

DELAWARE PSYCHIATRIC CENTER Replacement Behavioral Health Hospital Wilmington, DE



The Delaware Psychiatric Center's (DPC) 135-acre Holloway Campus could no longer provide their desired high level of care by utilizing the newest techniques in behavioral health in their aging and outdated facility. The patient rooms were too small, treatment areas could not accommodate the new equipment, and families had no quality space in which to interact with their loved ones. Modern understanding of the challenges that face the inpatient psychiatric population required the DPC to undertake a comprehensive facility master planning effort.

Array completed the comprehensive facility master plan and is now working with the DPC to design and build their new hospital. Our master plan identified the need for a new 205-bed facility that would provide "pods" for each population type as well as a central spine or "mall" that would provide treatment areas for the entire community. The new Hospital will be LEED certified which creates a lesser impact on the surrounding environment and creates a healthier living space for both the patients and staff.

Project Information

- 250,000 GSF new construction
- 205 inpatient beds in five "pods" which are segregated for safety and to meet each specific community's needs
- Pods include geriatric, long term acute, chronic, serious behavioral, and adult transitional
- Treatment "mall" allows for the populations to leave their "households" and experience other patients in a safe and secure environment
- Woodland views and protected outdoor areas for patients
- LEED design features include state-of-the-art stormwater management techniques, the use of recycled building materials during construction, utilizing energy efficient building systems, and purchasing over 20% of the building materials from local manufacturers.

Fast Facts

- Construction cost: \$65,000,000
- Design Start: April 2004
- Construction Completion: April 2009



NORTH SHORE LONG ISLAND JEWISH HEALTH SYSTEM

Zucker-Hillside Replacement Psychiatric Hospital Queens, NY



Zucker-Hillside Hospital is a 223-bed psychiatric facility known for its pioneering work in diagnosis, treatment and research of mental illness. The National Institute of Mental Health established a Clinical Research Center for the Study of Schizophrenia at the hospital, making it only one of four such facilities nationwide.

Array Healthcare Facilities Solutions was retained to work with the clinical and administrative leadership of Zucker Hillside to incorporate best practice medicine into best practice design of a replacement facility for 108 beds of the 223-bed complement. The original patient clusters of 20-24-bed units were compressed into six 18-bed units (2-adult, 1-pediatric, 3-geropsychiatric). Rooms are all designed to flex from private to semi-private, with typical 18-bed configuration comprised of four private and seven semi-private rooms. The facility is also designed with an innovative three-corridor system, physically separating patients, staff, and visitors into three distinct circulation series.

Specifically, the new facility will be designed to maximize the benefits of the campus environment, the linkages to academic behavioral advances, advances in behavioral health facility design (e.g., patient safety, staff safety, electronic medical records), integration with the full continuum of outpatient and community-based services, and the latest findings in evidence-based design and best-practice medicine.

Project Information

- 85,900 SF
- Bedside registration of patients, as appropriate
- Spacious family areas, including coffee kiosk for off-unit family visits
- Adolescent unit with indoor and outdoor recreation space, classrooms, quiet areas, activity area, and private/semiprivate rooms.
- Geropsychiatry units with walking tracks and fall precaution design
- Fully wireless and reliant upon electronic medical records
- In association with Polshek Partnership

Fast Facts

- Construction cost: TBD
- Design Start: February 2007
- Construction Completion: September 2009

STOCKLEY MEDICAL CENTER

Developmentally Disabled Nursing Center Georgetown, DE



The Stockley Medical Center's facilities were over 45 years old and were unable to accommodate the state-of-the-art therapies that are currently being used to treat both their residential and day patient populations. Originally designed for medically-compromised, developmentally-disabled individuals, there were few areas for residents to interact with their families and other patients outside of their bedrooms. Treatment areas were too small for the size of the groups that the center needed to accommodate to provide group therapy. Engineering systems were outdated, and repairs and maintenance were becoming economically unfeasible.

The Stockley Medical Center and Array began the design process for a new facility by undertaking a focused facilities plan to evaluate what services needed to be included in the new building and selecting a site that would create a residential and safe environment. The project is currently in design.

