
- "*If you refer somebody to an RRP, what does that mean and what does it look like for the patient?"*
- *"More clarity and consistency of monitoring of different programs would inspire more confidence in approving plans for care."*

Appendix B. State Psychiatric Hospital Facility Priority List

As part of the interview process, each of the five state psychiatric hospitals completed a facility priority list in which they provided a score from 1 to 5 on several facility-related topics, including Infrastructure, Building Performance, Water, Sites and Operations & Maintenance (O&M). The results from the priority listing are shown below.

Legend

Priority 1 - Absolutely must be included
Priority 2 - Important please include
Priority 3 - Neutral - We would like to know more about this
Priority 4 - Not currently on our radar
Priority 5 - Under no circumstance should this be discussed

Spring Grove Hospital Center

Infrastructure	Red Bricks	Noyes/Hill/ Sullivan	White Building	Smith	Tawes	Average
Central Heating Systems			4			**4**
Capacity	4	4	4	4	4	**4**
Redundancy	2	2	2	2	2	**2**
Condition	2	4	4	3	4	**3.4**
Central Cooling Systems			2		2	**2**
Capacity	4	2	2	2	2	**2.4**
Redundancy	2	2	2	2	2	**2**
Condition	1	1	2	2	2	**1.6**
Emergency Power/Generators						
Capacity	2	2	2	2	2	**2**
Redundancy	2	2	2	2	2	**2**
Condition	1	1	1	4	1	**1.6**
Refrigerant Management	1	1	1	1	1	**1**
Air handling Systems	1	1				**1**
Capacity	1	1	4	2	4	**2.4**
Redundancy	1	1	2	2	2	**1.6**
Condition	1	1	1	1	1	**1**
Unique Space Types						
Isolation Rooms	n/a	n/a	n/a	n/a	n/a	**n/a**
Decontamination Rms	n/a	n/a	n/a	n/a	n/a	**n/a**
Pharmacy Spaces	4	4	4	4	4	**4**
Laboratory Spaces	n/a	n/a	n/a	n/a	n/a	**n/a**
Operating Rooms	n/a	n/a	n/a	n/a	n/a	**n/a**

Building Performance	Red Bricks	Noyes/Hill/ Sullivan	White Building	Smith	Tawes	Average
Indoor Air Quality						
Tobacco Smoke	2	2	2	4	4	**2.8**
Ventilation	2	1	2	4	2	**2.2**
Filtration	1	1	2	2	2	**1.6**
Pressurization	2	1	4	2	4	**2.6**
Infection Control	4	4	4	4	4	**4**
Thermal Comfort						
Building Envelope	2	2	2	1	2	**1.8**
Windows	1	2	2	1	2	**1.6**
Heating Cooling Systems	2	2	2	2	2	**2**
Acoustics						
Patient Rooms	4	4	4	4	4	**4**
Public Areas	2	2	2	2	2	**2**
Energy Efficiency						
Electric	2	2	2	2	2	**2**
Fuel Use	4	4	4	4	4	**4**
Visual Comfort						
Interior Light levels	2	2	2	4	4	**2.8**
Patient Access to daylight	4	4	4	4	4	**4**
Glare Issues	4	4	4	4	4	**4**
On-Site Renewable Energy	n/a	n/a	n/a	n/a	n/a	**n/a**

Water	Red Bricks	Noyes/Hill/ Sullivan	White Building	Smith	Tawes	Average
Water Distribution	2	2	2	2	2	**2**
Sewer and Plumbing Systems	2	2	2	2	2	**2**
Water Heating	4	4	4	4	4	**4**
Stormwater Management						
Drainage	4	1	4	4	4	**3.4**
Exterior Potable Water Use						
Irrigation	n/a	n/a	n/a	n/a	n/a	**n/a**
Cooling Tower Makeup	n/a	n/a	n/a	2	n/a	**2**
Interior Potable Water						
Domestic Uses	1	1	1	1	1	**1**
Equipment Cooling	n/a	n/a	n/a	n/a	n/a	**n/a**
Food Waste	2	2	2	2	2	**2**

Sites						
Light Pollution	4	4	4	4	4	**4**
Places of Respite	2	2	2	2	2	**2**
Hardscape	2	2	2	2	2	**2**

O&M	Red Bricks	Noyes/Hill/ Sullivan	White Building	Smith	Tawes	Average
Pest Control	2	2	2	2	2	**2**
Snow						
Removal	4	4	4	4	4	**4**
Intake						
Cleaning Practices	2	2	2	2	2	**2**
Material Purchasing						
Food	4	4	4	4	4	**4**
Lamps						
Consumables	4	4	4	4	4	**4**
Durable Goods	4	4	4	4	4	**4**
Solid Waste Management	3	3	3	3	3	**3**

Springfield Hospital Center

Infrastructure	Priority
Central Heating Systems	4
Capacity	4
Redundancy	4
Condition	4
Central Cooling Systems	4
Capacity	4
Redundancy	4
Condition	4
Emergency Power/Generators	4
Capacity	4
Redundancy	4
Condition	4
Refrigerant Management	5
Air handling Systems	4
Capacity	4
Redundancy	4
Condition	4
Unique Space Types	n/a
Isolation Rooms	n/a
Decontamination Rms	n/a
Pharmacy Spaces	n/a
Laboratory Spaces	n/a
Operating Rooms	n/a

Building Performance	Priority
Indoor Air Quality	4
Tobacco Smoke	n/a
Ventilation	4
Filtration	n/a
Pressurization	n/a
Thermal Comfort	4
Building Envelope	4
Windows	4
Heating Cooling Systems	4
Acoustics	4
Patient Rooms	4
Public Areas	4
Energy Efficiency	4
Electric	4
Fuel Use	4
Visual Comfort	4
Interior Light levels	4
Patient Access to daylight	4
Glare Issues	4
On-Site Renewable Energy	n/a

Water	Priority
Water Distribution	4
Sewer and Plumbing Systems	4
Water Heating	4
Stormwater Management	4
Drainage	4
Exterior Potable Water Use	4
Irrigation	4
Cooling Tower Makeup	4
Interior Potable Water	4
Domestic Uses	4
Equipment Cooling	4
Food Waste	n/a

O&M	Priority
Pest Control	4
Snow	4
Removal	4
Intake	4
Cleaning Practices	4
Material Purchasing	4
Food	4
Lamps	4
Consumables	4
Durable Goods	4
Solid Waste Management	4

Sites	Priority
Light Pollution	3
Places of Respite	3
Hardscape	3

Clifton T. Perkins Hospital Center

Infrastructure	Priority
Central Heating Systems	3
Capacity	3
Redundancy	2
Condition	2
Central Cooling Systems	3
Capacity	3
Redundancy	3
Condition	3
Emergency Power/Generators	3
Capacity	2
Redundancy	3
Condition	3
Refrigerant Management	3
Air handling Systems	2
Capacity	3
Redundancy	2
Condition	2
Unique Space Types	4
Isolation Rooms	4
Decontamination Rms	4
Pharmacy Spaces	2
Laboratory Spaces	n/a
Operating Rooms	n/a

Building Performance	Priority
Indoor Air Quality	3
Tobacco Smoke	n/a
Ventilation	3
Filtration	3
Pressurization	3
Thermal Comfort	3
Building Envelope	3
Windows	2
Heating Cooling Systems	2
Acoustics	3
Patient Rooms	3
Public Areas	3
Energy Efficiency	2
Electric	2
Fuel Use	2
Visual Comfort	2
Interior Light levels	2
Patient Access to daylight	1
Glare Issues	1
On-Site Renewable Energy	2

Water	Priority
Water Distribution	2
Sewer and Plumbing Systems	1
Water Heating	1
Stormwater Management	3
Drainage	3
Exterior Potable Water Use	3
Irrigation	4
Cooling Tower Makeup	3
Interior Potable Water	2
Domestic Uses	3
Equipment Cooling	2
Food Waste	1

O&M	Priority
Pest Control	1
Snow	3
Removal	3
Intake	3
Cleaning Practices	3
Material Purchasing	3
Food	3
Lamps	3
Consumables	3
Durable Goods	3
Solid Waste Management	4

Sites	Priority
Light Pollution	4
Places of Respite	4
Hardscape	4

Thomas B. Finan Center

Infrastructure	Priority
Central Heating Systems	4
Capacity	4
Redundancy	2
Condition	4
Central Cooling Systems	4
Capacity	4
Redundancy	4
Condition	4
Emergency Power/Generators	4
Capacity	4
Redundancy	4
Condition	4
Refrigerant Management	4
Air handling Systems	4
Capacity	4
Redundancy	4
Condition	4
Unique Space Types	4
Isolation Rooms	4
Decontamination Rms	4
Pharmacy Spaces	4
Laboratory Spaces	4
Operating Rooms	4

Building Performance	Priority
Indoor Air Quality	4
Tobacco Smoke	4
Ventilation	4
Filtration	4
Pressurization	4
Thermal Comfort	4
Building Envelope	4
Windows	4
Heating Cooling Systems	4
Acoustics	4
Patient Rooms	4
Public Areas	4
Energy Efficiency	4
Electric	4
Fuel Use	4
Visual Comfort	4
Interior Light levels	4
Patient Access to daylight	4
Glare Issues	4
On-Site Renewable Energy	4

Water	Priority
Water Distribution	4
Sewer and Plumbing Systems	4
Water Heating	4
Stormwater Management	4
Drainage	1
Exterior Potable Water Use	4
Irrigation	4
Cooling Tower Makeup	4
Interior Potable Water	4
Domestic Uses	4
Equipment Cooling	4
Food Waste	4

O&M	Priority
Pest Control	4
Snow	4
Removal	4
Intake	4
Cleaning Practices	4
Material Purchasing	4
Food	4
Lamps	4
Consumables	4
Durable Goods	4
Solid Waste Management	4

Sites	Priority
Light Pollution	4
Places of Respite	4
Hardscape	2

Eastern Shore Hospital Center

Infrastructure	Priority
Central Heating Systems	
Capacity	4
Redundancy	4
Condition	4
Central Cooling Systems	
Capacity	4
Redundancy	4
Condition	4
Emergency Power/Generators	
Capacity	4
Redundancy	4
Condition	4
Refrigerant Management	
Air handling Systems	
Capacity	4
Redundancy	4
Condition	4
Unique Space Types	
Isolation Rooms	5
Decontamination Rms	5
Pharmacy Spaces	4
Laboratory Spaces	5
Operating Rooms	5

Building Performance	Priority
Indoor Air Quality	
Tobacco Smoke	5
Ventilation	4
Filtration	5
Pressurization	5
Thermal Comfort	
Building Envelope	4
Windows	4
Heating Cooling Systems	4
Acoustics	
Patient Rooms	4
Public Areas	4
Energy Efficiency	
Electric	4
Fuel Use	4
Visual Comfort	
Interior Light levels	4
Patient Access to daylight	4
Glare Issues	4
On-Site Renewable Energy	4

Water	Priority
Water Distribution	4
Sewer and Plumbing Systems	4
Water Heating	4
Stormwater Management	4
Drainage	4
Exterior Potable Water Use	
Irrigation	4
Cooling Tower Makeup	5
Interior Potable Water	
Domestic Uses	4
Equipment Cooling	4
Food Waste	4

O&M	Priority
Pest Control	4
Snow	
Removal	4
Intake	4
Cleaning Practices	4
Material Purchasing	
Food	4
Lamps	4
Consumables	4
Durable Goods	4
Solid Waste Management	4

Sites	Priority
Light Pollution	4
Places of Respite	4
Hardscape	4

Appendix C. State Psychiatric Hospital Profiles

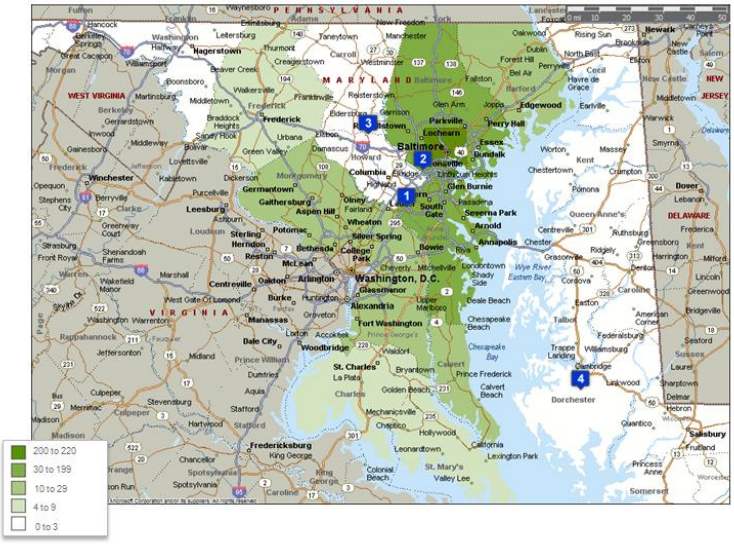
Spring Grove Hospital Center

Spring Grove Hospital Center is a Mental Hygiene Administration inpatient psychiatric facility located in Catonsville, Maryland. Spring Grove was founded in 1797 and is now the second oldest continuously operating psychiatric hospital in the United States. The facility operates 351 inpatient beds, 50 assisted living beds and a 24-bed domicile in a Secured Post Evaluation Forensic Unit. The facility provides acute, sub-acute, long term, and residential care to adolescents, adult and geriatric individuals. Specifically, several units at Spring Grove provide specialized services, including an Adolescent Unit, Treatment Research Unit and a Medical/Psychiatric Unit designed to provide care to individuals who suffer from medical illnesses. The campus also is home to the Maryland Psychiatric Research Center, which is part of the University of MD School of Medicine and is noted for its research into serious psychiatric diseases.

Mission: To provide quality mental health services to the citizens of Maryland in a progressive and responsible manner, consistent with recognized standards of care.

Vision: Spring Grove Hospital will be recognized as a national leader for excellence in psychiatric care, research and education.

Spring Grove Patient Origin, Admissions FY2011 by ZIP Code



County	FY11 Admissions	% Mix
Baltimore City	210	48%
Baltimore County	71	16%
Anne Arundel	47	11%
Montgomery	27	6%
Harford	15	3%
Calvert	13	3%
Prince George's	12	3%
Other	46	10%
Grand Total	**441**	**100%**

1. Clifton T. Perkins Hospital Center
2. Spring Grove Hospital Center
3. Springfield Hospital Center
4. Eastern Shore Hospital Center

Spring Grove Interview and Observations Key Themes

Facilities

- Little private space available as patient care buildings offer a combination of private, dormitory-style and semi-private rooms.

Integration and Alignment

- Challenge in accommodating all patients referred by the Mental Health Courts and creating aftercare plans to satisfaction of judges.
- Closure of ALU expected to have significant impact on admissions and discharges.
- Shortage of residential rehabilitation program beds, causing delay in discharge
- Few programs for public education and community awareness.
- Tighter coordination required in overseeing referrals; disconnects between pretrial screenings and circuit courts, mental health probation officers and MHA.

Operations and Capabilities

- Spring Grove has the only adolescent unit in the system; however, this unit remains generally at 50% capacity.

Growth

- Substantial increase in forensic population, as well as rise in older individuals.
- Need for additional nursing, psychiatrist and Social Work resources, particularly as 45% of current staff eligible for retirement in the next five years
- 66% of staff are ages 45 and above while only 12% of Spring Grove staff is between the ages of under 25 to 35.
    - Number of staff works overtime to supplement salaries.
    - High turnover rate with direct care workers; expected to increase as economy improves.

Spring Grove Admission Demographics, FY10-FY11

Population	FY10	FY11	FY11 % Mix
Adolescents	72	89	20%
Adults	425	335	76%
Geriatrics	10	17	4%
Female	115	109	25%
Male	392	332	75%
Forensic	392	349	79%
Pretrial Evaluation	250	233	53%
NGRI/NCR	83	52	12%
IST	35	46	10%
Charges/ Convicted	24	18	4%
Involuntary-Civil	56	40	9%
Voluntary-Self & Others	59	52	12%
Dual Diagnosis*	167	147	33%
Med/Psych Diagnosis	207	231	52%
SMI or SED	358	373	85%
IP Readmissions**	122	128	29%
ALU Admissions	212	187	n/a

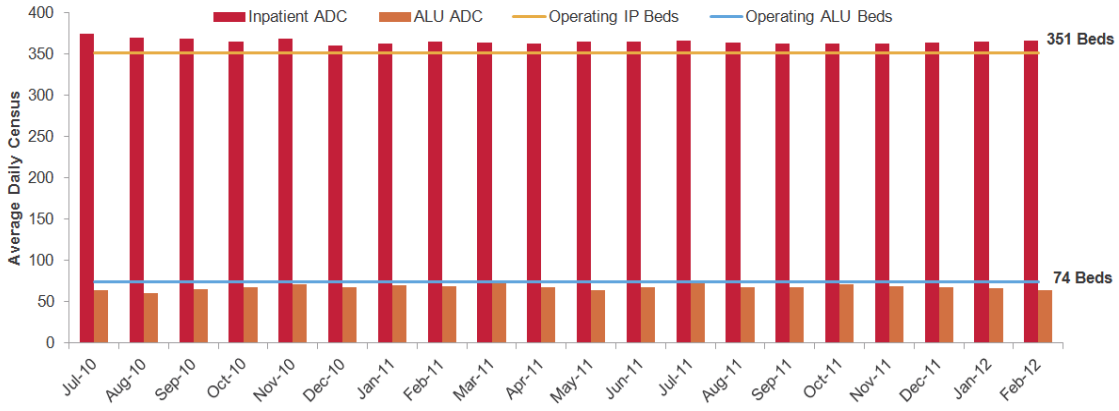
**Dual Diagnosis = Psychiatric diagnosis and substance abuse diagnosis. **Readmissions refer to admissions made by individuals with prior admission to state psychiatric hospital. ALU = Assisted Living Unit. All fields exclude "Unknown" classification. Med/Psych Diagnosis refers to admissions with a diagnosis in the "medical diagnosis 1" field. FY2012 YTD = July 2011-Feb 2012.*

Spring Grove Inpatient ADP & Occupancy Rates

Fiscal Year	Inpatient ADP	Operating IP Beds	Max IP ADP	Avg IP Occupancy
2010	377	375	388	101%
2011	366	351	375	104%
2012 YTD	364	351	366	104%

Spring Grove ALU ADP & Occupancy Rates

Fiscal Year	ALU ADP	Operating ALU Beds	Max ALU ADP	Avg ALU Occupancy
2010	66	74	78	89%
2011	67	74	73	91%
2012 YTD	68	74	73	92%



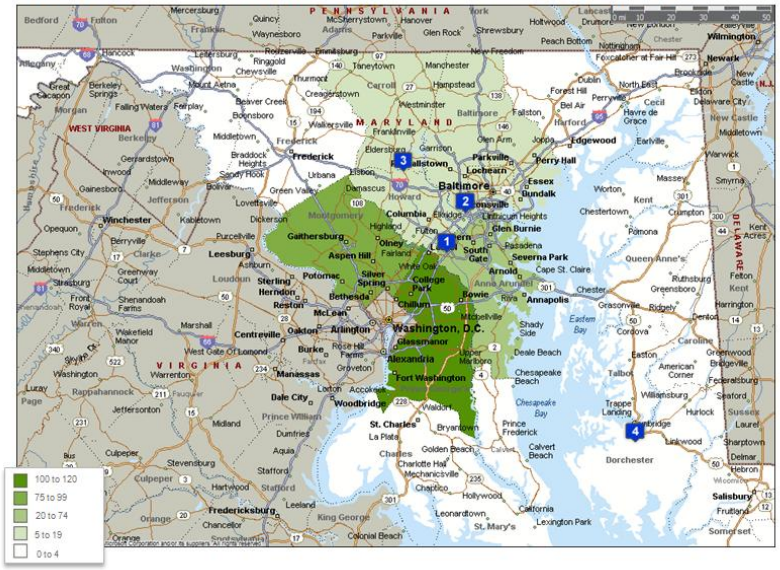
Springfield Hospital Center

Springfield Hospital Center is a state operated psychiatric facility in Carroll County that provides acute, sub-acute, and long term inpatient services for residents throughout the entire State. Support services are provided to Shoemaker House, a forty (40) bed alcohol and drug abuse rehabilitation program, operated by a for-profit organization; and the Secure Evaluation and Therapeutic Treatment Program (SETT), a twenty-two (22) bed, DDA operated, Forensic unit located on the grounds.

Mission: "*Together we get better*" by providing highly specialized, interdisciplinary services tailored to meet the complex needs of patients through safe, effective care; by fostering recovery and community reintegration; by offering mental health training and teaching programs committed to professional development, continuous learning and improvement; and by being a progressive force in the mental health community.

Vision: Excellence in recovery-oriented mental health treatment. As a progressive force in the mental health community, Springfield is measurably dedicated to providing safe, high quality patient care through its passion for continuous learning and improvement.