Project Information

- 80,000 SF new construction
- Provides support for both an inpatient and day care population
- 54-beds in three separate medical / residential units that will be repetitive in design to allow for flexibility in staffing assignments and cross-training
- The new center includes areas for administrative services, day services for residents, residential services and medical services
- Inpatient rooms are designed to reflect a residential feel
- Each residential unit is accessed through a central gathering area providing visual stimulation to the exterior, and a social space where families or patients can spend time together
- Treatment services including therapy and recreational spaces are located along a connecting spine

Fast Facts

- Construction cost: \$25,000,000
- Design Start: October 2005
- Construction Completion: July 2008

As part of Array's extensive network-wide facility master plan for the University Hospitals of Cleveland, reevaluation, reorganization, and relocation of numerous campus services was critical to improving efficiencies. UHC's Psychology program, located in a facility set for demolition, was reorganized to more clearly separate inpatient and outpatient services as well as increase room for physicians, staff, and research associates. The inpatient unit was designed to fit within the primary medical center building as well as an adult unit at a UHC suburban satellite hospital.

Outpatient programs, typically more heavily trafficked than inpatient services, are distributed among six floors of a perimeter building shared between UHC, the City of Cleveland, and the Cleveland Clinic. As an additional benefit of the restructuring, Rainbow Babies & Children's Hospital will also realize the benefit of a new pediatric psychiatric unit.

Project Highlights

- 17-bed suburban adult psychology unit
- 12-bed urban adult and geropsychology unit with a mix of med / psych and psych / beds
- 12-bed urban pediatric psychology unit with 2 isolation rooms
- Outpatient care building with dedicated first-floor pediatrics
- Additional outpatient services include intensive outpatient psychiatrics, mood disorder, addiction recovery, and general adult psychological treatment



Universal Health System (UHS) currently operates 50 behavioral health hospitals nationwide. The Stonington Institute, located in Stonington, CT, offers residential and day patient programs and needed to increase the amount of residential beds available. UHS and Array have evaluated several sites to determine the best location for an additional campus. Projects on the campus include the Acute Care Psychiatric Hospital—Feasibility study for a new, 40-bed Hospital with an additional 13 beds for Detoxification, required support spaces, and cottages for 180 Adult Behavior Health residents near their North Stonington, CT Campus—and Adult Partial Hospitalization Unit—Interior fit-out of a 12,000 SF facility to accommodate an Adult Partial Hospitalization Program in Branford, CT.

Rockford Center in Newark, DE is a 74-bed inpatient behavioral health center that provides services for children, adolescents, and adults. The recent growth from 55 to 74 beds required more dining space for the increase population. An unused courtyard and outdated pool provided the perfect opportunity to add the required space with a minimum of disruption and provided the space required for additional adolescent meeting rooms. Works includes 2,800 SF infill of the existing pool and courtyard to provide space for a two group rooms, clinical offices, toilet room, and a new entrance at their Newark, DE Campus.

Universal Health Services also retained Array to provide architectural, MEP, structural, and civil engineering services for a new 120-bed psychiatric hospital to be located in the northeast corner of the City of Philadelphia. Focusing on care for adults and seniors, it is anticipated that the facility will having three 40-bed living units comprised of mixed private and semiprivate rooms, as well as professional offices, activity spaces, group rooms, and family visitation spaces.



Universal Health Services, Inc. (UHS) retained Array to provide architectural services for a new treatment center for adolescent sex offenders, incorporating potential future expansion as well. The intent of the project is to develop the approximately 15-acre site adjacent to the existing Pennsylvania Clinical School for the new campus. The building blends with the surrounding architecture. Innovative space planning has managed to include a program for 144 beds, adequate gym, activity, educational, dining, and support spaces into an 81,100 SF facility. The previous 110-bed facility could not accommodate the array of program options despite a larger 95,400 SF footprint.

The design of the new school and residential facilities has been extremely challenging and has needed to be sensitive to the unique and sometimes conflicting needs of this population. With issues ranging from significant behavioral and medical concerns to the need for forensic-type security, the building has been designed to respect the pod model of group segregation while maximizing the opportunity for efficiency in a treatment mall type of environment.