Springfield Patient Origin, Admissions FY2011 by ZIP Code



County	FY11 Admissions	% Mix
Prince George's	110	33%
Montgomery	95	29%
Anne Arundel	41	12%
Baltimore City	19	6%
Howard	17	5%
Carroll	15	5%
Baltimore County	11	3%
Other	22	7%
Grand Total	**330**	**100%**

1. Clifton T. Perkins Hospital Center
2. Spring Grove Hospital Center
3. Springfield Hospital Center
4. Eastern Shore Hospital Center

Springfield Interview and Observations Key Themes

Facilities

- Significant challenges with maintenance of buildings (average age of buildings is 70 years) in conjunction with shrinking budget.
- Little private space available as inpatient buildings offer combination of private, dormitory-style and semi-private rooms.

Integration and Alignment

- Breadth of rehab services offered, including vocational training and new program at Spring Café.
- Need for cognitive behavioral therapy and resources for the developmentally disabled.

Operations and Capabilities

- High occupancy rate and inability to secure available beds.
- Difficulty in discharging patients based on previous history and nature of committed crimes.

Growth

- Biggest driver of volumes is Prince George's county; second biggest driver is Montgomery.
- Patient population reflects demographics of counties served.

- Incompetent to Stand Trial (IST) patients have increased dramatically as a percentage of mix in the last ten years, while growth of Not Criminally Responsible (NCR) patients has slowed.
- Recruitment and retention is challenging; flexible work schedule offered as a tool for retention.

Springfield Admission Demographics, FY10-FY11

Population	FY10	FY11	FY11 % Mix
Adults	341	318	96%
Geriatrics	5	12	4%
Female	90	88	27%
Male	256	242	73%
Forensic	268	270	82%
Pretrial Evaluation	6	3	1%
NGRI/NCR	47	34	10%
IST	175	201	61%
Charges/ Convicted	40	32	10%
Involuntary-Civil	33	27	8%
Voluntary-Self	45	32	10%
Dual Diagnosis*	156	137	42%
Med/Psych Diagnosis	276	264	80%
IP Readmissions**	130	123	37%
ALU Admissions	84	61	n/a

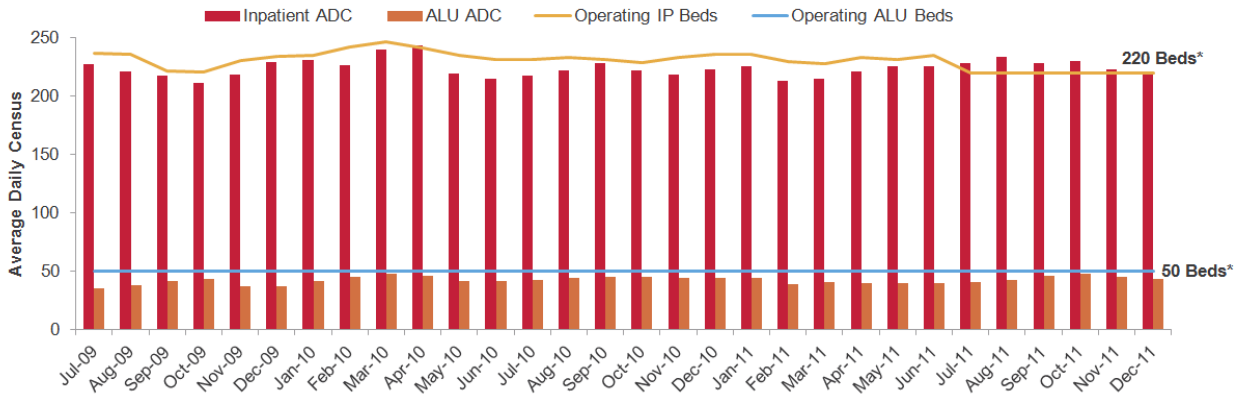
**Dual Diagnosis = Psychiatric diagnosis and substance abuse diagnosis. **Readmissions refer to admissions made by individuals with prior admission to state psychiatric hospital. ALU = Assisted Living Unit. All fields exclude "Unknown" classification. Med/Psych Diagnosis refers to admissions with a diagnosis in the "medical diagnosis 1" field. FY2012 YTD = July 2011-Feb 2012.*

Springfield Inpatient ADP & Occupancy Rates

Fiscal Year	Inpatient ADP	Operating IP Beds**	Max IP ADP	Avg IP Occupancy
2010	226	234	243	97%
2011	222	232	228	96%
2012 YTD*	226	220*	234	103%

Springfield ALU ADP & Occupancy Rates

Fiscal Year	ALU ADP	Operating ALU Beds	Max ALU ADP	Avg ALU Occupancy
2010	42	50	48	84%
2011	43	50	45	86%
2012 YTD*	44	50*	48	88%



**FY2012 YTD = July 1, 2011 to Jan 31, 2012. Springfield records 230 operating IP beds and 40 ALU beds; DHMH HMIS report dated July 1, 2011 to January 31, 2012 reports 220 operating IP beds and 50 ALU beds. **Operating IP Beds calculated as monthly average. Note: ADC = average daily census; Average occupancy = ADC/ operating beds; IP = inpatient. Assisted Living Units (ALU) include STARR and Gateway.*

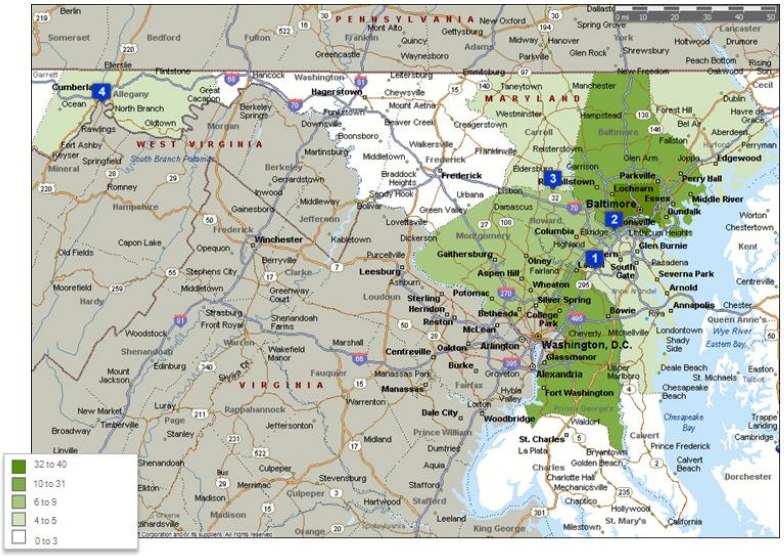
Clifton T. Perkins Hospital Center

Clifton T. Perkins Hospital Center (CTPHC) is a maximum security psychiatric inpatient hospital in Jessup, Maryland. The hospital opened in 1959 and was renovated in 1995 and 2010. CTPHC provides treatment to offenders who have been adjudicated NCR and/or Incompetent to Stand Trial (IST) and accepts, by transfer, felony inmates from correctional facilities who meet the criteria for involuntary commitment . Additionally, CTPHC accepts patients from other State Regional Psychiatric Hospitals whose behavior is violent and aggressive.

Mission: The mission of CTPHC is to perform timely pretrial evaluations of defendants referred by the judicial circuit of Maryland, provide quality assessment of and treatment for all patients, and provide maximum security custody of patients to ensure public safety.

Vision: The Vision of Perkins is to be a premier forensic psychiatric hospital that provides effective and efficient assessment and treatment to psychiatric patients who require hospitalization within a secure environment.

CTPHC Patient Origin, FY2011 Admissions by County



County	FY11 Admissions	% Mix
Baltimore City	36	32%
Prince George's	13	12%
Baltimore County	12	11%
Montgomery	9	8%
Howard	9	8%
Anne Arundel	5	4%
Harford	5	4%
Allegany	4	4%
Carroll	4	4%
Other	15	13%
Grand Total	**112**	**100%**

1. Clifton T. Perkins Hospital Center
2. Spring Grove Hospital Center
3. Springfield Hospital Center
4. Thomas B. Finan Hospital Center

Clifton T. Perkins Interview and Observations Key Themes

Facilities

- Three levels of care are available, including seven maximum security units, two medium security units and one minimum security unit. Patient assignment to levels is based on a variety of factors, including response to treatment, peer and staff interaction and outcomes of clinical assessment.
- Need for space to accommodate staff space for additional positions and on-unit clinical offices
- Need for additional medium security units, rehab areas, comfort rooms and on-unit quiet areas
- As geriatric patient population grows, environment of care will need to be modified to accommodate geriatric population-assistive devices

Integration and Alignment

- Opportunity to work with courts and legislature to ensure individuals who do not need hospitalization can be returned to court in a timely manner after their evaluations.

Operations and Capabilities

- Reduced use of seclusion and restraint, with concurrent decrease in staff and patient injuries.
- Fewer issues with contraband in recent history
- Delays in returning defendants to court after evaluation

- Stated need for greater staff competency to handle diverse patient types, such as medical needs of geriatric patients
- Over capacity on a daily basis.

Growth

- Staffing shortages cited as a key issue; however the State has planned for funding to be made available for 93 total positions.
- Recruitment and retention is challenging, but proximity to key urban areas provides a draw for potential candidates.
- Access to CTPHC also difficult for many employees
- Incompetent to Stand Trial (IST) has grown from 10-15% of the patient mix to almost 50%.

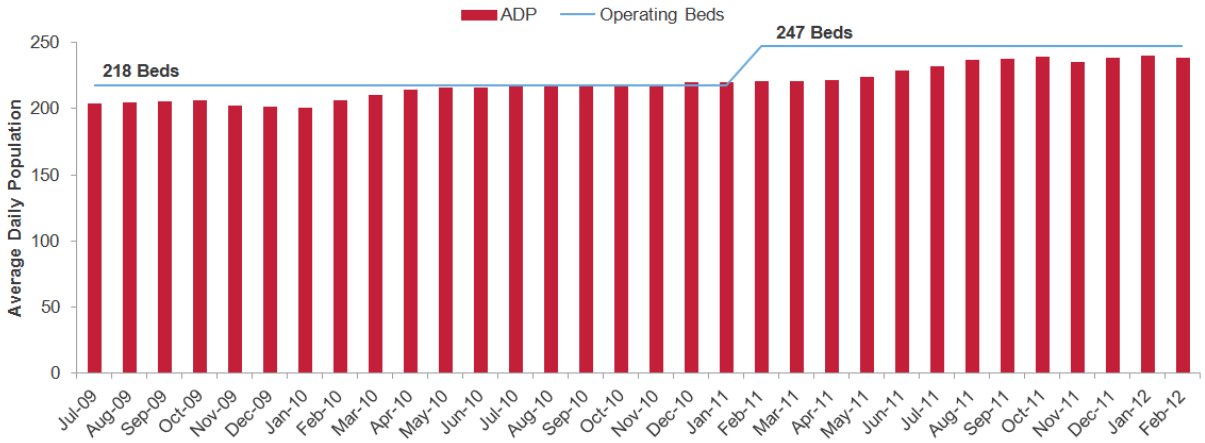
Perkins Admission Demographics, FY10-FY11

Population	FY10	FY11	FY11 % Mix
Adults	102	108	96%
Geriatrics	3	4	4%
Female	18	16	14%
Male	87	96	86%
Forensic	92	101	90%
Pretrial Evaluation	51	57	51%
NGRI/NCR	25	22	20%
IST	6	14	13%
Charges/ Convicted	11	12	11%
Involuntary-Civil	11	10	9%
Voluntary-Self	2	1	1%
Dual Diagnosis*	45	57	51%
Med/Psych Diagnosis	54	43	38%
IP Readmissions**	29	17	15%
SMI or SED	79	86	77%

**Dual Diagnosis = Psychiatric diagnosis and substance abuse diagnosis. **Readmissions refer to admissions made by individuals with prior admission to state psychiatric hospital. All fields exclude "Unknown" classification. Med/Psych Diagnosis refers to admissions with a diagnosis in the "medical diagnosis 1" field. FY2012 YTD = July 2011-Feb 2012.*

C. T. Perkins Inpatient ADP & Occupancy Rates

Fiscal Year	ADP	Avg Operating Beds	Max ADP	Avg Occupancy
2010	207	218	216	95%
2011	221	230	231	96%
2012 YTD	236	247	240	96%



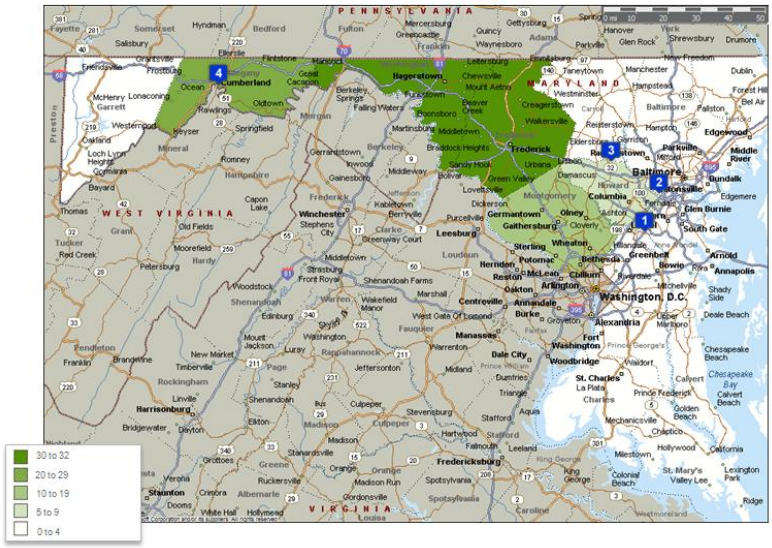
Thomas B. Finan Center

The Thomas B. Finan Center, located in Cumberland, Maryland is a state-operated inpatient psychiatric hospital. Ancillary services are provided to the Massie Unit (25-bed cottage for in-patient treatment of alcohol and drug addiction), the Jackson Unit (1 cottage for children in need of supervision and 1 cottage for juvenile drug offenders), and the Brandenburg Center (50-bed facility operated by the Department of Developmental Disabilities Administration).

Mission: To provide as comprehensive an array as possible of safe and efficient mental health services to all patients admitted.

Vision: To figure prominently in the consumer-centered mental health care delivery system envisioned by the Mental Hygiene Administration, providing comprehensive services for the chronically mentally ill as part of a continuum of care that will accommodate needs ranging from long-term hospital to occasional community support, and that will emphasize case management, consumer choice and community education.

Finan Center Patient Origin, Admissions FY2011 by County



County	FY11 Admissions	% Mix
Washington	31	26%
Frederick	31	26%
Allegany	28	24%
Montgomery	14	12%
Howard	6	5%
Other	7	6%
Grand Total	**117**	**100%**

1. Clifton T. Perkins Hospital Center
2. Spring Grove Hospital Center
3. Springfield Hospital Center
4. Thomas B. Finan Center

Thomas B. Finan Center Interview and Observations Key Themes

Facilities

- Pod design on each inpatient unit hinders visibility for staff and patient placement for different genders (unable to mix male and female pods for safety and privacy).
- Units not designed for forensic population; layout consistent with assisted living or community living concept.
- Number of facility priorities have been sitting in the DHMH queue for 5 to 8 years.

Integration and Alignment

- Opportunity to provide more education and training using teleconferencing and online training.
- Collegial relationship with the core service agencies and mutual commitment.

Operations and Capabilities

- Generally are able to move patients out of the inpatient units, with the exception of individuals charged with sex offense.
- Admission units frequently at 95% occupancy.

Growth

- Biggest challenge is providing quality care with fewer resources.

- Staff maintains clinical quality and performance by providing items out of their own pockets or working overtime.
- Physician and staff recruitment difficult due to rural location and lack of funding.
- Transportation is a major challenge with the discontinuation of the Greyhound route to their area.

Finan Center Admission Demographics, FY10-FY11

Population	FY10	FY11	FY11 % Mix
Adults	119	108	92%
Geriatrics	4	9	8%
Female	43	42	36%
Male	79	74	64%
Forensic	42	50	43%
Pretrial Evaluation	17	27	23%
NGRI/NCR	7	8	7%
IST	2	5	4%
Charges/ Convicted	16	10	9%
Involuntary-Civil	41	44	38%
Voluntary-Self & Others	40	23	20%
Dual Diagnosis*	56	34	29%
Med/Psych Diagnosis	99	88	75%
SMI or SED	123	80	68%
IP Readmissions**	27	30	26%
ALU Admissions	45	41	n/a

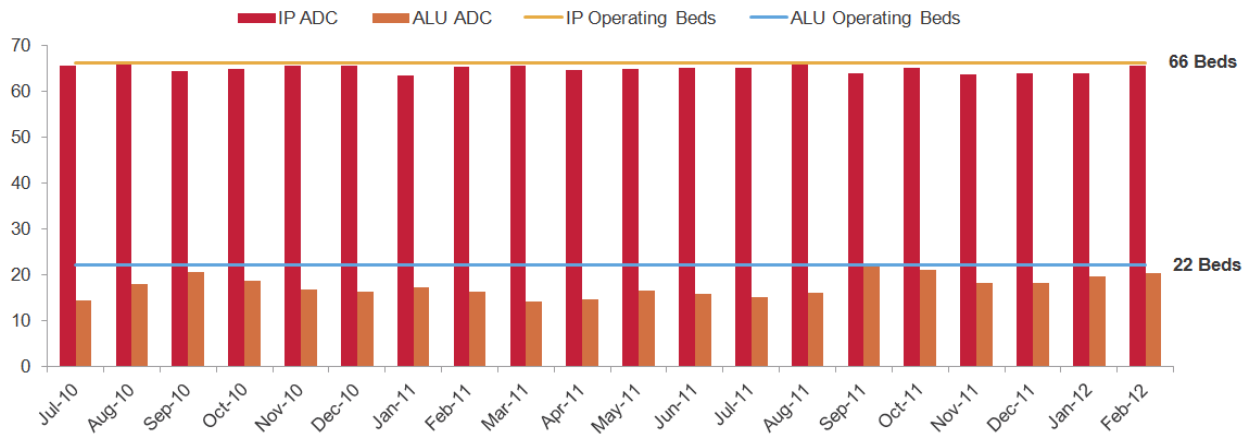
**Dual Diagnosis = Psychiatric diagnosis and substance abuse diagnosis. **Readmissions refer to admissions made by individuals with prior admission to state psychiatric hospital. ALU = Assisted Living Unit. All fields exclude "Unknown" classification. Med/Psych Diagnosis refers to admissions with a diagnosis in the "medical diagnosis 1" field. FY2012 YTD = July 2011-Feb 2012.*

Finan Center Inpatient ADP & Occupancy Rates

Fiscal Year	Inpatient ADP	Operating IP Beds	Max IP ADP	Avg IP Occupancy
2010	65	66	68	98%
2011	65	66	68	98%
2012 YTD	65	66	66	98%

Finan Center ALU ADP & Occupancy Rates

Fiscal Year	ALU ADP	Operating ALU Beds	Max ALU ADP	Avg ALU Occupancy
2010	16	22	20	73%
2011	17	22	22	77%
2012 YTD	19	22	22	86%



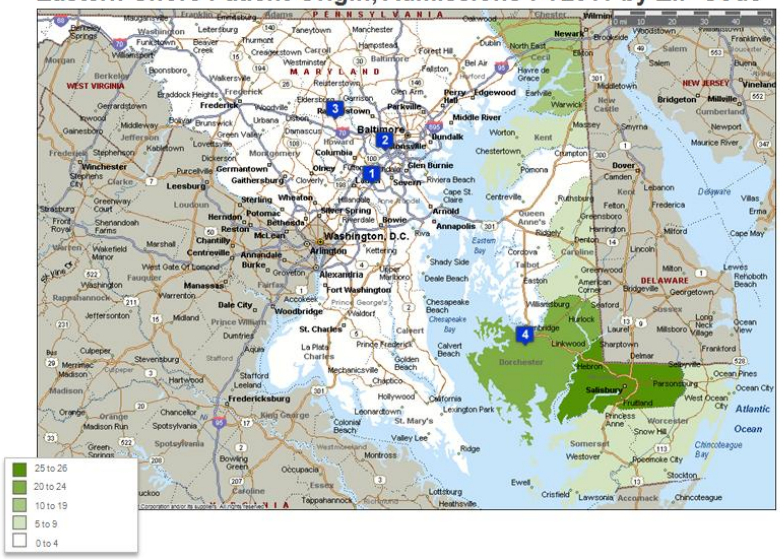
Eastern Shore Hospital Center

Eastern Shore Hospital Center provides acute and long-term psychiatric services to citizens of Maryland. It is the aim of the hospital to minimize disability, coordinate continuity of care within the community, and achieve these as economically as possible.

Mission: The mission of the Eastern Shore Hospital Center is to provide residents with high quality hospital-based and community-linked mental health services.

Vision: To help patients reduce their need for hospital services by: providing intensive multi-disciplinary, short-term treatment; developing more focused treatment for the patients with increasingly complex needs who have required continued long-term hospitalization; building a better partnership with the community system through staff interaction, teaching, consultation, and sharing programs to prevent relapse; energizing staff to accomplish our mission by training in the principles of continuous quality improvement; and utilizing the latest technology and specialty programming.

Eastern Shore Patient Origin, Admissions FY2011 by ZIP Code



County	FY11 Admissions	% Mix
Wicomico	26	25%
Dorchester	20	17%
Cecil	17	16%
Caroline	8	8%
Kent	7	7%
Somerset	5	5%
Worcester	5	5%
Talbot	4	5%
Other	14	13%
Grand Total	**106**	**100%**

1. Clifton T. Perkins Hospital Center
2. Spring Grove Hospital Center
3. Springfield Hospital Center
4. Eastern Shore Hospital Center

Eastern Shore Hospital Center Interview and Observations Key Themes

Facilities

- Newest state psychiatric facility, inpatient units would benefit from additional of private interview rooms on-unit with direct lines of sight from nurse stations, discreet staff entries onto units into communication center, and back-of-house team center space for private staff clinical conversations and clinical planning

Integration and Alignment

- Community resources for transitional housing post-discharge available through local not-for-profit organizations.
- Historically conservative with discharge planning. Philosophy is that no patient is discharged to a shelter.
- Need for more transitional therapy.

Operations and Capabilities

- Despite recent leadership turnover, facility has managed transition without affecting patient care.
- Focus on safety initiatives and in balancing needs of environment to be both therapeutic and safe.
    - Patient-to-patient and-patient-to-staff assaults have declined in the last few years.
    - Increased vigilance by reducing time between observation rounds from 30 to 15 minutes.
    - Drove down length of seclusion.

Growth

- Significant impact from closure of Upper Shore institution, particularly in reducing bed capacity in the region.
- Patient population has changed dramatically and shifted more to forensic.
- Difficulty in attracting younger staff.

Eastern Shore Admission Demographics, FY10-FY11

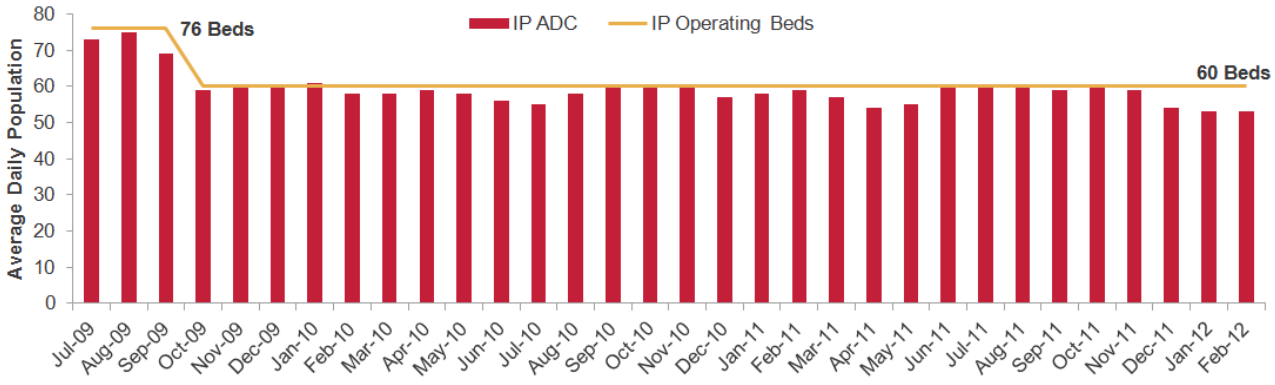
Population	FY10	FY11	FY11 % Mix
Adults	69	101	95%
Geriatrics	5	5	5%
Female	22	28	26%
Male	52	78	74%
Forensic	45	70	66%
Pretrial Evaluation	17	22	21%
NGRI/NCR	6	16	15%
IST	6	12	11%
Charges/ Convicted	16	20	19%
Involuntary-Civil	5	13	12%
Voluntary-Self	24	23	22%
Dual Diagnosis*	24	41	39%
Med/Psych Diagnosis	43	78	74%
SMI or SED	58	85	80%

**Dual Diagnosis = Psychiatric diagnosis and substance abuse diagnosis. **Readmissions refer to admissions made by individuals with prior admission to state psychiatric hospital. All fields exclude "Unknown" classification. Med/Psych Diagnosis refers to admissions with a diagnosis in the "medical diagnosis 1" field. FY2012 YTD = July 2011-Feb 2012.*

Eastern Shore Inpatient ADP & Occupancy Rates

Fiscal Year	Inpatient ADP	Operating IP Beds	Max IP ADP	Avg IP Occupancy
2010	62	60	77	103%
2011	58	60	63	97%
2012 YTD	58	60	63	97%

Eastern Shore Inpatient ADP, FY10-FY11



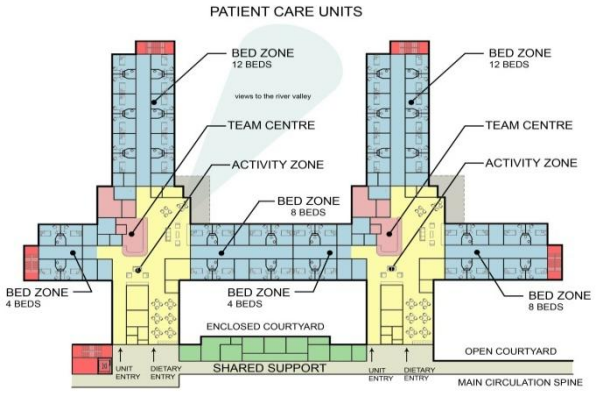
Appendix D. Facility Case Studies

Case Study 1: Saskatchewan Hospital North Battleford

Location: North Battleford, Saskatchewan Canada
Construction Complete: 2015 (estimate)
Construction Cost: $150 million, 233,250 BGSF
Total Beds: 204
Forensic Beds: 48
Architect: Cannon Design Planning/Programming

Provincial Trends/ Movement:
- One provincial facility
- ALOS significantly above best practice
- Community placement upon discharge a challenge
- System blockages - acute care beds were blocked due to provincial facility discharge constraints

Building Architectural Description:
- Modular patient care units
- Transitional housing on site and at the 5 regional centers
- All private patient rooms with ensuite toilet/shower
- Centralized therapy mall area
- Teams support two units
- Building is sited to capture views of landscape/river from the patient care units



Case Study 2: Eastern State Hospital

Location: Lexington, Kentucky
Construction Complete: 2013
Construction Cost: $129 million
Total Beds: 239
Forensic Beds: 25
Architect: Smith Group & Arrasmith Judd Rapp

State Trends/ Movement:
- 4 state hospitals and 14 regional health centers
- One mental health court
- Community mental health programs (CMHP) still have funding/capacity issues
- Criminal Justice Linkages to services are strong (NAMI)
- Direct Intervention, Vital Early Response Treatment Systems (DIVERTS) program
- Crisis Intervention Team (CIT)
- Statewide jail triage system – receiving planning grants
- Shortages of psychiatrists/ psychologists

Building Architectural Description:
- 48 personal care/ transition beds on campus
- Units are 16 beds (3 to 4 stories tall)

Case Study 3: Bryce Hospital

Location: Tuscaloosa, Alabama
Construction Complete: Fall 2013
Construction Cost: $73 million, 225,000 sf
Total Beds: 268 long-term and forensic
Forensic Beds: Potential transition to all forensic
Architect: Sherlock Smith and Adams

State Trends/ Movement:
- 5 state hospitals
- 5 mental health courts
- Increased community support
  - Increased funding for crisis services and acute care to leverage federal funds
  - Probate Court Civil patients will be treated at area hospitals, community crisis centers, and use ACT teams
  - AltaPointe Community Partner increasing community beds
- Forensic inpatient focus/shift
  - Taylor Hardin Secure Mental Facility – 115 beds will move to new Bryce Hospital
  - Maintain Mary Starke Harper Geriatric Psychiatry Center: 96 beds mainly Medicare covered costs
  - North Alabama Regional Hospital – 80 beds
  - Closures - Searcy Hospital – 325 beds and Greil Memorial 76 beds
  - Increased funding for CIT

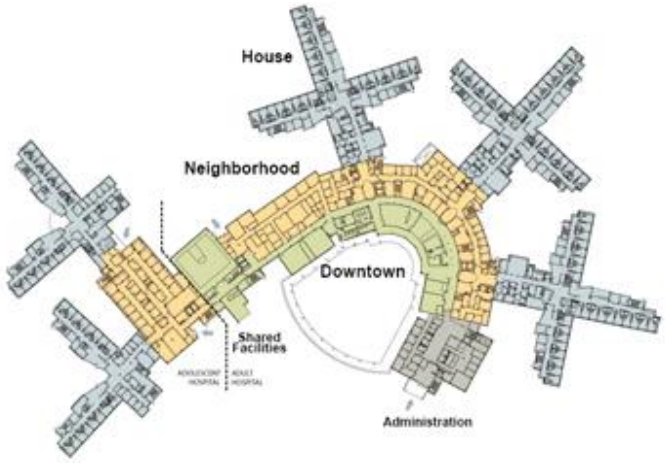
Case Study 4: Western State Hospital

Location: Staunton, Virginia
Construction Complete: 2013
Construction Cost: $125 million, 336,000 sf
Total Beds: 246
Forensic Beds: 56 to start
Architect: Cannon Design, BJU Architects

State Trends/ Movement:
- 11 state hospitals
- Strong ACT teams– 18 statewide
- 2009 - funding increase for community services over two years
- Statewide Criminal Justice Mental Health Consortium established by Governor's executive order in 2008
- Initiated statewide cross system mapping stakeholder workshops based on the Sequential Intercept Model
- Statewide development of CIT programs, post booking/pre-trial release programs, mental health courts, mental health dockets, jail in-reach teams, forensic discharge planners, CSB-PO collaboration, and re-entry programs

Building Architectural Description:
- Identical units – 28 beds each; all could become forensic in occupancy in the future
- All private beds
- Centralized courtyard wrapped by the building for secure access
- Therapy mall – flexibility to zone for varying patient populations

Case Study 5: Worcester Recovery Center And Hospital



Location: Worcester, Massachusetts
Construction Complete: 2012
Construction Cost: $302 million, 430,000 sf
Total Beds: 320 (260 Adult 60 Adolescent)
Forensic Beds: flexible from 30-90
Architect: Ellenzweig Associates

State Trends/ Movement:
- 2 state hospitals planned
- Tewksbury Hospital treats forensic patients – 130 beds
- % of forensic patient statistics are among highest in the nation (NAMI)
- DMH had planned for 740 total state beds but due to budget cuts is proposing 626
- Approved closure of Taunton State Hospital
- Three mental health courts
- Jail diversion programs in place

Building Architectural Description:
- 4 story building, 22 acre site
- Combine Worcester and Westboro hospitals (354 beds)
- All private patient rooms
- Pursuing LEED Gold certification

Case Study 6: Oregon State Hospital – Salem

Location: Salem, Oregon
Construction Complete: 2011
Construction Cost: $350 million, 700,000 sf
Total Beds: 620
Forensic Beds: 413 (14 units)
Architect: HOK and SRG Partnership

State Trends/ Movement:
- 2 state hospitals
- In 2010, 71% of inpatients statewide were forensic
- 33 CMHPs and specialty providers
- New Junction City Facility (360 beds and $100 million) construction is on hold with budget and discussion to increase community-based programs and decrease inpatient care
- State has added 525 mental health beds in the corrections system

Building Architectural Description:
- Renovated and incorporated the original Kirkbride building into the design
- Treatment mall
- 36 beds in 6 transitional housing units
- Delay opening of 4 wards due to lack of funding

Case Study 7: Saint Elizabeth's Hospital

Location: Washington, District of Columbia
Construction Complete: 2010
Construction Cost: $140 million, 450,000 sf
Total Beds: 293
Forensic Beds: 176
Architect: Einhorn Yaffee Prescott Architecture

State Trends/ Movement:
- 1 state hospital
- No formal Crisis Intervention Team (CIT) program
- Need to increase ACT teams (NAMI)
- Has implemented additional community housing programs

Building Architectural Description:
- Therapy mall model
- 28,000 sf green roof
- 1-2 story building (4 units are on upper level)
- 11 units total, seven of which are higher security
- Admissions suite
- Auditorium with use by the community
- Electronic medical records

Case Study 8: Eastern State Hospital

Location: Williamsburg, Virginia
Construction Complete: 2010
Total Beds: 270
Architect: Clark Nexen

State Trends/ Movement:
- 11 state hospitals
- Strong ACT Teams – 18 state wide
- 2009 - $42 million funding increase for community services over two years
- Facilities to discharge to is a challenge

Building Architectural Description:
- Three-phased plan to replace 9 campus buildings (2008 new 150 bed geriatric building, 2010 new adult mental health treatment center, future support services building)
- 6 transitional living units on campus with 20 beds each
- Beds wrap central activity and adjacent dining
- Therapy Mall

Case Study 9: Western Tennessee Mental Health Institute

Location: Bolivar, Tennessee
Construction Complete: 2010
Construction Cost: $56 million
Total Beds: 162
Architect: LRK and Hnedak Bobo

State Trends/ Movement:
- 5 state hospitals
- National Supportive Housing leader (NAMI)
- Has made some progress on jail diversion programs
- Workforce shortages
- 2006 75-bed Memphis Mental Health Institute constructed

Building Architectural Description:
- Three-story construction
- LEED Silver Certification
- Therapy mall

Case Study 10: Robert L. Hawkins High Security Institute

Location: Pueblo, Colorado – one new building on a campus
Construction Complete: 2009
Construction Cost: $50.5 million
Total Campus Beds: 450 (310 Forensic)
New Forensic Beds: 200 (Medium and Maximum Security)
Architect: H.W. Houston Construction

State Trends/ Movement:
- 2 state hospitals
- 17 Community Mental Health Programs (CMHP)
- 2 mental health courts and limited CIT programs
- Considering a second transitional housing building opening 2013

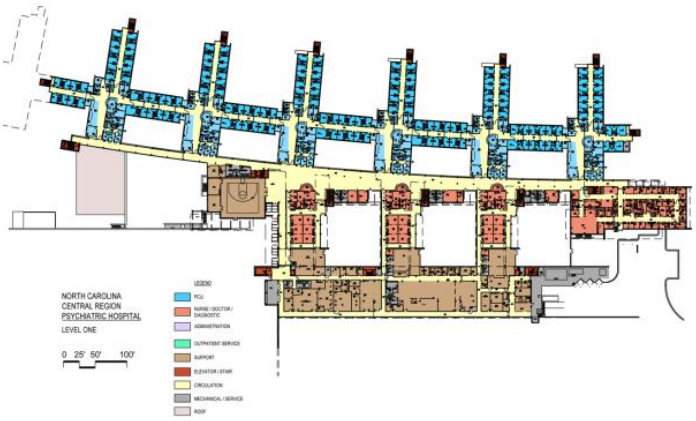
Building Architectural Description:
- 300-acre site, multiple buildings
- Treatment mall model
- Unit interior fit out changes from unit to unit to promote the sense of progression and transition

Case Study 11: North Carolina State

Location: Butner, North Carolina
Construction Complete: July 2008
Construction Cost: $110 million, 488,500 sf
Total Beds: 432
Forensic Beds: 72
Architect: Cannon Design, Freelon Group Inc.

State Trends/ Movement:
- 3 State Hospitals
- Post Incarceration Medicaid reinstatement
- Funding cuts to ACT services
- Local Management Entities to build local community services

Building Architectural Description:
- Modular patient care units
- Swing wings to allow for census changes/low staffing
- Central linking spine
- Therapy mall



Case Study 12: Coalinga State Hospital

Location: Coalinga, California
Construction Complete: 2005
Construction Cost: $314 million, 1.2 million sf
Total Beds: Final occupancy 1,500
Forensic Beds: Currently 950
Architect: KMD

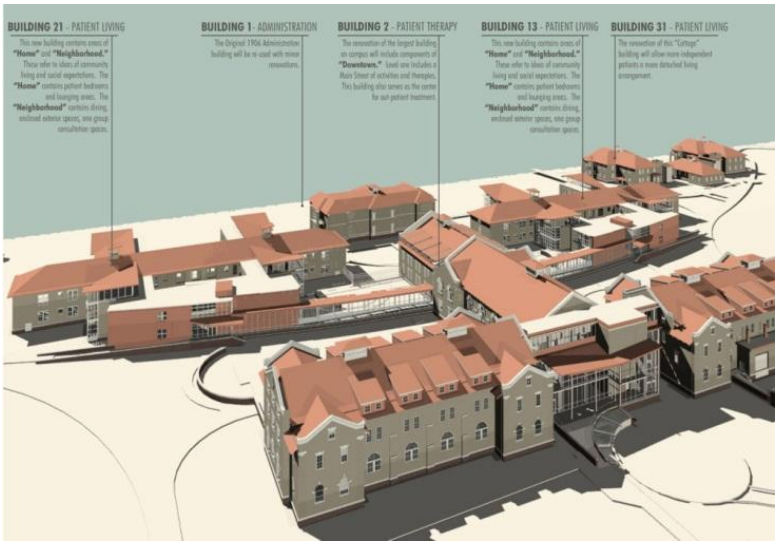
State Trends/ Movement:
- 5 state hospitals, 2 correctional facilities (one additional under construction)
- 58 Community Mental Health Programs (CMHP)
- 21 mental health courts
- 90% of state beds are used for forensics
- Interagency supportive housing program

Building Architectural Description:
- 320 acre site
- Houses mostly sexually violent predators
- Five-step treatment program

- Treatment Mall - gym, arts and crafts room, graphic design and woodworking

Case Study 13: Southeast Regional Treatment Center

Location: Madison, Indiana
Construction Complete: 2005
Construction Cost: $40 million, 96,000 sf new & 120,000 sf renovated
Total Beds: 150 (90 for mental health and 60 for developmental disability)
Architect: HOK & RATIO Architects



State Trends/ Movement:
- 5 state hospitals
- Increased CIT programs – 10 counties and four more planned
- Nationally-recognized Community Consumer Satisfaction Survey (NAMI)
- 26 Community Mental Health Services Programs (CMHSP)
- Lack of discharge community housing options
- Four mental health courts but post-booking jail diversion services are still lacking (NAMI)

Building Architectural Description:
- Site offered vistas of the Ohio river
- LEED certified
- Maintained the best of the older buildings and constructed new
- Mostly 15-bed units

Case Study 14: Center For Forensic Psychiatry

Location: Saline, Michigan
Construction Complete: 2005
Construction Cost: $93 million, 330,000 sf
Total Beds: 210
Forensic Beds: 210
Architect: US Corp

State Trends/ Movement:
- 3 state hospitals
- 46 Community Mental Health Programs
- Requires improvement of jail diversion system and expansion of mental health court system

Building Architectural Description:
- 100 acre site
- 4,000 annual court-ordered evaluations
- Four stories, eight 30-bed units
- Mix of private and semi-private rooms
- Three admission units and five intensive treatment units
- Treatment mall model - library, gym, fitness room, kitchen, activity rooms, a multipurpose room/chapel, music therapy, horticulture therapy and greenhouse

Case Study 15: Riverview Psychiatric Center

Location: Augusta, Maine
Construction Complete: 2004
Construction Cost: $22 million, 125,000 sf
Total Beds: 92 civil and forensic beds
Architect: JSN

State Trends/ Movement:

- 2 state hospitals (Dorothea Dix – 100 beds)
- Increased demand for forensic beds, NCR clients increased
- State may recommend that the two hospitals combine under one hospital umbrella with two campuses to help with staffing and operating costs
- CIT programs
- Co-occurring Substance Abuse and Mental Health Court
- Jail in-reach teams

Building Architectural Description:

- Maine's only forensic mental health hospital
- Four units – two civil and two forensic
- Private patient rooms and toilet rooms
- ALOS of 90 days

Appendix E. Community Strategies Case Studies

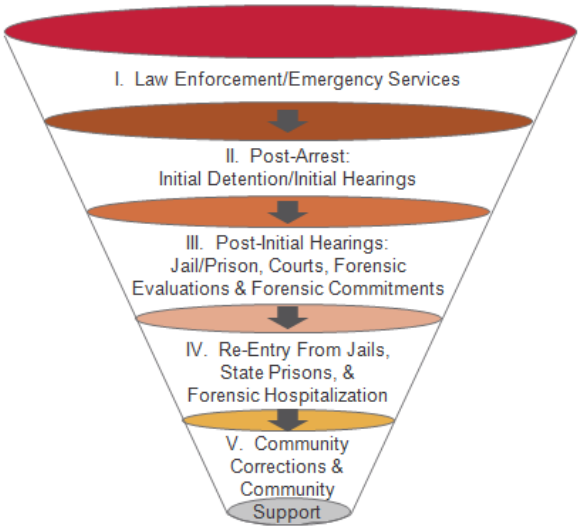
Sequential Intercept Model[22]

The Sequential Intercept Model provides a framework for communities to use when considering the interface between the criminal justice and mental health systems. The model envisions a series of points of interception at which an intervention can be made to prevent individuals from entering or penetrating deeper into the criminal justice system.