Many residents have an average length of stay ranging from 12 to 18 months, requiring provisions for such routine living requirements as personal maintenance (e.g. hair salon / barber shop, computer room, sundries, etc.), family visitation space, parole officer meeting space, and large recreational areas, with access at scheduled times by the various residential pod groups. Residential room design needed to be modest and therapeutic, including durable ceiling treatments, windows, hardware, and common yet private bathrooms. Private bedrooms will reduce altercations / fights among residents, but will need to be designed for easy maintenance by both the residents and housekeeping staff. While the clinical and educational staff know much about the needs of the population, the design will need to reflect opportunities for therapeutic innovations and efficiencies that support the residents' treatment and preparation for return to home communities or vocational training.

Project Information

- 81,100 SF
- 144-bed adolescent behavioral health hospital
- Future expansion capabilities up to 220-beds
- Psychologically-safe universal room design improve efficiencies while maintaining individuality of resident population



DEL E. WEBB MEMORIAL HOSPITAL Behavioral Health Assessment Sun City West, Arizona

Del E. Webb Memorial Hospital has been experiencing dramatic growth in the demand for its array of medical services, primarily due to the explosive growth in the population moving to the northwest corner of Phoenix and its suburbs. Unique among its peers, the Hospital established psychiatric services that were gauged to the needs of seniors within its service area. Specifically, the Hospital developed a 22-bed medical/psychiatry unit, focusing on the needs of geropsychiatry patients with concomitant medical issues, and a 12-bed unit focusing on patients with cognitive impairments.

As of the winter of 2006, the Hospital was experiencing an unusually high demand, both among its historical senior population and newer, younger residents in need of behavioral health care. However, the inpatient needs of the younger patients could not be well served by the existing units with programming for seniors, nor were the units designed to manage younger, more acute/aggressive patient populations among older, medically fragile patients.

The Hospital retained Array Healthcare Facilities Solutions to conduct an assessment of the existing services and resources, and to provide a set of recommendations that could assist the Hospital in maintaining its centers of excellence for seniors with behavioral/medical issues as well as its newer, younger patient population.

Final, specific recommendations to the Sun Health and Del E. Webb Memorial Hospital leadership teams focused on:

- Establishing service line priorities and collaborating with community providers for improved movement of patients across the service continuum
- Improving operational performance and patient flow through more aggressive programming, utilization of alternative personnel, and improved unit design for patient/staff safety.
- Providing clear expectations for the Board, community, and Sun Health family.
- Establishing a database for future decision-making

Fast Facts

- Project Cost: \$15,000
- Design Start: March 2006
- Construction Complete: June 2006



Array was retained by Johns Hopkins Health System to assess selected behavioral health service sites within the continuum of behavioral health care offered by the Medical Center. Array was asked to provide insight as to the risks inherent to behavioral health facility design and best practice medicine exercised in the proper care of the population, as well as providing recommendations for areas of particular concern, including:

- Quiet rooms within the outpatient child and adolescent service areas;
- The psychiatric holding area within Bayview's Emergency Department; and
- The inpatient psychiatric unit.

The team conducted a detailed walk through of the spaces, providing staff with feedback and suggestions concurrent to the visit. Subsequently, findings and recommendations were documented and included the following:

- Population-safe hardware throughout
- Barricade-proof doors
- Quiet and seclusion room flooring and wall coverings
- Ceiling treatments
- Lighting
- Adjacencies of offices to quiet and seclusion rooms
- Air circulation systems
- Noise abatement
- Staff visibility of patients
- Nursing station design



ABINGTON MEMORIAL HOSPITAL Psychiatric Program Redirection Abington, PA

As one of Metropolitan Philadelphia's last independent hospitals, Abington Memorial Hospital provides numerous services to the residents of its surrounding community; among them a continuum of behavioral health inpatient, outpatient, and partial hospitalization services. These services are provided in multiple locations within and proximate to their main campus. Serving all age and economic groups, the Hospital has been providing a vital service to the greater Abington area.