Approach:

- People with mental disorders should not penetrate the criminal justice system at a greater frequency than people in the same community without mental illness.
- People move through criminal justice system in predictable ways
- Opportunities for intervention to prevent individuals with mental illness from entering or penetrating deeper into the criminal justice system
- Illustrates key points to "intercept," to ensure:
    - Prevention of cycling between systems
    - Prompt access to treatment
    - Opportunities for diversion
    - Timely movement through system
    - Linkage to community resources

Five Critical Sequential Intercepts
Each interception considered a filter



Virginia's Cross Systems Mapping Sessions

In 2008, Virginia Governor Timothy M. Kaine signed Executive Order Number 62, which established the Commonwealth Consortium for Mental Health/ Criminal Justice Transformation. The new consortium had a dual purpose: preventing unnecessary involvement of persons with mental illness in the Virginia criminal justice system and promoting public safety by improving access to mental health treatment. This Executive Order paved the way for enhanced coordination across all branches of state government and the successful implementation of the Sequential Intercept Model.

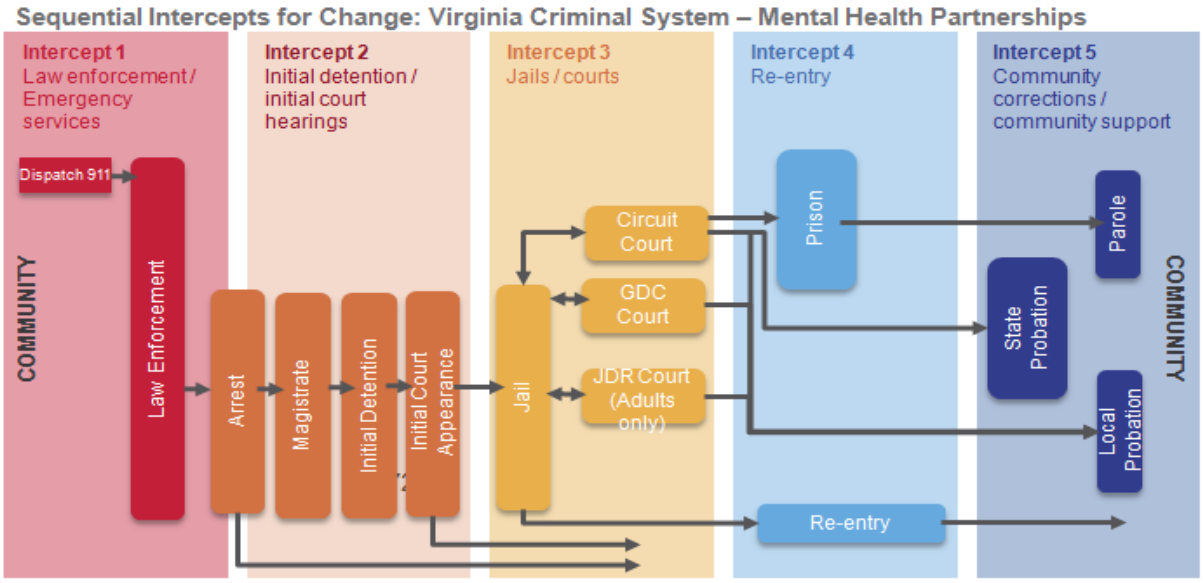
The Commonwealth Consortium was chaired by the Secretary of Health and Human Resources and Secretary of Public Safety with key leadership and guidance from the Office of the Attorney General and Secretary of Finance. Membership included commissioners or directors of the following state agencies representing the General Assembly and Supreme Court, people with disabilities, corrections, correctional education, education, health, housing & community, juvenile justice, medical assistance services, planning & budget, health professions, rehabilitation services, social services, veteran services, substance abuse prevention, criminal sentencing commission, employment commission, defense commission, crime commission, state police, and county stakeholders.

Virginia trained 20 facilities during a Cross System Mapping session based on the sequential intercept model. Since 2010, over 20 localities in Virginia have been mapped. Each facilitated 1.5-day community workshop brings together local systems' stakeholders to:

- Understand and '**map**' the local criminal justice/ mental health interface
- Identify local **resources** and **gaps**
- Enhance **local relationships** and improve capacity to make effective systems change
- Develop **locality specific priorities** and create an Action Plan for Change

[22] Griffin, Patricia A. and Munetz, Mark R., "Use of the Sequential Intercept Model as an Approach to Decriminalization of People With Serious Mental Illness," Psychiatric Services 57:544-549, 2006.

Stakeholders include individuals from criminal justice, mental health, substance abuse, social services, health services, housing, service receivers/families, and mental health advocates.



Wellness Recovery Action Planning - Ohio Study[23]

Wellness Recovery Action Planning (WRAP), developed by Mary Ellen Copeland, PhD, is a peer-led illness self-management intervention using self-help skills and strategies that complement other treatment scenarios. A study was conducted in Ohio to determine the effectiveness of WRAP compared to usual care. A total of 519 adults with severe and persistent mental illness in six Ohio communities were involved in the study – either assigned to the 8-week WRAP intervention or a wait-list control condition. Outcomes were assessed at end of treatment and at six-month follow-up.

Compared to controls, at immediate post intervention and at 6-month follow-up, WRAP participants reported reductions in symptom severity, increases in hopefulness, and enhanced quality of life. This study confirms the importance of peer-led wellness management interventions, such as WRAP, as part of a group of evidence-based recovery-oriented services.

San Francisco Behavioral Health Court: Mental Health Courts Can Reduce Recidivism and Violence by Forensic Patients[24]

A 2007 study of the San Francisco Behavioral Health Court compared the occurrence of new criminal charges for 170 people who entered a mental health court after arrest and over 8,000 other adults with mental disorders who were booked into an urban county jail after arrest during the same interval. The results indicated that a mental health court can reduce recidivism and violence by people with mental disorders who are involved in the criminal justice system.

Of the 170 individuals enrolled in the mental health court program, 81 completed the program, 45 were remaining in the program at the end of the study, and 44 left the program for other reasons. Participation in the mental health court program was associated with longer time without any new charges (54% reduction of being charged with new violent crimes and 26% reduction of being charged for any crime).

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[23] Cook, J, Copeland, M, Jonikas, J, Hamilton, M, Razzano, L, Grey, D, Floyd, C, Hudson, W, Macfarlane, R, Carter, T & Boyd, S (2011). Results of a Randomized Controlled Trial of Mental Illness Self-Management Using Wellness Recovery Action Planning. Schizophrenia Bulletin doi:10.1093/schbul/sbr012; http://www.mentalhealthrecovery.com/.

[24] McNeil, D & Binder, Renee (2007). Effectiveness of a Mental Health Court in Reducing Criminal Recidivism and Violence. American Journal of Psychiatry 164:1395-1403

New York: Veterans Courts Aim to Divert Veterans from Traditional Criminal System[25]
Veterans courts, a hybrid of drug and mental health courts, provide veterans suffering from substance abuse, alcoholism and mental health issues, with treatment, support, training and housing. The first veteran court was established in 2008 when a judge in Buffalo, New York noticed an increasing number of veterans on his docket. Each veteran is assigned a mentor (a veteran from the same service) who acts as a coach. If the veterans follow the program's regimen, they could see their charges reduced or dismissed.

To date there has been no recidivism among those who have completed the Buffalo program. Nearly 80 other courts have launched across the country and more are in the works; Maryland has no veterans courts. The ACLU and some district attorneys have opposed the creation of veterans courts in several states on the grounds that "justice inconsistently applied is justice denied".

Peer-Based Case Management Increases Treatment Participation Early in Process[26]
Researchers at the Yale Program on Recovery and Community Health compared the quality of treatment relationships and engagement in regular and peer-based case management for people with severe mental illness (SMI). Researchers interviewed 137 adults with SMI at six and 12 months once beginning peer or regular case management services and distributed self-report questionnaires to assess treatment relationships, motivation and service use. Providers rated participants' initial engagement and monthly attendance in treatment.

Participants perceived higher positive regard, understanding, and acceptance from peer providers at six months; initially unengaged clients showing more contacts with case managers in the peer condition than the regular condition. Peer providers help to increase treatment participation among the most disengaged participants early in treatment, which leads to greater motivation for continued treatment and use of peer-based community services.

Eastern Carolina University: Tele-Psychiatry Project Connects Providers with Patients[27]
In 2011, a physician at East Carolina University (ECU) authored an article describing the university's network of telepsychiatry services. Housing one of the longest-running clinical telemedicine operations in the world, the university recently developed the program, offering three full-time equivalent psychiatrists providing services to patients, coordination of mobile crisis teams, and consultation to other clinical professionals through videoconferencing services. Telepsychiatry sites include private mental service professionals, mental health agencies, a state psychiatric hospital, local management entities, and private family medicine professionals.

ECU Program Benefits	Telepsychiatry Requirements

▪ High patient satisfaction
  ▪ Patient convenience: Decreased wait time for specialist referral
▪ Improved patient compliance with therapy
  ▪ Lower frequency of missed appointments: 7%-10% of scheduled teleconsultations versus 35%-42% in traditional outpatient clinic
	▪ High start-up investment (can be prohibitively expensive for community providers)
	▪ Physician buy-in
	▪ Physician comfort in using the technology
	▪ Consistent quality of care
	▪ Coordinating a vast network
	▪ Licensing and credentialing issues
	▪ Regular utilization of services

[25] "Leave no veteran behind," The Economist; June 2011; http://www.economist.com/node/18775315. "Why Veterans Should Get Their Own Courts" The Atlantic, Dec 2011; http://www.nadcp.org/node/782; Department of Veterans Affairs; Iraq and Afghanistan Veterans of America.
[26] Sells, D, Davidson, L, Jewell, C, Falzer, P & Rowe, M (2006). The Treatment Relationship in Peer-Based and Regular Case Management for Clients With Severe Mental Illness. Psychiatric Services 57:1179-1184
[27] Saeed, S, Diamond, J, & Bloch, R (2011). Use of Telepsychiatry to Improve Care for People With Mental Illness in Rural North Carolina. *NC Med J.* 2011;72(3):219-222. Williams, M, Pfeffer, M, Boyle, J, & Hilty, D (2009). Telepsychiatry in the Emergency Department. Prepared for California Healthcare Foundation

Fletcher Allen Health Care: Rural Provider Access to Education Improved Through Teleconferencing[28]

Researchers sought to study use patterns and user evaluation of remote continuing medical education (CME) programs via teleconference in Vermont and upstate New York. For two years, health care providers from 14 hospitals used the teleconference system to attend nearly 400 CME programs at Fletcher Allen Health Care in Burlington, VT.

- Three programs per week on average
- 2.4 remote attendees per program on average
- 77% of remote attendees said they would not have attended if sessions were not available via teleconference
- 73% believed teleconference presentations were as effective as in-person sessions, 23% said they were less effective, and 4% said they were more effective
- Technical problems decreased over time as technological advancements improved the quality of system

Colorado: Shared Living Arrangements Increase Community Safety and Provide Greater Accountability for Sex Offenders[29]

The State of Colorado implemented Shared Living Arrangements (SLAs), which are separately contained living units in which more than one adult sex offender in treatment resides for the purpose of increased public and community safety, increased accountability, intensive containment, and more consistent treatment interventions. There are currently 127 sex offenders residing in 57 SLAs in Colorado, which represents about 8.5% of supervised sex offenders in Colorado.

SLAs are Not:	Benefits of SLAs
▪ A halfway house or residential treatment program ▪ A motel housing numerous offenders ▪ For offenders who are *not* under probation or parole ▪ For offenders who are not amenable to or not participating in treatment ▪ A substitute for a homeless shelter ▪ An assisted living environment for offenders who cannot live on their own based upon developmental disabilities or serious mental illness	▪ Increases community and victim safety ▪ Increases monitoring while living in the community ▪ Lowers sexual recidivism for moderate to high risk sex offenders ▪ Increases offender engagement in treatment and compliance ▪ Increases earlier detection of offender recidivism and violations ▪ Cost-effective treatment option (Sex offenders living in SLAs pay for their own housing, treatment, and monitoring services)

[28] Peter W. Callas, Michael A. Ricci, and Michael P. Caputo. Telemedicine Journal and e-Health. December 2000, 6(4): 393-399. http://online.liebertpub.com/doi/abs/10.1089/15305620050503861?journalCode=tmj.

[29] Shared Living Arrangements Fact Sheet Approved by the Colorado Sex Offender Management Board (2010). http://dcj.state.co.us/odvsom/sex_offender/SO_Pdfs/SLA%20Fact%20Sheet.pdf; White Paper of Adult Sex Offender Housing 2011. http://dcj.state.co.us/odvsom/sex_offender/SO_Pdfs/White%20Paper%20Final%20November%202011.pdf

Appendix F. Stakeholder Participation and Engagement Plan

Cannon Design recommends an approach to engagement that seeks to engage internal and external constituents in a manner that leads to shared accountability for the end outcomes. The participation and acceptance of key stakeholder groups is crucial in developing a comprehensive mental health system that will successfully serve the community of Maryland. We have observed that even the best-designed and implemented plans can fail if key stakeholders are not tied to a project's successful outcome.

An engagement policy should lead to supported decisions, require an investment of time and resources, and involve transformational leadership practices at all levels. Most importantly, it should recognize the perspective of interdependent organizations in a complex system working to achieve a healthy society

An engagement policy is not about giving up decision-making authority or about replacing evidence and expertise for uninformed perspectives. Rather, it is about ensuring that relevant information is considered into decision-making and perspectives of those for whom the decisions will impact are included in the process. That being said, engagement does not mean that every decision needs to be a group decision. A good policy will set the timing for when to engage others, set realistic expectations, provide adequate information and emphasize openness and transparency into the decision-making process.

The steps below describe one strategy from the International Association for Public Participation (IAP2)[30] to inform, consult, involve, collaborate and empower key constituent groups. This is one potential engagement and public participation best practice that the State can consider.

IAP2's Participation Spectrum©

	Inform	Consult	Involve	Collaborate	Empower
Participation Goal	Provide balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions	To obtain feedback on analysis, alternatives and/or decisions	Work directly with key stakeholders throughout the process to ensure that concerns and aspirations are consistently understood and considered	To partner with key stakeholders in each aspect of the decision including the development of alternatives and the identification of the preferred solution	To place final decision-making in the hands of key stakeholders
Promise to Key Stakeholders	We will keep you informed	We will keep you informed, listen to and acknowledge concerns and aspirations and provide feedback	We will work to ensure that your concerns and aspirations are directly reflected in the solutions developed and provide feedback	We will look to you for advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions	We will implement what you decide
Example Techniques	Fact sheets, websites, open sites	Public comment, focus groups, surveys, meetings	Workshops, deliberative polling	Advisory committees, consensus building, participatory decision-making	Citizen juries, ballots, delegated decision

[30] The International Association for Public Participation (IAP2) has well developed processes, tools and techniques for engaging the public that have been created by practitioners in the field over the past three decades. www.iap2.org

Appendix G: Geographic Assessment Supplements

Population Demographics by Region, FY11

County	2010 Actual	2021 Estimated	10-Year Growth	2010 Population % >55	Median Age	% Minority	Median Housing Value*	Median Household Income	% Bachelor's degree or higher
Western	**252,614**	**260,962**	**3%**	**27%**	**39.0**	**11%**	**$168,067**	**44,110**	**17%**
Garrett	30,097	29,661	-1%	**30%**	40.2	2%	$163,700	43,637	16%
Allegany	75,087	71,344	-5%	30%	39.6	9%	$107,300	37,083	14%
Washington	147,430	159,957	8%	25%	37.4	14%	$233,200	51,610	18%
Capital	**2,068,582**	**2,157,289**	**4%**	**23%**	**37.4**	**53%**	**$390,267**	**82,263**	**42%**
Frederick	233,385	260,918	12%	**22%**	36.8	18%	$355,600	**80,212**	35%
Montgomery	971,777	1,041,725	8%	26%	39.4	40%	$487,500	**95,101**	56%
Prince George's	863,420	854,645	-1%	21%	35.9	77%	$327,700	**71,476**	29%
Central	**2,662,691**	**2,728,766**	**2%**	**25%**	**37.9**	**36%**	**$313,367**	**86,381**	**33%**
Anne Arundel	537,656	554,191	3%	**24%**	38.1	23%	$369,200	84,320	36%
Baltimore City	620,961	597,514	-4%	23%	35.5	68%	$152,000	39,366	24%
Baltimore County	805,029	821,569	2%	27%	39.2	33%	$259,400	64,296	34%
Carroll	167,134	181,439	9%	25%	38.5	8%	$351,500	80,555	29%
Harford	244,826	266,663	9%	23%	38.3	35%	$293,300	102,358	58%
Howard	287,085	307,390	7%	24%	38.0	18%	$454,800	76,231	29%
Southern	**340,439**	**385,905**	**13%**	**21%**	**35.8**	**32%**	**$354,367**	**84,429**	**26%**
Calvert	88,737	100,657	13%	**23%**	37.4	19%	$391,400	89,681	26%
Charles	146,551	164,318	12%	20%	35.5	48%	$352,000	86,273	26%
St. Mary's	105,151	120,931	15%	20%	34.7	21%	$319,700	77,332	26%
Eastern	**449,226**	**485,031**	**8%**	**25%**	**39.4**	**24%**	**$254,133**	**55,980**	**22%**
Cecil	101,108	112,017	11%	**24%**	36.7	20%	$254,700	54,036	16%
Caroline	33,066	37,158	12%	23%	36.6	10%	$223,200	65,650	20%
Dorchester	32,618	34,039	4%	31%	41.3	30%	$197,000	45,096	16%
Somerset	26,470	27,769	5%	32%	40.9	19%	$146,900	51,871	30%
Kent	20,197	22,913	13%	27%	39.7	11%	$269,400	79,163	28%
Queen Anne's	47,798	49,653	4%	23%	34.5	45%	$366,800	40,595	14%
Talbot	37,782	39,758	5%	36%	44.7	17%	$350,500	62,517	33%
Wicomico	98,733	108,539	10%	25%	35.9	29%	$189,500	51,217	23%
Worcester	51,454	53,185	3%	35%	44.0	17%	$289,200	53,672	27%
Total	**5,773,552**	**6,017,953**	**4%**	**24%**	**38.3**	**38%**	**$287,729**	**65,749**	**34%**

CANNONDESIGN

Outcomes by Region, FY11

Region	% Claims	% Budget	Expenses / Consumer	Count	Independent	Community	Institute	Homeless	Other	Homeless in Last 6 Months	Dissatisfied with Recovery	Arrested in Last 6 Months	In Jail or Prison Last 6 Months	Poor Health	Overweight or Obese
WESTERN	**5%**	**5%**	**$3,290**	**3,234**	**91%**	**5%**	**1%**	**2%**	**1%**	**10%**	**17%**	**8%**	**7%**	**13%**	**66%**
Allegany	2.4%	1.7%	$3,320	1,160	94%	4%	0.4%	2%	0%	9%	13%	10%	8%	15%	64%
Garrett	0.3%	0.5%	$2,815	388	93%	2%	0.8%	2%	3%	6%	13%	6%	4%	17%	63%
Washington	1.8%	2.7%	$3,368	2015	89%	6%	0.5%	3%	1%	12%	20%	7%	7%	11%	68%
CAPITAL	**26%**	**20%**	**$5,080**	**6,125**	**79%**	**11%**	**1%**	**7%**	**2%**	**15%**	**15%**	8%	8%	9%	68%
Frederick	3.7%	3.5%	$5,573	1,349	82%	14%	0.5%	4%	1%	14%	15%	9%	10%	11%	65%
Montgomery	10.1%	7.8%	$4,851	3,339	79%	10%	0.9%	**8%**	3%	17%	15%	8%	7%	10%	68%
Prince George's	12.6%	8.6%	$5,118	3,090	78%	12%	1.0%	7%	2%	14%	15%	7%	7%	8%	70%
CENTRAL	**51%**	**63%**	**$4,348**	**21,025**	**81%**	**9%**	**1%**	**6%**	**3%**	**17%**	**18%**	**7%**	**7%**	**11%**	**68%**
Anne Arundel	10.3%	5.8%	$4,600	2,031	80%	10%	0.7%	**6%**	3%	17%	18%	10%	9%	10%	66%
Baltimore	20.5%	15.2%	$5,639	5,577	86%	7%	1.3%	4%	2%	11%	19%	6%	6%	12%	67%
Baltimore City	11.9%	35.2%	$5,486	15,098	79%	10%	1.2%	**7%**	3%	20%	17%	8%	8%	11%	68%
Carroll	2.2%	1.9%	$4,300	919	84%	7%	1.2%	6%	2%	13%	19%	8%	9%	13%	68%
Harford	3.4%	3.1%	$4,108	1,421	87%	6%	0.4%	6%	1%	14%	27%	9%	9%	13%	69%
Howard	2.8%	2.0%	$4,826	812	85%	9%	0.7%	2%	3%	9%	19%	7%	6%	8%	66%
SOUTHERN	**3%**	**3%**	**$3,400**	**1,911**	**86%**	**6%**	**1%**	**5%**	**2%**	**15%**	**15%**	11%	11%	11%	66%
Calvert	0.2%	0.8%	$2,907	629	88%	5%	0.3%	6%	1%	14%	12%	14%	16%	12%	62%
Charles	0.5%	1.3%	$3,607	948	87%	6%	1.5%	4%	3%	12%	14%	9%	7%	10%	65%
St. Mary	2.0%	1.0%	$3,594	642	84%	7%	0.3%	**7%**	2%	19%	20%	10%	12%	11%	72%
EASTERN	**15%**	**9%**	**$3,611**	**5,079**	**90%**	**5%**	**0.1%**	**4%**	**1%**	**12%**	**17%**	**8%**	**8%**	**10%**	**69%**
Caroline	1.0%	0.6%	$2,791	551	95%	3%	0.0%	2%	1%	9%	18%	9%	7%	11%	70%
Cecil	1.7%	1.9%	$4,111	862	86%	5%	0.2%	**6%**	2%	15%	25%	8%	9%	15%	70%
Dorchester	3.1%	1.3%	$4,806	661	94%	3%	0.2%	2%	1%	9%	25%	6%	6%	10%	71%
Kent	1.3%	0.4%	$3,471	289	91%	4%	0.3%	2%	3%	10%	16%	9%	7%	10%	67%
Queen Anne	2.0%	0.5%	$3,085	394	93%	4%	0.0%	3%	1%	10%	13%	10%	7%	7%	67%
Somerset	0.3%	0.7%	$4,032	402	90%	7%	0.0%	2%	1%	7%	10%	8%	6%	8%	72%
Talbot	0.8%	0.6%	$3,663	399	92%	6%	0.0%	1%	1%	7%	10%	8%	7%	9%	62%
Wicomico	5.0%	2.3%	$3,947	1,424	87%	6%	0.2%	4%	2%	14%	17%	8%	9%	11%	70%
Worcester	0.05%	0.8%	$2,839	650	91%	2%	0.0%	**7%**	1%	15%	13%	9%	9%	8%	69%
TOTAL	**100%**	**100%**	**$4,824**		**83%**	**8%**	**1%**	**6%**	**2%**	**16%**	**17%**	**8%**	**92%**	**11%**	**68%**

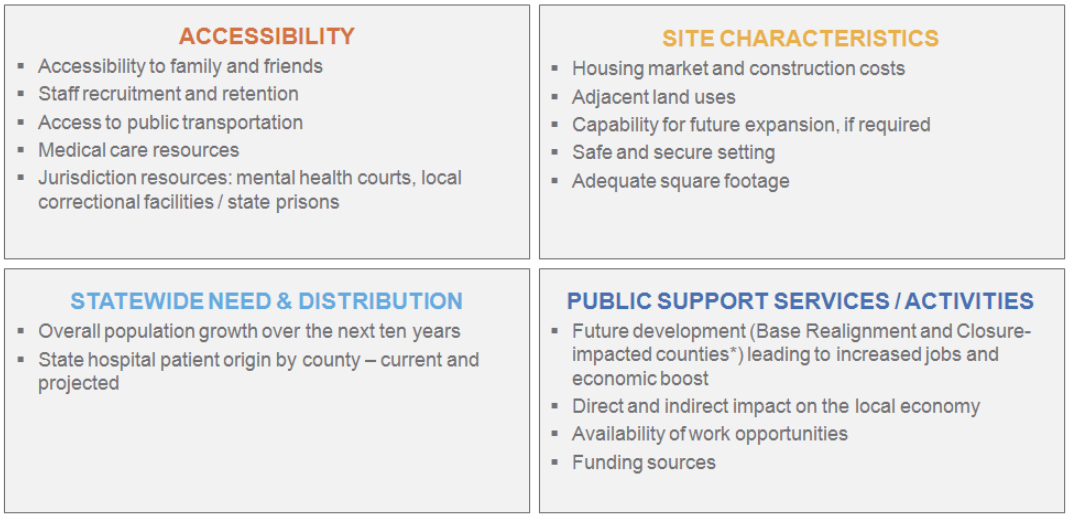
Geographic Assessment of Community Services for State Hospital Patients

This section provides a framework for considering the placement of community resources for mental health consumers and identifies community providers by geographic region that treat individuals who have been admitted to a state hospital. Though not included in the original scope of this study, Cannon Design believes that an in-depth study of community resources can further address gaps in the mental health services care continuum. This Geographic Assessment offers a unique perspective in analyzing community services and measurable outcomes specifically for individuals served by the state psychiatric hospitals, and concludes with a map of areas prime for community resource investment as well as recommendations for addressing community services variation.

The study of geographic variation of care in Maryland revealed that variations in cost and outcomes exist across the state. Variations in geographic utilization cannot always be explained by the rates of illness; rather, sometimes they may be representative of the inequality in availability of community resources and implicit assumption that expansion of some treatments may be more effective in some areas than others.

Placement Assessment Considerations

Placement for community services considers variations in utilization and how best to address need. In addition to population, site placement takes into account considerations and activities by region.



**Note: BRAC = Base Realignment and Closure, approved by the President and Congress in 2005. Expected to increase number of military, civilian and mission contractor personnel in Maryland more than any other state.*

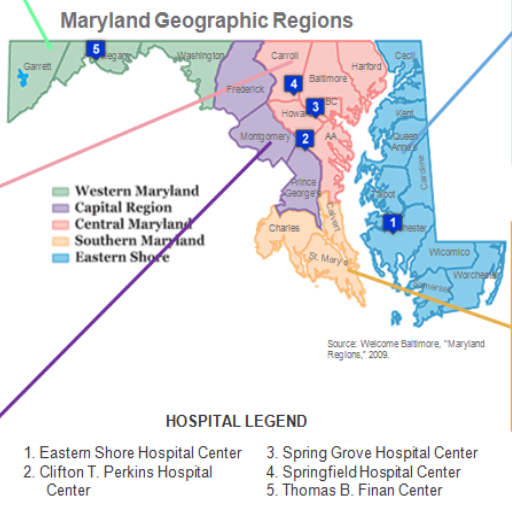
In planning for community mental health services, it is important to establish geographic planning areas to predict utilization of services and distribute resources. Cannon Design utilized the five planning zones defined by the Commission's State Health Plan, which divides Maryland's 23 counties and Baltimore City into five areas: Western Maryland, Central Maryland, Southern Maryland and Eastern Shore.

The Geographic Assessment overlays current five planning regions along with historical patient demographics.

WESTERN (Allegany, Garrett, Washington)
- Current Population: 252,614 (4% of total)
- Projected 10-year growth: 3%
- 7% of state hospital population originates from this region
- 4% of future state hospital population will originate from this region by 2021

CENTRAL (Carroll, Howard, Anne Arundel, Baltimore City, Baltimore, Harford)
- Current Population: 2,728,766 (46% of total)
- Projected 10-year growth: 3%
- 50% of state hospital patients originate from this region
- 46% of future state hospital population will originate from this region by 2021

CAPITAL (Frederick, Montgomery, Prince George's)
- Current Population: 2,068,582 (36% of total)
- Projected 10-year growth: 4%
- 30% of state hospital population originates from this region
- 36% of future state hospital population will originate from this region by 2021

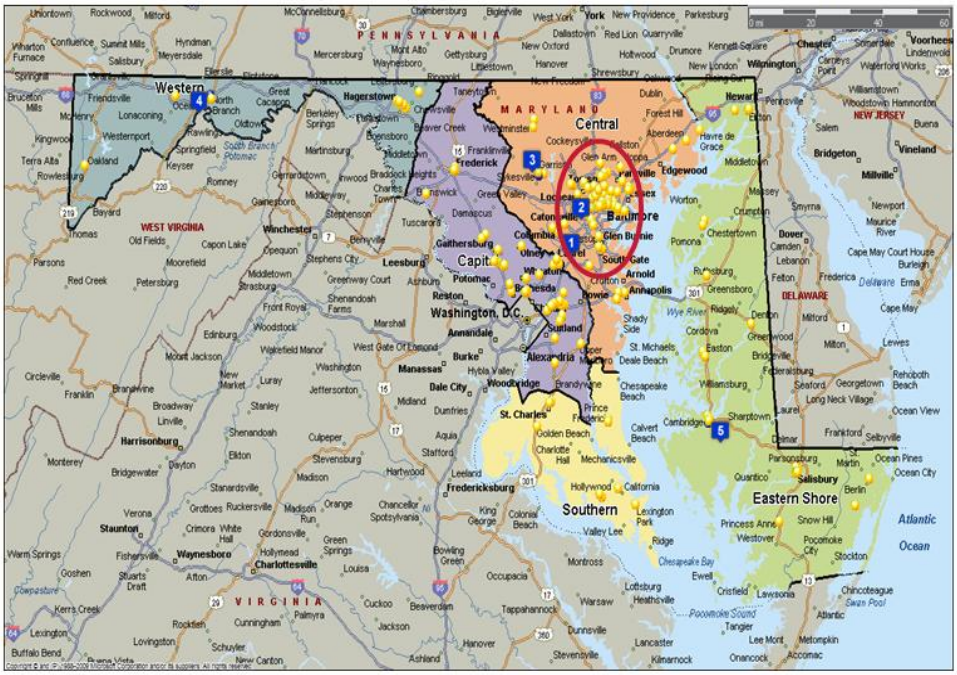


EASTERN SHORE (Caroline, Cecil, Dorchester, Kent, Somerset, Wicomico, Worchester, Queen Anne's, Talbot)
- Current Population: 449,226 (8% of total)
- Projected 10-year growth: 8%
- 10% of state hospital population originates from this region
- 8% of future state hospital population will originate from this region by 2021

SOUTHERN (Charles, St. Mary's, Calvert)
- Current Population: 340,439 (6% of total)
- Projected 10-year growth: 13%
- 3% of state hospital population originates from this region
- 6% of future state hospital population will originate from this region by 2021

Community providers utilized by state hospital patients are concentrated in Central Region, which serves as the origin for 51% of community claims from state hospital patients.

Community Provider Location for Adult State Hospital Patients, FY11



Region	FY11 Volumes	% Mix
State Hospital Patient Origin*		
Western	69	7%
Central	538	50%
Capital	322	30%
Eastern	109	10%
Southern	34	3%
Total	1,072	100%
Community Claims Origin*		
Western	5,912	5%
Central	67,417	51%
Capital	34,829	26%
Eastern	20,226	3%
Southern	3,585	15%
Total	131,969	100%

1. Clifton T. Perkins Hospital Center
2. Spring Grove Hospital Center
3. Springfield Hospital Center
4. Thomas B. Finan Hospital Center
5. Eastern Shore Hospital Center

*Note: *Excludes outpatient service category, individual physician providers and out-of-state providers and consumers.*

Outcomes Measurement System (OMS)

MHA worked with MAPS-MD and the University of Maryland to implement the Outcomes Measurement System (OMS)[31] statewide beginning in September 2006. For adults, data are being collected on five outcome domains: psychiatric signs and symptoms and symptom distress; functioning, including employment; living situation; criminal justice system/legal involvement; and alcohol and substance abuse. Consumers, ages 6 to 64, who are treated in an Outpatient Mental Health Center (OMHC), FQHC (Federally Qualified Health Center), or hospital-based clinic receive authorization for outpatient services through OMS. The consumer initially receives authorization for two services; prior to the third service and for each six months thereafter, the provider completes an OMS interview questionnaire with the consumer in order to obtain authorizations.

The community outcomes below represent information from the OMS data mart collected from adults receiving outpatient mental health treatment. On the whole, Capital and Central Regions spend more per consumer but show less favorable outcomes for independence.

Demographics by Region, FY11

County	2010 Actual	2021 Estimated	10-Year Growth	2010 Population % >55	Median Age	% Minority	Median Household Income	% bachelor's degree or higher
Western	252,614	260,962	3%	27%	39.0	11%	$45,572	17%
Capital	2,068,582	2,157,289	4%	23%	37.4	53%	$82,263	42%
Central	2,662,691	2,748,766	3%	25%	37.9	36%	$86,381	33%
Southern	340,439	385,905	13%	21%	35.8	32%	$84,429	26%
Eastern	449,226	485,031	8%	25%	39.4	24%	$55,980	22%
Total	5,773,552	6,017,953	4%	24%	38.3	38%	$65,749	34%

Community Outcomes by Region, FY11

Region	% Claims	% Budget	Expenses / Consumer	Survey Count (n)	Independent	Community	Institute	Homeless	Other	Homeless in Last 6 Months	Dissatisfied with Recovery	Arrested in Last 6 Months	In Jail or Prison Last 6 Months	Poor Health	Overweight or Obese
Western	5%	5%	$3,290	3,234	91%	5%	1%	2%	1%	10%	**17%**	8%	7%	13%	66%
Capital	26%	20%	**$5,080**	6,125	**79%**	11%	1%	**7%**	2%	**15%**	**15%**	8%	8%	9%	68%
Central	51%	63%	$4,348	21,025	**81%**	9%	1%	6%	3%	**17%**	**18%**	7%	7%	11%	68%
Southern	3%	3%	$3,400	1,911	86%	6%	1%	5%	2%	15%	15%	11%	11%	11%	66%
Eastern	15%	9%	$3,611	5,079	90%	5%	0.1%	4%	1%	12%	**17%**	8%	8%	10%	69%
TOTAL	**100%**	**100%**	**$4,824**		**83%**	**8%**	**1%**	**6%**	**2%**	**16%**	**17%**	**8%**	**92%**	**11%**	**68%**

Information for the OMS Data mart is gathered from individuals, ages 18-64, who are receiving outpatient mental health treatment services. The OMS information, which is gathered directly through interviews between the clinician and consumer, is collected at the beginning of treatment and approximately every 6 months while receiving treatment. Source includes: Outpatient Mental Health Centers (OMHCs), Federally Qualified Health Centers (FQHCs), and Hospital-Based Clinics (also known as "HSCRC" clinics) submit OMS questionnaires. Source: Maryland Value Options Outcomes Measurement System, FY11.

The following sections provide an overview of demographic and community statistics, mental health outcomes, and maps of available community resources for state hospital patients by geographic region.

[31] Current results from the OMS can be obtained from http://maryland.valueoptions.com/services/OMS_Welcome.html.

Western Region

Western Maryland (Garrett, Allegany and Washington) is the smallest and most remote region in the state, bounded in the north by the Mason-Dixon line and the Potomac River in the south. The region is characterized by a diverse landscape with a number of larger towns and expansive rural areas. The region comprises only 4% of the total Maryland population, and is the poorest in the state, with a median household income of $44,000 and median housing value of $168,067. However, the region has low incidence of incarceration and violent crimes. Western Region has the lowest expenditures per consumer and lowest incidence of homelessness among surveyed mental health consumers, yet only 7% of state hospital patients and 5% of community claims originate from this region.[32]

County Health Ranking, 2011

County	Rank		
	Health Outcomes	Health Behaviors	Access to Care
Allegany	23	18	16
Garrett	16	14	20
Washington	12	13	14
Western MD	**5**	**5**	**4**

Western Community Statistics, 2011

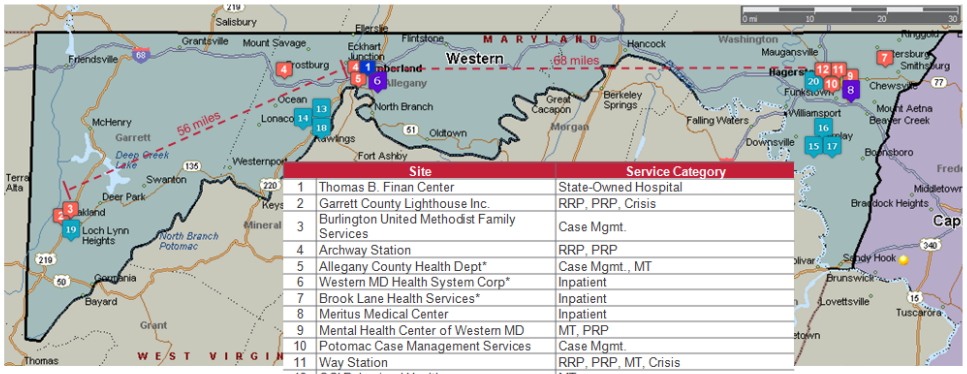
Metric	Data
% of Total Population	4%
% >65 Years Old	16%
Rural Population Rate	36%
Mental Health Provider Ratio	4,355:1
Primary Care Provider Ratio	1,164:1
Uninsured Adults Rate	17%
Unemployment Rate	10%
Incarcerated (2002)	742
Veterans as % of Population	9%

Western Mental Health Outcomes, FY11*

Metric	Data
Expenses / Consumer	$3,290
% Budget	5%
% State Hospital Patients	7%
% Community Claims	5%
% Homeless	2%
% Homeless in Last 6 Mths	10%
% Dissatisfied with Recovery	17%
% Arrested in Last 6 Mths	8%
% In Jail/Prison in Last 6 Mths	7%

Western Region community resources for state hospital patients are clustered in more populated regions, given the mountainous and rural landscape of this region. Large gaps exist in areas between larger towns (e.g., between Cumberland and Hagerstown). Below is a map of community resources utilized by adult state hospital patients in FY11 in Western Region. Several correctional facilities and detention centers are located in the region, though the region lacks a mental health court. Two acute care hospitals provide inpatient services to state hospital patients (Western Maryland Health Systems and Meritus Medical Center) and one private psychiatric hospital exists near Hagerstown (Brook Lane Health Services). State-owned Thomas B. Finan Center is located in Cumberland, offering 66 state beds to the surrounding population.

Western Community Provider/Resource Location for Adult State Hospital Patients, FY11



	Site	Service Category
1	Thomas B. Finan Center	State-Owned Hospital
2	Garrett County Lighthouse Inc.	RRP, PRP, Crisis
3	Burlington United Methodist Family Services	Case Mgmt.
4	Archway Station	RRP, PRP
5	Allegany County Health Dept*	Case Mgmt., MT
6	Western MD Health System Corp*	Inpatient
7	Brook Lane Health Services*	Inpatient
8	Meritus Medical Center	Inpatient
9	Mental Health Center of Western MD	MT, PRP
10	Potomac Case Management Services	Case Mgmt.
11	Way Station	RRP, PRP, MT, Crisis
12	QCI Behavioral Health	MT
13	Western Correctional Institution	Correctional Facility
14	North Branch Correctional Institution	Correctional Facility
15	MD Correctional Institution - Hagerstown	Correctional Facility
16	MD Correctional Training Center	Correctional Facility
17	Roxbury Correctional Institution	Correctional Facility
18	Allegany County Detention Center	Detention Center
19	Garrett County Detention Center	Detention Center
20	Washington County Detention Center	Detention Center

** indicates provider of Purchase of Care or Partial Hospitalization services for state hospital patients. Note: Excludes outpatient service category and individual physician providers. Analysis includes adults (18+) only. PRP = psychiatric rehabilitation program; RRP = residential rehabilitation program; MT = mobile treatment.*

[32] Note: Outcomes Measurement System survey sample (n) = 3,234. Source: Nielsen Claritas; U.S. Census Bureau/American Community Survey (ACS); County Health Rankings; Medicare claims/Dartmouth Atlas; Bureau of Labor; Health Resources & Services Administration; Maryland ValueOptions Outcomes Measurement System, FY11; NAMI MD; Cannon Design analysis.