In spring 2007, a major managed behavioral health company changed contractual terms with the Hospital which resulted in significant impacts upon 40% of their patient population. This, in turn, encouraged Abington to better diversify their payor mix such that their entire continuum of care would not be so dependent on any one payor.

Array was retained to assist with the strategic redirection of their inpatient and outpatient services, in an attempt to maintain Abington's psychiatric census and revenue. The primary focus of Abington's services was on inpatient medicine. Following an analysis of their patient population, community needs, competitive environment, and professional direction (eg. in-depth interviews with medical, administrative, and clinical leadership) recommendations were made to convert Abington's 24-bed mixed adult unit—comprised of private and semiprivate rooms—to a renovated, all private geropsychiatry unit. This conversion was premised upon market data that documented the need/demand for services among seniors and the limited availability of specialty beds, resulting in the need for geropsychiatric patients to leave their service area for care.

Recommendations were also made for solidifying the Hospital's approach to caring for patients admitted to medical beds with primary medical conditions and secondary behavioral issues. Having already recognized this population as one in need of discrete and intentional integrated care among medical and behavioral professionals, the Hospital opted to continue a scatter bed approach until such time that a dedicated medical/psychiatry unit could be warranted.

Outpatient recommendations encompassed an improved contracting position with local governmental purchasers coupled with incentive-based compensation for their outpatient professional staff.



The Department of Psychiatry at Lancaster General Hospital retained Array in association with Dr. Byron Bair to provide the Hospital with information on the evolving role of integrated medical and psychiatric services on both an inpatient and outpatient basis. Subsequently, the team examined the viability of establishing an integrated inpatient unit at the Hospital. The engagement entailed the collection / analysis of quantitative data and extensive interviews, as well as documentation of similar programs elsewhere, a formal presentation to staff, and an executive memorandum summarizing the team's findings and recommendations.

The quantitative analysis revealed that Lancaster General was experiencing patterns of comorbidity similar to most acute care general hospitals, and had opportunities for integrated care, including:

- Among their total medical / surgical admissions, 35-40% of the patients had documented secondary behavioral health issues.
- Of these comorbid patients, the 500 patients with the longest lengths of stay had an average length of stay in excess of 24 days.
- Within the existing staff were both potential champions of integrated care, (physicians boarded in both internal medicine and psychiatry) as well as nurses interested in working with this population.
- With nominal renovation, there was an existing unit that could readily accommodate 12 private rooms. Renovations would focus on converting medical rooms for psychiatric safety, and ensuring proper visibility of all rooms from the nurses' station.
- Conservative estimates proposed that integrated medical / psychiatry unit would have a positive impact of \$1.4 million per year, exclusive of savings estimates from fewer one-on-one sitters, additional revenues for psychiatric fees as coattendings v. consults, and additional revenues from ancillary procedures.



Bon Secours Health System is a nationwide health system with facilities in Maryland, Florida, Kentucky, Maryland, Michigan, New Jersey, New York, Pennsylvania, South Carolina, and Virginia. The system includes 20 acute-care hospitals, one psychiatric hospital, six nursing care facilities, several ambulatory sites, six assisted living facilities, and home health and hospice services. In order to provide a higher level of service for their psychiatric service lines. Bon Secours worked closely with Array to complete a Behavioral Health Services Assessment for a targeted group of hospitals.

Project Information

- The Behavioral Health Services Assessment provided included:
 - Risk assessment tools with detailed criteria for evaluating performance metrics at each of the targeted hospitals including utilization patterns, staffing patterns, financial indicators, medical/psychiatric patterns, emergency department indicators, marketing and demographic indicators, and general facility risk patterns
 - Site visit reports for each of the hospitals, detailing strengths, weaknesses, overall risk, and recommended actions resulting from analysis of staffing/credentialing policies and procedures, programming, patient flow, documentation, admission/treatment of co-morbid patients, continuing education, CQI programs, safety programs, financial performance, market/patient profiles, and emergency room procedures
 - Final report summarizing patterns of risk, program opportunities, and program constraints, along with recommendations and action plans for correcting problems and maximizing opportunities

Fast Facts

- Cost: \$54,000
- Project Start: August 2005
- Final Report Delivered: December 2005