Capital Region

Capital Region (Frederick, Montgomery and Prince George's) is known for its high-tech industries and research centers in telecommunications, electronics, computers, health and medicine. It is one of the most populous regions in the state, comprising 36% of Maryland's population, as well as the most affluent, with a median household income of $79,433 and a median housing value of $390,267. Capital Region spends the most per mental health consumer, yet has a high rate of homelessness and consumers dissatisfied with their recovery.[33]

County Health Ranking, 2011

County	Rank		
	Health Outcomes	Health Behaviors	Access to Care
Frederick	4	4	7
Montgomery	2	1	2
Prince George's	15	10	22
Capital	**1**	**1**	**2**

Capital Community Statistics, 2011

Metric	Data
% of Total Population	36%
% >65 Years Old	11%
Rural Population Rate	11%
Mental Health Provider Ratio	1,411:1
Primary Care Provider Ratio	693:1
Uninsured Adults Rate	16%
Unemployment Rate	7%
Incarcerated (2002)	1,552
Veterans as % of Population	7%

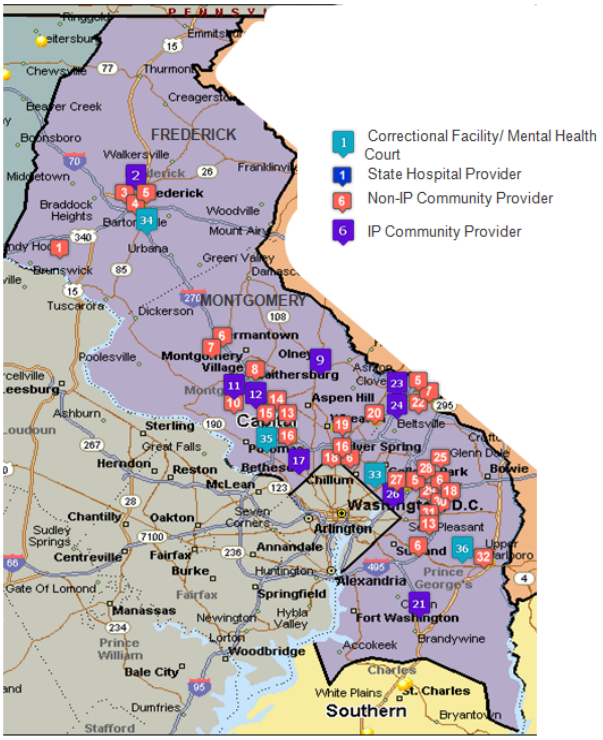
Capital Mental Health Outcomes, FY11*

Metric	Data
Expenses / Consumer	$5,080
% Budget	20%
% State Hospital Patients	30%
% Community Claims	26%
% Homeless	7%
% Homeless in Last 6 Mths	15%
% Dissatisfied with Recovery	15%
% Arrested in Last 6 Mths	8%
% In Jail/Prison in Last 6 Mths	8%

Capital Region houses a large number of acute care hospitals that serve state hospital patients, yet no state hospitals are located in the region. A mental health court is located in Prince George's County, and three county detention centers are dispersed throughout the region.

Capital Community Provider Location for Adult State Hospital Patients, FY11

	Site	Service Category
1	The Jefferson School	Residential Treatment
2	Frederick Memorial Hospital	Inpatient
3	Keystone Services of MD	Case Mgmt.
4	Way Station	RRP, PRP, Crisis, MT
5	Family Service Foundation	RRP, PRP
6	Vesta	RRP, PRP
7	Guide PRP	RRP, PRP
8	Family Services Agency Inc.	RRP, PRP
9	Montgomery County General Hospital*	Inpatient
10	CBH Health LLC	PRP
11	Adventist Ridge Behavioral*	Inpatient
12	Adventist Healthcare	Inpatient
13	People Encouraging People	RRP, PRP, MT
14	Montgomery County DHHS Behavioral	Case Mgmt.
15	Montgomery County Sheriff's Office	Emergency Petition
16	St. Luke's House	RRP, PRP, Crisis
17	Suburban Hospital	Inpatient
18	Affiliated Sante Group	PRP
19	Threshold Services	RRP, PRP
20	Rock Creek Foundation	RRP, PRP
21	Southern Maryland Hospital*	Inpatient
22	Tateioms	PRP
23	Laurel Regional Hospital	Inpatient
24	Greater Laurel Beltsville Rehab	Inpatient
25	Rehabilitation Systems Inc	RRP, PRP
26	Prince Georges Hospital Center*	Inpatient
27	Safe Journey House	RRP, Crisis
28	Volunteers of America Chesapeake	RRP, PRP
29	Care Connection Inc.	PRP
30	QCI Behavioral Health	MT
31	Center for Therapeutic Concepts	PRP
32	Prince Georges Sheriff Office	Emergency Petition
33	Prince George's Mental Health Court	Mental Health Court
34	Frederick County Detention Center	Detention Center
35	Montgomery County Detention Center	Detention Center
36	Prince George's County Detention Center	Detention Center



**indicates provider of Purchase of Care or Partial Hospitalization services for state hospital patients. Note: Excludes outpatient service category and individual physician providers. Analysis includes adults (18+) only. MT = mobile treatment; RRP = residential rehabilitation program; PRP = psychiatric rehabilitation program.*

[33] Note: Outcomes Measurement System survey sample (n) = 6,125. Source: Nielsen Claritas; U.S. Census Bureau/American Community Survey (ACS); County Health Rankings; Medicare claims/Dartmouth Atlas; Bureau of Labor Statistics; Health Resources & Services Administration; Maryland ValueOptions Outcomes Measurement System, FY11; NAMI MD; Cannon Design analysis 2012.

Central Region

Central Region (Carroll, Howard, Anne Arundel, Baltimore City, Baltimore, and Harford) serves the largest number of people with mental illness. Several counties, notably Howard and Anne Arundel, evolved from bedroom community to employment base. The region is the most populous in the state, comprising 46% of Maryland's total population, and is also one of the more affluent regions, with a median household income of $72,421 and median housing value of $313,367. Central Region has second highest expenditures per consumer yet has high rates of homelessness in the last six months and percentage of people dissatisfied with their recovery.[34]

County Health Ranking, 2011

County	Rank		
	Health Outcomes	Health Behaviors	Access to Care
Anne Arundel	10	5	5
Baltimore	13	6	3
Baltimore City	24	23	6
Carroll	5	7	9
Harford	9	8	4
Howard	1	2	1
Central MD	**3**	**2**	**1**

Central Community Statistics, 2011

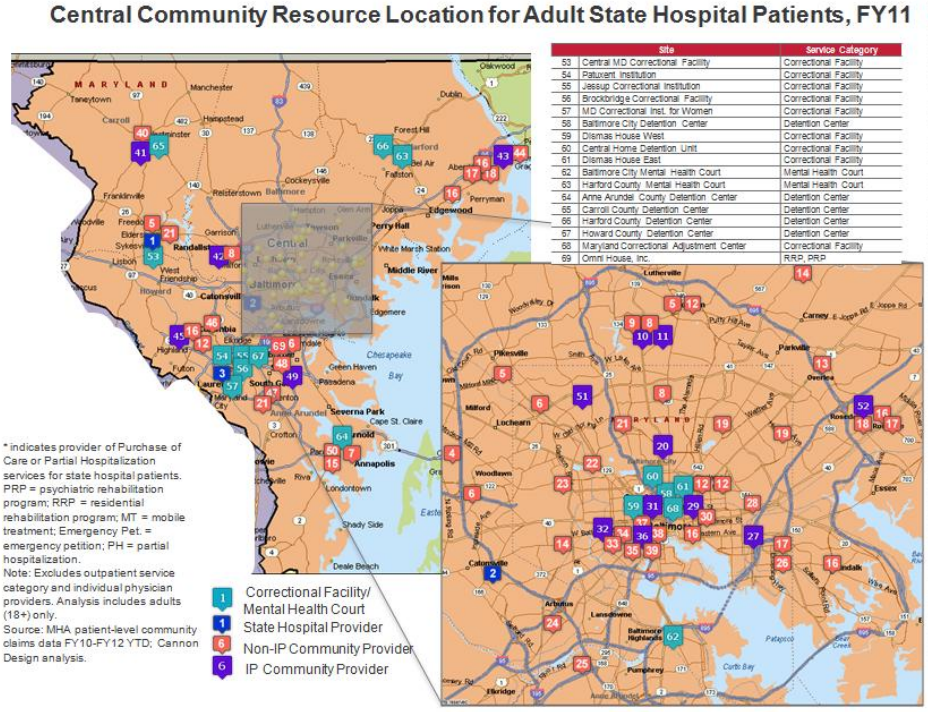
Metric	Data
% of Total Population	46%
% >65 Years Old	13%
Rural Population Rate	15%
Mental Health Provider Ratio	1,457:1
Primary Care Provider Ratio	638:1
Uninsured Adults Rate	14%
Unemployment Rate	8%
Incarcerated (2002)	18,982
Veterans as % of Population	9%

Central Mental Health Outcomes, FY11

Metric	Data
Expenses / Consumer	$4,348
% Budget	63%
% State Hospital Patients	50%
% Community Claims	51%
% Homeless	6%
% Homeless in Last 6 Mths	17%
% Dissatisfied with Recovery	18%
% Arrested in Last 6 Mths	7%
% In Jail/Prison in Last 6 Mths	7%

The majority of resources in the state can be found in Central Region. In addition to 14 acute care hospitals and one psychiatric facility, three state psychiatric hospitals are located in Central Region (Spring Grove, Springfield and Clifton T. Perkins). Numerous correctional facilities and detention centers are dispersed throughout the region, and mental health courts exist in Baltimore City and Harford County.

Central Community Resource Location for Adult State Hospital Patients, FY11



	Site	Service Category
53	Central MD Correctional Facility	Correctional Facility
54	Patuxent Institution	Correctional Facility
55	Jessup Correctional Institution	Correctional Facility
56	Brockbridge Correctional Facility	Correctional Facility
57	MD Correctional Inst. for Women	Correctional Facility
58	Baltimore City Detention Center	Detention Center
59	Dismas House West	Correctional Facility
60	Central Home Detention Unit	Correctional Facility
61	Dismas House East	Correctional Facility
62	Baltimore City Mental Health Court	Mental Health Court
63	Harford County Mental Health Court	Mental Health Court
64	Anne Arundel County Detention Center	Detention Center
65	Carroll County Detention Center	Detention Center
66	Harford County Detention Center	Detention Center
67	Howard County Detention Center	Detention Center
68	Maryland Correctional Adjustment Center	Correctional Facility
69	Omni House, Inc.	RRP, PRP

	Site	Svc Category
1	Springfield Hospital Center	State Hospital
2	Spring Grove Hospital Center	State Hospital
3	Clifton T. Perkins Hospital Center	State Hospital
4	Family Service Foundation	RRP, PRP
5	Prologue Inc.	RRP, PRP
6	People Encouraging People	RRP, MT, PRP
7	Advocate Support Services	PRP
8	Mosaic Community Services	RRP, PRP, Crisis
9	Greater Baltimore Medical Center	Emergency Pet.
10	Sheppard Pratt Health System*	Inpatient
11	St. Joseph Medical Center	Inpatient
12	Humanim	RRP, PRP
13	Paradise II PRP LLC	PRP
14	Chesapeake Treatment Center	PRP
15	Arundel Lodge Inc	RRP, PRP
16	Alliance Inc	RRP, PRP
17	Key Point	RRP, PRP
18	Community Behavioral Services	PRP
19	Harford-Belair CMHC Rehab	RRP, PRP
20	Union Memorial Hospital*	Inpatient
21	Care Connection Inc.	PRP
22	Bon Secours Balto Hlth Sys	RRP, MT
23	Madonna Healthcare Services	PRP
24	Good Shepherd Center	Res Treatment
25	Foundations Psychiatric Rehab	PRP
26	JH Bayview Mobile Treatment	MT
27	JH Bayview Medical Center	Inpatient, PRP
28	Volunteers of America Ches. Bay	RRP, PRP
29	Johns Hopkins Hospital*	Inpatient, PH
30	Baltimore Crisis Response	RRP, Crisis
31	Maryland General Hospital	Inpatient
32	Bon Secours Hospital*	Inpatient, PH
33	UMMC-Harbor City Unlimited	RRP, PRP
34	Baltimore Behavioral Health Inc.*	PH, PRP
35	UMMS Community Support Pro	Case Mgmt
36	University of MD Medical System*	Inpatient
37	UMMS Mobile Treatment Unit	MT
38	The Regeneration Project	PRP
39	Goodwill Industries of Ches. Inc	Supportive Empl.
40	Keystone Services of Maryland	Case Mgmt.
41	Carroll Hospital Center*	Inpatient
42	Northwest Hospital Center	Inpatient
43	Harford Memorial Hospital	Inpatient
44	Upper Bay CSS	RRP, PRP
45	Howard County General Hospital	Inpatient
46	Way Station	RRP, PRP, Crisis
47	Vesta	RRP, PRP
48	Partnership Development Gp	Case Mgmt
49	Baltimore Washington Medical Ctr	Inpatient
50	Anne Arundel Medical Center	Emergency Pet.
51	Sinai Hospital of Baltimore*	Inpatient
52	Franklin Square Hospital	Inpatient

** indicates provider of Purchase of Care or Partial Hospitalization services for state hospital patients. PRP = psychiatric rehabilitation program; RRP = residential rehabilitation program; MT = mobile treatment; Emergency Pet. = emergency petition; PH = partial hospitalization Note: Excludes OP service category and individual physician providers. Analysis includes adults (18+) only.*

[34] Note: Outcomes Measurement System survey sample (n) = 21,025. Source: Nielsen Claritas; U.S. Census Bureau/American Community Survey (ACS); County Health Rankings; Medicare claims/Dartmouth Atlas; Bureau of Labor Statistics; Health Resources & Services Administration; Maryland ValueOptions Outcomes Measurement System, FY11; NAMI MD.

Southern Region

Southern Region (Charles, St. Mary's, and Calvert) is projected to be the fastest-growing region in the next ten years, but its geographic location makes it less accessible than others. The region is located on a rural peninsula surrounded on three sides by the Chesapeake Bay, Potomac River and is divided by the Patuxent River. Southern Region links to remainder of Maryland and Washington D.C. metro area through Prince George's and Anne Arundel Counties. Forest and agricultural land uses comprise over 75% of total land cover. Southern Region is one of the smallest in the state, comprising 6% of the population, but is also relatively affluent, with a median household income of $83,724 and median housing value of $354,367. Southern Region serves the smallest percentage of consumers with mental illness but has highest rate of arrested or in jail/prison in the last six months.[35]

County Health Ranking, 2011

County	Rank		
	Health Outcomes	Health Behaviors	Access to Care
Calvert	6	13	8
Charles	11	11	11
St. Mary's	7	15	13
Southern	**2**	**3**	**3**

Southern Community Statistics, 2011

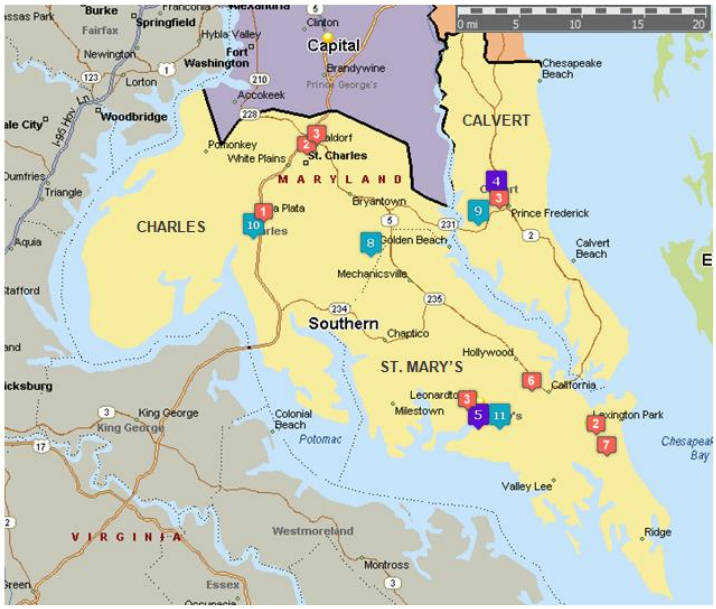
Metric	Data
% of Total Population (n=)	6%
% >65 Years Old	10%
Rural Population Rate	47%
Mental Health Provider Ratio	7,401:1
Primary Care Provider Ratio	1,737:1
Uninsured Adults Rate	13%
Unemployment Rate	6%
Incarcerated (2002)	605
Veterans as % of Population	12%

Southern Mental Health Outcomes, FY11*

Metric	Data
Expenses / Consumer	$3,400
% Budget	3%
% State Hospital Patients	3%
% Community Claims	3%
% Homeless	5%
% Homeless in Last 6 Mths	15%
% Dissatisfied with Recovery	15%
% Arrested in Last 6 Mths	11%
% In Jail/Prison in Last 6 Mths	11%

Southern Region providers fewer mental health resources than other regions in the state. Only two acute care hospitals provide inpatient care to individuals admitted by a state hospital (Calvert Memorial Hospital and St. Mary's Hospital) while no state hospitals exist in the region. Three county detention centers and one correctional facility are spread out across the region.

Southern Community Provider/Resource Location for Adult State Hospital Patients, FY11



	Site	Service Category
1	Charles County Freedom Landing	RRP, PRP
2	Vesta, Inc.	RRP, PRP
3	Southern MD Community Network	RRP, PRP
4	Calvert Memorial Hospital	Inpatient
5	St. Mary's Hospital	Inpatient
6	Pathways Inc	RRP, PRP, Supportive Empl.
7	Rock Creek Foundation	RRP, PRP
8	Southern MD Pre-Release Unit	Correctional Facility
9	Calvert County Detention Center	Detention Center
10	Charles County Detention Center	Detention Center
11	St. Mary's County Detention Center	Detention Center

1 Correctional Facility/ Detention Center
1 State Hospital Provider
6 Non-IP Community Provider
6 IP Community Provider

Note: Excludes outpatient service category and individual physician providers. Analysis includes adults (18+) only. Supportive Empl. = Supportive Employment; RRP = residential rehabilitation program; PRP = psychiatric rehabilitation program.

[35] Note: Outcomes Measurement System survey sample (n) = 1,911.
Source: Nielsen Claritas; U.S. Census Bureau/American Community Survey (ACS); County Health Rankings; Medicare claims/Dartmouth Atlas; Bureau of Labor Statistics; Health Resources & Services Administration; Maryland ValueOptions Outcomes Measurement System, FY11; NAMI MD.

Eastern Shore Region

Eastern Shore Region (Cecil, Kent, Queen Anne's, Talbot, Caroline, Dorchester, Wicomico, Somerset, and Worcester) represents one third of Maryland in size but serves only 10% of state hospital admissions. The region lies predominantly on east side of Chesapeake Bay. Eastern Shore Region comprises 8% of the population, with a median household income of $53,586 and median housing value of $254,133. Ten percent of state hospital patients and 15% of community claims originate from Eastern Shore.[36]

County Health Ranking, 2011

County	Rank		
	Health Outcomes	Health Behaviors	Access to Care
Caroline	20	22	23
Cecil	18	20	15
Dorchester	22	21	18
Kent	17	12	12
Queen Anne's	3	9	17
Somerset	21	24	24
Talbot	8	3	10
Wicomico	19	19	19
Worcester	14	14	21
Eastern MD	**3**	**4**	**5**

Eastern Community Statistics, 2011

Metric	Data
% of Total Population	8%
% >65 Years Old	16%
Rural Population Rate	56%
Mental Health Provider Ratio	4,361:1
Primary Care Provider Ratio	1,234:1
Uninsured Adults Rate	19%
Unemployment Rate	9%
Incarcerated (2002)	1,265
Veterans as % of Population	10%

Eastern Mental Health Outcomes, FY11*

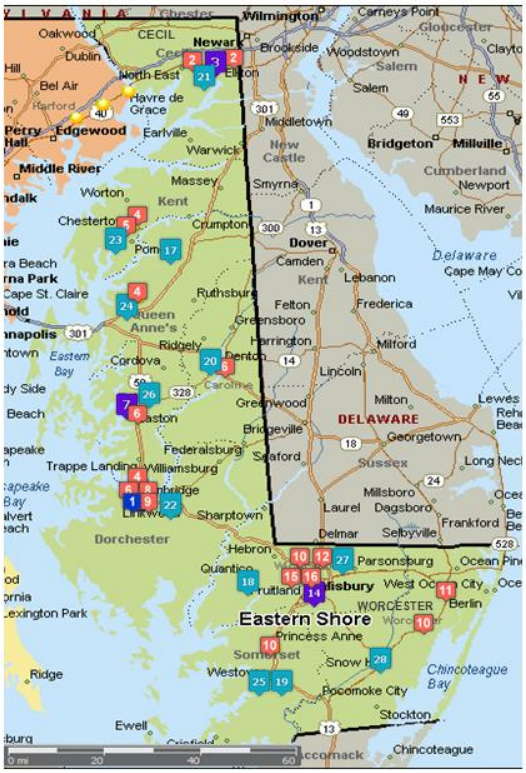
Metric	Data
Expenses / Consumer	$3,611
% Budget	9%
% State Hospital Patients	10%
% Community Claims	15%
% Homeless	4%
% Homeless in Last 6 Mths	12%
% Dissatisfied with Recovery	17%
% Arrested in Last 6 Mths	8%
% In Jail/Prison in Last 6 Mths	8%

Eastern Shore resources are centered in Elkton, Salisbury and Cambridge. Eastern Shore Hospital Center, a state psychiatric hospital, is located in Cambridge. Several county detention centers and correctional facilities are located throughout the region as well.

Eastern Shore Community Provider/Resource Location for Adult State Hospital Patients, FY11

	Provider	Service Category
1	Eastern Shore Hospital Center	State-Owned Hospital
2	Upper Bay Counseling & Support Services	RRP, PRP
3	Union Hospital of Cecil County	Inpatient
4	Crossroads Community Inc	RRP, Case Mgmt, PRP, Supportive Empl.
5	Psychotherapeutic Treatment	RRP, PRP
6	Channel Marker	RRP, PRP
7	Memorial Hospital at Easton*	Inpatient
8	Delmarva Family Resources	PRP
9	Adventist Behavioral Health Eastern	Residential Treatment
10	Go-Getters Inc	RRP, PRP, Crisis, Supportive Empl.
11	Worcester County Targeted Case Management	Case Management
12	Lower Shore Clinic	Mobile Treatment
14	Peninsula Regional Med Ct	Inpatient
15	Family Service Foundation	RRP, PRP
16	Wicomico Behavioral Health	Case Management
17	Eastern Pre-Release Unit	Correctional Facility
18	Poplar Hill Pre-Release Unit	Correctional Facility
19	Eastern Correctional Institution	Correctional Facility
20	Caroline County Detention Center	Detention Center
21	Cecil County Detention Center	Detention Center
22	Dorchester County Detention Center	Detention Center
23	Kent County Detention Center	Detention Center
24	Queen Anne's County Detention Center	Detention Center
25	Somerset County Detention Center	Detention Center
26	Talbot County Department of Corrections	Correctional Facility
27	Wicomico County Detention Center	Detention Center
28	Worcester County Detention Center	Detention Center

6 Non-IP Community Provider
6 IP Community Provider
1 Correctional Facility/ Detention Center
1 State Hospital Provider



Note: Excludes outpatient service category and individual physician providers. Analysis includes adults (18+) only. Supportive Empl. = Supportive Employment. PRP = psychiatric rehabilitation program; RRP = residential rehabilitation program.

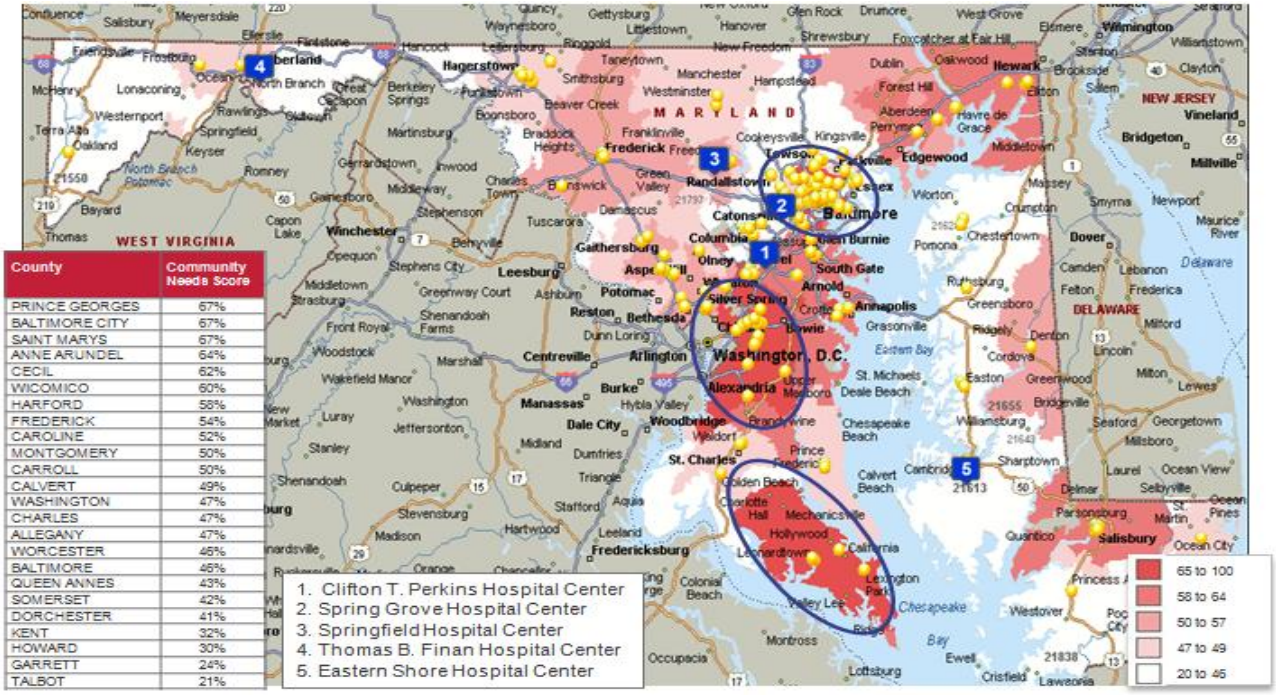
[36] Note: Outcomes Measurement System survey sample (n) = 5,079. Source: Nielsen Claritas; U.S. Census Bureau/American Community Survey (ACS); County Health Rankings; Medicare claims/Dartmouth Atlas; Bureau of Labor Statistics; Health Resources & Services Administration; Maryland ValueOptions Outcomes Measurement System, FY11; NAMI MD.

Geographic Placement of Community Services

It has long been recognized that lower income areas have higher rates of illness and hospital utilization than those who live in areas that are more affluent. The areas in Maryland in greatest need of community resources were determined by ranking the state's ZIP codes with respect to a number of weighted factors, including the number of state patients served in the community, the percent of mental health consumers who are homeless, unemployed, or arrested, as well as several others.[37] This weighted community need score was then overlaid with a map of existing community resources to understand where resources maybe located relative to need. This information can be useful for considering placement of new community services.

According to this ranking, community resource need is greatest in Prince George's County, Baltimore City and St. Mary's County. The Community Need Map below depicts the neediest regions for State of Maryland to deliver community services. Yellow circles on the map represent community resources utilized by state hospital patients throughout the state. Geographic availability of community services varies considerably across the state. Baltimore City is tied for highest community need but also has highest concentration of community resources. There is opportunity to address disparities in community provider services in Prince George's, Anne Arundel and St. Mary's; however, accessibility to Southern Region creates high barriers to entry. Addressing community need successfully will require a coordinated network of services and platform for patient engagement.

Community Need Map



County	Community Needs Score
PRINCE GEORGES	67%
BALTIMORE CITY	67%
SAINT MARYS	67%
ANNE ARUNDEL	64%
CECIL	62%
WICOMICO	60%
HARFORD	58%
FREDERICK	54%
CAROLINE	52%
MONTGOMERY	50%
CARROLL	50%
CALVERT	49%
WASHINGTON	47%
CHARLES	47%
ALLEGANY	47%
WORCESTER	46%
BALTIMORE	46%
QUEEN ANNES	43%
SOMERSET	42%
DORCHESTER	41%
KENT	32%
HOWARD	30%
GARRETT	24%
TALBOT	21%

[37] For a full list of metrics and weightings used in community need ranking, see Appendix I.
Source: Nielsen Claritas; U.S. Census Bureau/American Community Survey (ACS); County Health Rankings; Medicare claims/Dartmouth Atlas; Bureau of Labor Statistics; Health Resources & Services Administration; Maryland ValueOptions Outcomes Measurement System, FY11; NAMI MD; Cannon Design analysis.

Geographic Evaluation Summary: Addressing Community Services Variation

Using outcomes from the above Geographic Assessment, specific recommendations are listed below by region to better serve Maryland's mental health consumers in the community setting.

Capital: Focus on establishing independence.

Capital Region serves 26% of community claims submitted by state hospital patients but spends the most per consumer. It has the lowest mix of consumers in independent housing, but also the highest mix of consumers in community housing compared to all regions. The region houses 17 providers of PRP/RRP services that account for nearly all PRP/RRP claims in the region; only 0.3% of PRP/RRP claims are submitted from providers outside Capital Region for those who live in the region.

Central: Focus on community beds and outcomes.

Serving 51% of community claims submitted by state hospital patients, Central Region also contains the majority of community resources. However, the region has the highest percentage of homeless mental health consumers in the last six months and highest rate of consumers dissatisfied with their recovery. Baltimore City has the lowest health outcomes among all counties. Central Region offers the largest number (25) of PRP/RRP providers, yet 5% of PRP/RRP consumers in Central Region commute to Capital Region providers.

Eastern Shore: Focus on mental health outcomes.

Serving 15% of community claims submitted by state hospital patients, Eastern Shore Region has the highest percentage of overweight or obese consumers in the state. The region is the largest by land area yet resources are concentrated in Elkton, Cambridge and Newark. Nearly all (98%) of PRP/RRP claims submitted by Eastern Shore residents are served by the eight providers of PRP/RRP services in the region.

Southern: Focus on readmissions.

Southern Region serves 3% of community claims submitted by state hospital patients and has the fewest number of community resources in the state. The region also has the highest mix of consumers who were arrested or in jail or prison in the last six months, as well as the highest mix of consumers considering themselves in “poor” health. Five providers of PRP/RRP services are located in the region, while there are no crisis services utilized by state patients. Lastly, 13% of PRP/RRP claims from consumers in Southern Region are submitted by providers in Capital and Central Regions.

Western: Focus on accessibility.

Western Region serves 5% of community claims submitted by state hospital patients. The region has the lowest mix of homeless mental health consumers and the highest mix of independent consumers, yet the second highest rate of consumer dissatisfaction with recovery. Only 1% of PRP/RRP claims from consumers in Western Region are submitted by providers outside of the region; the rest are served by the four providers of PRP/RRP services within Western Region. One note in particular concerning Western Maryland is with regards to the challenge of providing quality health care services and delivery to rural Maryland, largely due to the geographic distance from urban hubs and lack of critical population mass to sustain a variety of mental health services. It will be necessary to make extra effort to address health care disparities in these rural areas.

Appendix H: Community Program Inventory

The following section includes a listing of various mental health community providers. This listing is not intended to be a comprehensive inventory of all resources available in Maryland, but rather to depict the relative quantity and location of the major providers that offer services to individuals who have been admitted to the state hospital system. Out-of-state providers and outpatient providers (including individual physician practices) have been excluded from this inventory.

Existing Community Interventions
Opportunities for diversion exist at a number of points along the continuum from pre-arrest, to post-booking and pretrial, to pre-sentence. However, the success of diversion efforts is largely dependent on the responsiveness of many different agencies.

PRE-ARREST DIVERSION (PRE-BOOKING)
CRISIS INTERVENTION TEAMS (CIT): DHMH has worked with local core service agencies, National Alliance on Mental Illness (NAMI), and law enforcement agencies to train officers in working with individuals with a mental illness and in partnering police officers with a clinical/crisis response organization.

CRISIS RESPONSE: Crisis response provides a multidisciplinary approach to addressing the immediate needs of an individual with mental illness who consents to treatment. It provides medical services in the least restrictive setting as an alternative to emergency care interventions. Throughout the state, the MHA and local core service agencies have been developing and promoting the use of mobile crisis teams and crisis response units.

TRAINING RESOURCES FOR TRAUMA: The National Association of Public Forensic Hospitals has offered to assist the Baltimore City Mental Health Court in coordinating a training initiative by national experts for a diverse and broad group of attendees on trauma, the impact of trauma on victims, and programming for trauma victims. BMHS is working with the BCDC to train detention center staff on how to identify mental illness and how to manage the detainee with mental illness.

TRANSITIONAL/DIVERSION PROGRAM FOR PREGNANT WOMEN: The Maryland Chapter of the National Association of Women Judges, the Department of Public Safety and Correctional Services, the Alcohol and Drug Abuse Administration, Baltimore Mental Health Systems, are working on the creation of a transitional/diversion program for pregnant women in the criminal justice system. The program would provide a wide range of services as well as integrated assessment, planning, and treatment.

PRE-TRIAL DIVERSION (POST-BOOKING)
BALTIMORE CITY FAST: The Forensic Alternative Services Team (FAST) program is a group of clinicians who work with the police, BCDC, State and defense, and community providers to coordinate treatment and housing. FAST also screens for participation in the mental health court. A FAST staff member is the mental health court coordinator who monitors the release of some defendants with minor records and non-violent charges, and provides guidance to probation and pretrial service agents who supervise defendants whose criminal record is more extensive than those eligible for FAST monitoring.

CIVIL ADMISSION/EMERGENCY PETITION PROCESS can be an effective diversion mechanism. However, unless emergency rooms promptly relieve the police of the non-violent evaluee and include emergency petitions as a priority in the triage system, there is a disincentive to use this form of diversion for the offender with mental illness.

DATALINK: BMHS has established a database called DataLink, implemented in July 2006. This system provides a list of newly admitted detainees to MHA's ASOs, which cross-references the list with people receiving services in the Public Mental Health System prior to the incarceration. This information is then sent to BMHS where staff determines further intervention needs and develops a course of action.

MONTGOMERY COUNTY supplements funds that are available through other sources, including federal and state entitlements. The Montgomery County Police Department CIT works together with the local core service agency to divert appropriate, willing individuals with mental health crises, by utilization of mobile crisis teams and residential crisis services. There is also a range of services in the Montgomery County Detention Center, including a mental health unit, substance abuse treatment, and a re-entry program specifically for inmates requiring mental health services in the community upon discharge.

Public Mental Health Services	
Mobile Crisis Services	Mental health teams go to community locations where a person is in crisis. Services help consumer reduce uncomfortable symptoms and get back to feeling safe.
Wellness and Recovery Action Plan (WRAP)	Program developed by people with mental health challenges. Taught by consumers.
Case Management	Connects patients to community services and resources.
Mental Health Vocational Programs (Supported Employment)	Helps people prepare for work, find and keep a job and make job decisions.
IP Psychiatric Services	Treatment provided in hospitals.
Outpatient Mental Health Centers	Treatment provided by mental health professionals in a community clinic or group practice.
Psychiatric Day Treatment (partial hospitalization)	Intensive, non-residential treatment for at least 4 consecutive hours per day in a hospital or free standing community mental health Program.
Psychiatric Rehabilitation Program	Services improve or restore skills needed to live work, learn and participate in the Community.
Psychiatric Residential Facility Demonstration Waiver (also called “RTC Waiver”)	Services provide community-based alternatives to placement in a residential treatment center (RTC). For children youth and transitional adults.
Residential Crisis Services	Short term intensive mental health services and support to prevent unnecessary psychiatric inpatient admissions.
Residential Treatment Center (RTC)	Campus-based intensive treatment setting. Children may be admitted to RTCs when services available in the community cannot meet their Needs. For children, youth and young transitional adults.
Residential Rehabilitation Programs (RRP)	Consumers live in a supportive environment that enables them to develop daily skills for independent living.
Respite Services	Enhanced support to caregivers and temporary relief from the responsibilities of caring for someone with a mental illness.
Assertive Community Treatment (ACT)	EBP program in conjunction with U. of Maryland. Team-based intensive community services for people with severe mental illness who may be homeless and at high risk for hospital admission.

Consumer Operated Programs and Services	
On Our Own of Maryland	Statewide mental health consumer education and advocacy organization. Provides education, training and technical assistance to consumers, providers and the general public.
Main Street Housing (MSH)	Part of On Our Own of Maryland. MSH mission is to develop quality, safe, affordable, and permanent housing for people with mental illness. Offer affordable rental units solely to individuals and families with mental illness.
Consumer Quality Team of Maryland (CQT)	Employs consumers and family members to conduct announced and unannounced site visits to mental health facilities throughout Maryland.
Wellness and Recovery Centers	Education, training, peer support and social activities. Services vary by center. Most centers provide support groups, warm-line support.

Core Services Agencies in Maryland

Maryland's Core Service Agencies (CSAs) plan, develop, and manage a full range of treatment and rehabilitation services for persons with serious mental illness in their jurisdictions. CSAs collaborate with other agencies to promote comprehensive services for individuals with mental illness who have multiple

human needs. CSAs promote the development of accessible, high quality, community based, comprehensive mental health services throughout Maryland. CSAs promote wellness by improving behavioral health in Maryland through collaborative partnerships.

Core Services Agencies	
Allegany Co. Mental Health System's Office	Cumberland, MD, Allegany County
Anne Arundel County Mental Health Agency	Annapolis, MD, Anne Arundel County
Baltimore Mental Health Systems, Inc.	Baltimore, MD, Baltimore City
Bureau of Behavioral Health of Baltimore County Health Dept.	Baltimore, MD, Baltimore County
Calvert County Core Service Agency	Prince Frederick, MD, Calvert County
Carroll County Core Service Agency	Westminster, MD, Carroll County
Cecil County Core Service Agency	Elkton, MD, Cecil County
Department of Health (Charles County)	White Plains, MD, Charles County
Mental Health Management Agency of Frederick County	Frederick, MD, Frederick County
Garrett County Core Service Agency	Oakland, MD, Garrett County
Office on Mental Health of Harford County	Bel Air, MD, Harford County
Howard County Mental Health Authority	Columbia, MD, Howard County
Mid-Shore Mental Health Systems, Inc.	Easton, MD (Serving Counties of Caroline, Dorchester, Kent, Queen Anne and Talbot)
Department of Health and Human Services, Montgomery County Government	Rockville, MD, Montgomery County
Department of Family Services Mental Health and Disabilities Division Prince George's County Core Service Agency	Camp Springs, MD, Prince George's County
St. Mary's County Department of Aging and Human Services	Leonardtown, MD, St. Mary's County
Washington County Mental Health Authority	Hagerstown, MD, Washington County
Wicomico Somerset County Regional Core Service Agency	Salisbury, MD, Wicomico/Somerset Counties
Worcester County Core Service Agency	Snow Hill, MD, Worcester County

Residential Rehabilitation Programs (RRP) in Maryland

To be eligible for placement applicants must go through their counties' CSA. RRPs assist those who have a serious mental illness and are in need of psychiatric rehabilitation in a supervised residential setting. They provide housing, support around areas of personal needs such as medication monitoring, development of independent living skills and developing a plan to transition to his/her own housing.

Residential Rehabilitation Programs	City
Alliance Inc	Baltimore, Belcamp, Rosedale, Bel Air
Archway Station Inc	Cumberland, Frostburg
Arundel Lodge Inc	Edgewater
Channel Marker Inc	Easton, Denton, Cambridge
Crossroads Community Inc	Centreville, Cambridge, Chestertown
Family Services Foundation	Landover Hills, Frederick, Baltimore
Family Services Inc	Gaithersburg
Go-Getters Inc	Salisbury, Newark, Princess Anne
Granite House (Mosaic Community Services)	Westminster
Guide PRP	Laurel, Germantown
Harford-Belair Community Mental Health Center	Baltimore
Humanim	Columbia, Baltimore, Towson
Key Point	Catonsville, Baltimore, Aberdeen
Mosaic Community Services	Lutherville-Timonium, Catonsville, Baltimore, Randallstown,

	Westminster, Towson
Omni House Inc	Glen Burnie
Pathways Inc	Hollywood
People Encouraging People	Baltimore, Glen Burnie, Hyattsville, Rockville
Prologue, Inc	Sykesville
PRS Day Program	Landover
Psychotherapeutic Treatment Services, Inc	Annapolis
Rehabilitation Systems Inc	Lanham
Rock Creek Foundation	Silver Spring, Lexington Park
St. Luke's House Inc	Salisbury
Threshold Services	Silver Spring
Upper Bay CSS	Elkton, Havre de Grace
Vesta Inc	Forestville, Lanham, Odenton, Waldorf
Volunteers of America Chesapeake	Baltimore, Lanham
Way Station	Frederick, Columbia, Turning Point (Hagerstown)

Psychiatric Rehabilitation Programs (PRP) in Maryland

PRPs (day programs) are for adults with serious and persistent mental illness. PRPs provide services improve or restore skills needed to live work, learn and participate in the community.

Psychiatric Rehabilitation Programs	City
Alliance Inc	Baltimore, Belcamp, Rosedale, Bel Air
Channel Marker Inc	Easton, Denton, Cambridge
Crossroads Community Inc	Centreville, Cambridge, Chestertown
Family Services Foundation	Landover Hills, Frederick, Baltimore
Family Services Inc	Gaithersburg
Foundation PRP	Linthicum
Go-Getters Inc	Salisbury, Newark, Princess Anne
Granite House, Inc (Mosaic Community Services)	Westminster
Guide PRP	Laurel, Germantown
Harford-Belair Community Mental Health Center	Baltimore
Key Point	Catonsville, Baltimore, Aberdeen
Mosaic Community Services	Lutherville-Timonium, Catonsville, Baltimore, Randallstown, Westminster, Towson
Omni House Inc	Glen Burnie
People Encouraging People	Baltimore, Glen Burnie, Hyattsville, Rockville
Prologue, Inc	Sykesville
PRS Day Program	Landover
St. Luke's House Inc	Salisbury
Step by Step of Maryland, LLC	Baltimore
Vesta Inc	Germantown, Forestville, Lanham, Lexington, Odenton, Waldorf
Way Station Day PRP	Frederick, Columbia, Hagerstown

Alternative Living Units in Maryland
Alternative Living Units are homes or apartments that accommodate up to three individuals with severe and profound disabilities.

Alternative Living Units	City/County
Center for Social Change	Elkridge
CHI Centers, INC	Montgomery, Prince George's County
Institute of Professional Practice – Mid-Atlantic Human Services	Nottingham (serves Baltimore County, Harford County, and Eastern Shore)
Target Community and Educational Services	Westminster, Gaithersburg
Alternative Living Unit 1	Cumberland

Community Mental Health and Outreach Programs in Maryland

Community Programs	City
Key Point	Aberdeen, Catonsville, Baltimore
Alliance Inc	Baltimore, Belcamp, Rosedale, Bel Air

Resources for Special Needs Populations
Maryland has a number of programs that promote prevention of recidivism to homelessness, detention centers, and psychiatric hospitals, and deliver services to adults with special needs.

Special Needs Population Resources	
Maryland Community Criminal Justice Program (MCCJTP)	Offers in 23 local jurisdictions to meet comprehensive needs of vulnerable population and reduce recidivism to homelessness, detention centers, and psychiatric hospitals.
Shelter Plus Care Housing	Shelter Plus Care Housing Program provides tenant and/or sponsor-based rental assistance to individuals and families with an adult member who has a serious mental illness, who are homeless and are being released from the local detention centers, as well as individuals and families with an adult member who is on parole and probation, who are homeless and are at risk for incarceration.
TAMAR Program	Program provides array of training and clinical services and currently serves male and female inmates who have serious mental illnesses, a co-occurring substance use disorders, and histories of trauma.
PATH (Projects for Assistance in Transition from Homelessness)	PATH provides flexible community and detention center-based services to individuals who are homeless and have a mental illness. Services include screening and assessments, rehabilitation and habilitation services, case management linkage to housing, referrals to primary health and mental health, employment and education services, housing assistance, security deposits, one-time only funds to prevent eviction in Baltimore City and 22 counties in Maryland, and other services.
Deaf Services	Separate unit at Springfield Hospital serving deaf consumers in need of hospitalization.
Behavioral Health Disaster Services	MHA has been the recipient of several grants from SAMHSA's Center for Mental Health Services and the Federal Emergency Mgmt. Agency.
Chrysalis House Healthy Start Program	Provides a comprehensive assessment of the women's needs, access to appropriate treatment resources, and the provision of services and support services designed to meet the needs of women and their babies.
SOAR Initiative	SSI/SSDI Outreach, Access and Recovery (SOAR) is a strategy that helps states to increase access to mainstream benefits for individuals who are homeless or at risk of homelessness through training, technical assistance and strategic planning.

Community Supported Living Arrangement (CSLA)

CSLAs provide individuals with the support necessary to enable them to live in their own homes, apartments, family homes, or rental units with no more than two other non-related recipients of these services or members of the same family.

Southern Maryland	
Arc of Montgomery County	Jewish Foundation For Group Homes
Arc of Prince Georges County	Jewish Social Service Agency
Arc of Southern Maryland	Jubilee Association
Bay Community Support Services, Inc.	Maryland Community Connection
Brotherhood And Sisterhood International	Melwood Horticultural Training Center
Calmra	My Own Place, Inc.
CHI Centers, Inc.	National Children's Center, Inc.
CIS&H	The Treatment and Learning Centers/Outcomes
Community Support Services	SEEC
Compass, Inc	SMVI
Comprehensive Residential Systems	Social Health Service Group
EBED Community Improvement	Spring Dell Center
Emerge	Sykesville Woods Inc
Family Service Foundation, Inc.	The Center for Life Enrichment
Full Citizenship Of Maryland	The Rock Creek Foundation
Head Injury Rehabilitation And Referral Services	UCP on the Potomac (Sunrise Community)
	V & T Residential Services

Eastern Shore	Western Maryland
Bayside Community Network, Inc.	Appalachian Parents Association
Bay Shore Services, Inc	Arc of Carroll County
Caroline Center	Arc of Washington County
Chesapeake Care Resources	Change
Chesapeake Center	Community Living, Inc.
Deaf Independent Living Association, Inc.	Family Service Foundation, Inc.
Dove Pointe	Flying Colors Of Success, Inc.
Epilepsy Association of the Eastern Shore	Friends Aware, Inc.
Somerset Community Services	MedSource Community Services, Inc.
United Cerebral Palsy of Central Maryland	Spectrum Support
Worcester County Developmental Center	

Central Maryland		
Abilities Network	Home-Sweet-Home, Inc.	Delmarva Community Services
Alliance	Humanim, Inc.	Dominion Resource Center
Arc of the Central Chesapeake	Itineris, Inc	Emerge
The Arc Baltimore	Jewish Community Services	Empowerment Options, Inc.
Arc of Howard County	Langton Green	Family Service Foundation, Inc.
Arc of Northern Chesapeake Region	Life	Fidelity Resources
Athelas Institute	Maxim Health Services	Forward Visions
Bay Community Support Services, Inc.	NorthStar Special Services, Inc	Freedom To Choose
Bello Machre, Inc.	Penn-Mar Organization	Shura Incorporated
Center For Community Integration	Precision Healthcare Resources Inc	Son-Grace, Inc
Center for Social Change	Providence Center	Starflight Enterprises
Chesterwye Center	Quantum Leap, Inc.	St. Patrick's Homes, Inc.
Creative Options	Richcroft	The Chimes / Intervals MD
	Shared Support Maryland, Inc.	United Cerebral Palsy of Central Maryland

Appendix I. Data Sources and Methodology

This study relied on a number of databases provided by each state facility, as well as state and national-level databases. The data in this report describes the use of inpatient and community services specifically for individuals served by the state psychiatric hospitals. Data for juveniles and children have been excluded from this study. It should also be noted that the community data presented does not reflect all claims filed within the publicly-funded mental health system as services funded by Medicare and through grant-funded contracts was not provided or available. Community claims data represents those individuals utilizing services funded through the public fee-for-service system. The lists below details these files and provides a brief description of the uses made of each in the study:

File	Year	Source	Description
Historical Trends			
Inpatient data	FY09 – FY12YTD	HMIS	Patient-level state psychiatric hospital inpatient admission and discharge data, FY09-FY12YTD.
HMIS Psychiatric Hospital Facility Report	FY02 – FY11	HMIS	Historical state psychiatric hospital trends. Using unique identifier based on demographic variables, able to link data from HMIS and PMHS
Community claims	FY09-FY12YTD	PMHS	Maryland patient-level community claims for Medicaid and uninsured from FY10-FY12YTD.
State psychiatric bed capacity	FY80-FY12YTD	Dept of Budget & Management	Historical state hospital closures and available bed capacity year over year.
Community consumer trends	2011	MHA	MHA Quarterly Report 2011, report run 10/6/2011.
State psychiatric hospital expenditures	FY02-FY13	Dept of Budget & Management	Maryland budget highlights for FY02 to FY13 Allowance.
FY13 Maryland Budget	FY13	Department of Legislative Services, DHMH	Analysis of the FY 2013 Maryland Executive Budget.
Future Trends			
Jail statistics	2002-2011	DPS, Division of Pre-Trial Detention and Services	New admissions and exits data; average daily population; jail rosters.
Court case statistics	2002 – 2011	Maryland State Courts	Criminal court cases and trial case trends.
Population files	2011	Nielsen Claritas	2011-2015 data from the U.S. Bureau of the Census adapted by Nielsen Claritas, Inc. to zip code geography; includes age specific counts of residents by zip code.
Inpatient psychiatric volume forecast	2011-2021	Advisory Board	10-year inpatient psychiatric volume forecast developed by The Advisory Board Company (www.advisory.com). The inpatient market estimator projects future inpatient volumes by diagnosis-related group (DRG) for a particular region of the country (not hospital-specific).
Maryland population estimates	2011-2021	Nielsen Claritas	2011 population estimates and 2016 population projections by ZIP and county in Maryland. Cannon Design used straight-line analysis to forecast 2021 population.
County rankings	2012	County Health	Project created by The Robert Wood Johnson

		Rankings	Foundation and the University of Wisconsin Population Health Institute. The program ranks every county in the United States, focusing on specific factors that we known affect health, such as education and income, with the end goal of helping communities create solutions that make it easier for people to be healthy.
Benchmarks and Outcomes			
National outcome measures	2009-2010	NOMS	Maryland 2009 & 2010 Mental Health National Outcome Measures (NOMS) from CMHS Uniform Reporting System.
Maryland outcomes	FY11	Outcomes Measurement System, ValueOptions	MHA Outcomes Measurement System, ValueOptions® Maryland . The OMS Datamart is designed to track how individuals receiving outpatient mental health treatment services in Maryland's Public Mental Health System are doing over time in various life domains including housing, employment/school, psychiatric symptoms, functioning, substance abuse, legal system involvement, and general health.
Other			
Region definitions	2008		Western: Garrett, Allegany, Washington Capital: Frederick, Montgomery, Prince George's Central: Anne Arundel, Baltimore City, Baltimore, Carroll, Howard, Harford Southern: Calvert, Charles, St. Mary's Eastern Shore: Caroline, Cecil, Dorchester, Kent, Queen Anne's, Somerset, Talbot, Wicomico, Worcester.
Average Daily Population (ADP)			Number of patient days per year divided by the number of days in the year.
Average Length of Stay (ALOS)			ALOS is calculated based on true admission and discharge date (total days from discharged patients divided by total discharges).
Bed Occupancy Calculation		Cannon Design	Number of occupied beds divided by number of available staffed beds times 100.
Acute Care Bed Occupancy Target		Cannon Design	Target 85% occupancy rate recommended for acute care providers.
State Psychiatric Bed Occupancy Target		Cannon Design	Target occupancy rate of 95% applied to calculations.
Bed Need Calculation		Cannon Design	Projected bed need was calculated by summing total anticipated state psychiatric inpatient days (anticipated annual admissions by patient type times average length of stay by patient type) and dividing total patient days by 365 days to yield the projected average daily census. Final numbers were calculated with a 95% confidence interval or 95% probability that adequate bed capacity will exist for an unscheduled admission.

Forecast Assumptions

Criminal Court Cases	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY05-11 %	CAGR
Criminal Court Cases Filed	68,584	70,790	73,028	72,684	63,076	67,548	67,102	-1.5%	-0.2%
Criminal Trial Dispositions	198,403	201,779	194,755	196,136	194,087	184,869	181,410	-8.6%	-0.9%
MD evaluations and pre-trial screenings for IST (2010)	789								

Incarcerated Prison Population	2000	2009	2010
Prison Population	23,538	22,255	22,645
Imprisonment rate (out of 100K)		382	387
Prison Capacity			23,016
Capacity %			99%
Prevalence of Mental Illness			16.2%
% co-occurring substance abuse			75%

Actual State Psychiatric LOS (days)	FY09	FY10	FY11	FY12
Pre-Trial	267	306	283	278
IST	210	217	169	200
NGRI/NCR	355	488	402	352
Charges and/or Convicted	46	93	109	115
No Justice Involvement/Non-Forensic	501	542	552	586

Community Need Scoring Factors

Metric	Source	Weighting
State Hospital Patients Served	MHA Community Patient-level data	15%
2021 Population Density Projection	Nielsen Claritas	5%
Homeless Score	MHA Outcomes Measurement System (OMS)	10%
Dissatisfied with Recovery	MHA OMS	5%
Arrested in Last 6 Months?	MHA OMS	10%
In Jail/Prison Last 6 Months?	MHA OMS	10%
Mentally Ill Consumers Employed?	MHA OMS	10%
Uninsured	County Health Rankings 2012	5%
PCP Ratio	County Health Rankings 2012	5%
Mental Health Provider Ratio	County Health Rankings 2012	10%
Access to Care	County Health Rankings 2012	5%
Violent Crime Rate	County Health Rankings 2012	10%

Bed Forecast Methodology

The demand projection for total state psychiatric hospital admissions were fed into the calculation for needed bed capacity over the next ten years. The methodology assumed the following general principles:

- Forecasting is not just a mathematical exercise. Forecasting involves interpretation of statewide trends and application of trends in continuing or altering future demand , thus it is essential that a broad group of stakeholders have input into the process.

- Forecasts are not in themselves methodologies for eliminating shortages or surpluses of hospital bed capacity; rather, they are intended to be used as one evidence point about the future and in determining whether to alter a potential surplus or shortage through some implementation strategy.

- Volume and bed need projections are based on a combination of actual historical and projected utilization of state psychiatric hospital services, with available market data from secondary sources. While recent data may best reflect current policies and practices, the forecast also utilized historical demographic and utilization data to examine longer-term trends and to provide context to current data.

- Ten year population projections from Nielsen Claritas, a data analytics company, utilize both a top-down and bottom-up methodology Post-census data for tracts and block groups drive estimates at the top-down level, while data from USPS, local government agencies, Valassis new construction data, Hanley Wood residential development counts and the Nielsen Claritas Master Address File drives the bottom-up approach.

- Statewide use of a standard occupancy rate in order to efficiently utilize hospital bed capacity without compromising necessary access to care.

- Trend-adjustment of hospital admissions

The following details a step-by-step description of the method utilized to forecast bed capacity.

1. Trend information on hospital utilization was compiled. Historical utilization data included state admissions by age, legal status, diagnosis, length of stay and patient days).
2. Use rate trend lines and their slopes were calculated.
3. Adjustments to forecast utilizing statewide trends . Changes in the projected area population are based on a number of assumptions regarding net migration, fertility rates and mortality rates.
4. Historical data was modeled and analyzed to determine whether a time series was stationary or whether any significant seasonality for admissions could be observed. After ruling out seasonality impact, admissions and length of data were smoothed using nonparametric smoothing methods.
5. Projections originally split into two main segments
    a. Forensically-involved individuals, taking into account court case trends, prison capacity, competency evaluation trends, LOS for cases classified as IST, NGI/NCR, prevalence of mental illness among incarcerated, and
    b. Civilly-committed individuals incorporating baseline clinical inpatient psychiatric growth for Maryland by region, potential candidates for state admissions from wait lists of non-state operated hospitals, and LOS trends for individuals classified as No Justice System involvement.
6. Projections were tested for 95% confidence interval.
7. Forecasted segments were then further broken down into the four identified patient types (Short Stays, Medically Complex, Difficult-to-Discharge and Readmitted) to further correlate to the community scenarios.
8. Bed capacity estimates took into account projected trends for length of stay and total patient days.

Community Strategy Impact Sources

Community Strategy	Citation	Description of Study
Peer Networks	Sledge, William H.; Martha Lawless; David Sells; Melissa Wieland; Maria J. O'Connell; Larry Davidson. "Effectiveness of Peer Support in Reducing Readmissions of Persons With Multiple Psychiatric Hospitalizations." *Psychiatric Services* 62.5 (2011). *PsychiatryOnline*. 1 May 2011. Web. 18 June 2012.	The aim of this study was to observe the effectiveness of using peer support to reduce recurrent psychiatric hospitalizations. Study participants who were assigned a peer mentor experienced significantly fewer rehospitalizations and fewer hospital days compared to those who had no peer support.
	Lawn, Sharon, Ann Smith, Kelly Hunter. "Mental health peer support for hospital avoidance and early discharge: An Australian example of consumer driven and operated service." *Journal of Mental Health*, 17.5 (2008): 498 – 508. Web. 18 June 2012.	Evaluation of the first 3 months of operation of an Australian mental health peer support service providing hospital avoidance and early discharge support to consumers of adult mental health services. In the first 3 months of operation 49 support packages were provided with 300 bed days saved, equating to $93,150 AUS saved.
Forensic Monitoring / Peer-Based Case Management	Sells D; Davidson L; Jewell C; Falzer P; Rowe M. "The treatment relationship in peer-based and regular case management for clients with severe mental illness." *Psychiatric Services 57.8 (*2006):1179-84.Web. 18 June 2012.	This study compared the quality of engagement in peer-based and regular case management. Participants perceived higher positive regard from peer providers, which in turn positively predicted 12-month treatment motivation for psychiatric, alcohol, and drug use problems and attendance at Alcoholics and Narcotics Anonymous meetings.
Intercepts 1-3 (Diversion Programs)	Guo, Shenyang; David E. Biegel; Jeffrey A. Johnsen; Hayne Dyches. "Assessing the Impact of Community-Based Mobile Crisis Services on Preventing Hospitalization". *Psychiatric Services* 52.2 (2001). Web. 18 June 2012.	This study evaluated the impact of a community-based mobile crisis intervention program on the rate and timing of hospitalization. Community-based crisis intervention reduced the hospitalization rate by 8 percentage points.
	McNiel, Dale E.; Renée L. Binder. "Effectiveness of a Mental Health Court in Reducing Criminal Recidivism and Violence". *Am J Psychiatry* 164 (2007): 1395-1403. Web. 18 June 2012.	Authors evaluated whether a mental health court can reduce the risk of recidivism and violence by people with mental disorders who have been arrested. The average effect of mental health court reduced the probability of any new charge over 18 months by 39%.
Tele-psychiatry	Linda Godleski. "Telemental Health Dramatically Cuts Psychiatric Hospitalization Rates". 14 May 2012. http://jsahealthmd.com/2012/05/14/telemental-health-dramatically-cuts-psychiatric-hospitalization-rates/. 18 June 2012	A prospective 4-year study included data on 98,609 mental health patients before and after enrollment in telepsychiatric services of the Veterans Affairs (VA) between 2006 and 2010. The first large-scale assessment of telepsychiatry outcomes showed that patients' psychiatric hospitalization utilization decreased by about 25%.
Alternative Community Residential Programs	Beacon Health Strategies. "Home-Based Therapy Program: A Specialized Network." http://www.beaconhealthstrategies.com/snp.html. 18 June 2012.	The home-based program reduces the risk of hospitalization for frail members who are unable to leave their homes or other residential settings. For those who are recently discharged from inpatient settings, the program reduces the risk of recidivism. The program has achieved 82 percent reduction in hospital admissions and 93 percent reduction in hospital days for enrolled population.
Payment Alternatives	Bloom, Joan R; Teh-wei Hu; Neal Wallace; Brian Cuffel; Jaclyn W Hausman; Mei-Ling Sheu; Richard Scheffler. "Mental Health Costs and Access Under Alternative Capitation Systems in Colorado". *Health Serv Res.*37.2 (2002): 315–340. Web. 18 June 2012.	Article references a two-year study in Rochester, New York, where capitation resulted in 14% reduction in costs, but the rate of savings decreased over time. The cost reductions were a result of increased intervals between inpatient care episodes.

Appendix J. Glossary of Technical Terms

Admission Rate: The number of patients entering into the hospital for acute care services per 1,000 population.

Administrative Services Organization (ASO): An organization retained to provide administrative services, such as utilization review, preauthorization of services, and payment of claims.

Average Daily Population (ADP): The average number of licensed acute care beds in the hospital that are used by inpatients.

Average Length of Stay (ALOS): The average number of days a patient stays in the hospital.

Bed: General measure of hospital size and capacity.

Capitation payment: Payment for a defined range of services for a defined period that may vary with the characteristics of the client. Normally, the capitation payment is expressed as a set amount per member per month. Rates are normally not affected by the number or type of actual services provided to the client.

Civil admission: Categorized as a “civil” admission if he or she voluntarily admits herself into a hospital or is involuntarily confined after an administrative hearing finding that she has a mental disorder, is in need of inpatient treatment and there is no less restrictive alternative, is a danger to him/herself or others, and is unwilling or unable to consent to voluntary treatment (MD Code Ann., Health-General, 10-617).

Core Service Agency (CSA): Local agency (typically at the county-level) responsible for planning and monitoring mental health services at the local level.

Discharge Rate: The number of patients who have received acute care services discharged per 1,000 population.

Fee-for-service (FFS): A payment system in which payments are made for individual services provided using a preset fee schedule.

Forensic admission: Individuals who overlap the criminal justice and mental health systems

Competency to Stand Trial: A defendant has a rational and factual understanding of the nature and object of the proceedings against him or her and has sufficient present ability to consult with his or her lawyer with a reasonable degree of rational understanding.

Inpatient (IP): A patient who has been admitted to the hospital for an overnight stay or longer.

Licensed Beds: Basic index of hospital capacity, consisting of the beds in each hospital that are licensed for acute care use.

Not Criminally Responsible (NCR): A defendant is not criminally responsible for criminal conduct if, at the time of that conduct, the defendant, because of mental disorder or mental retardation, lacks substantial capacity to 1) appreciate the criminality of that conduct; or 2) conform that conduct to the requirements of the law (MD Code Ann, Health-General, 3-109).

Occupancy Rate: Average percentage of licensed beds in a hospital or one of its units that are filled as of midnight each day.

Operating Beds: Beds that are staffed and utilized for patient care.