



COMMUNITY BENEFITS PLAN

2017

**Barlow Respiratory Hospital
2000 Stadium Way
Los Angeles, CA 90026**

**Barlow Respiratory Hospital at Presbyterian Intercommunity Hospital
12401 Washington Blvd, Two East
Whittier, CA 90602**

**Barlow Respiratory Hospital at Valley Presbyterian Hospital
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Van Nuys, CA 91405**

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COMMUNITY BENEFITS

PLAN 2017

I. INTRODUCTION

Barlow Respiratory Hospital (BRH) is a 105-bed, not-for-profit, long-term, acute care hospital with a history of providing respiratory medical services to the Southern California community for over 100 years. Founded in 1902 as a tuberculosis sanatorium, Barlow Respiratory Hospital now treats patients suffering with a wide variety of pulmonary disorders such as chronic bronchitis, emphysema, asthma, and other chronic breathing disorders as well as chronically critically ill patients with multiple medical problems of long duration. Barlow Respiratory Hospital is committed to research and focuses on developing patient care “best practices.”

We were the FIRST hospital in the Western United States to earn the Disease Specific Gold Seal of Approval® for Respiratory Failure Certification from the Joint Commission and the ONLY West Coast Passy-Muir Center of Excellence, recognized for treating patients with tracheostomies, on and off the ventilator.

In addition to patient care and research, our commitment extends to education of physicians, and other healthcare professionals by sharing knowledge gained through our expertise in caring for our patient population as well as providing community education on respiratory issues.

With facilities adjacent to downtown Los Angeles, and within Presbyterian Intercommunity Hospital (PIH Health) in Whittier, and within Valley Presbyterian Hospital in Van Nuys, Barlow Respiratory Hospital is equipped to serve adult patients with a wide range of patient diagnostic, and treatment services, as well as education and outreach activities to various community organizations, agencies, and local schools. Barlow serves as a teaching site for University of Southern California and University of California Los Angeles Medical School students. The hospital also hosts allied health professional school programs through affiliations with universities, community colleges and vocational training centers.

All patient care, community, and business decisions are based on adherence to the mission, vision, and values of Barlow Respiratory Hospital and the community needs assessment, and based upon the findings of the community needs assessment. The mission, vision, and values statements are an integral part of the organization. These statements are at the core of the strategic planning process. However, plans are developed based upon the specific mission and services of Barlow.

II. MISSION STATEMENT

Barlow Respiratory Hospital mission is to make a positive difference in the lives of individuals with chronic critical illnesses and complex respiratory conditions in post-acute settings.

III. VISION STATEMENT

Our Vision is to be the best in the care of individuals with complex respiratory conditions in the post-acute setting.

IV. VALUES

The Core Values of Barlow Respiratory Hospital are:

Continuous Improvement to deliver best outcome

Collaboration to improve patient care

Efficiency in clinical services delivery

Respect for patients, families and coworkers

v. COMMITMENT TO COMMUNITY BENEFIT

The governing body of the Barlow Group, Barlow Respiratory Hospital and Barlow Foundation along with the hospital leadership, and staff are strongly committed to fulfilling its mission, which includes improving the respiratory health status of the community. Barlow Respiratory Hospital's specialty care programs are continuously evaluated to ensure that they meet the needs of patient populations in the community.

As part of strategic planning, the Boards of Directors and hospital leadership continually evaluate population needs to assure services provided meet those needs, and to develop new services as the need is identified. This process occurs through input from numerous sources; the Medical Staff, hospital staff, referring hospitals, referring physicians, community representatives, and a periodic community needs assessment.

Barlow Respiratory Hospital's mission and values also reflect its commitment to partnering with other health care providers and community organizations that share its charitable mission, and service area/population in providing care and services. Support from the Boards of Directors includes developing community outreach/health care initiatives, and allocation of resources for the planning, and implementation of these initiatives. The process includes periodic measurement of programs, and services to assure priorities are met and allocated resources achieve planned goals and objectives.

The hospital administrative staff oversees the community outreach functions, under the direction of the Board of Directors.

Hospital leadership, with input from others, sets, and monitors measurable objectives for the benefit plan core programs, assesses community needs, and opportunities, identifies collaborative partners, and assures that community benefit activities serve an identified at-risk population. Periodic reports on community benefits are presented to key internal groups, including hospital administration, management, and all boards of directors. The hospital's Community Health Needs Assessment and annual Community Benefits Plan Update are shared with various community planning, and service-provider groups to inform about community benefits activities, and outcomes, as well as available outreach services. Internally, these documents are used to assess community benefits programs and assist in hospital planning.

VI. DEFINITION OF COMMUNITY

Barlow Respiratory Hospital, a regional referral center, defines “community” as the hospital’s primary service area, and includes the patient populations that reside within it. Specifically, this service area encompasses the entire Los Angeles County. Patients are referred to Barlow from nearly 100 acute care hospitals throughout Northern and Southern California, with some referrals from home and/or long-term care facilities. Barlow provides needed respiratory and chronically critically ill medical services. Barlow improves the quality of life, and health outcomes of a diverse population.

Barlow’s primary service area is Los Angeles County, with secondary service areas from the five surrounding counties of Ventura County, Kern County, Orange County, San Bernardino County, and Riverside County. Los Angeles County is one of the most diverse metropolitan areas in the nation. It is an economically and ethnically diverse community, with dozens of cultures, and languages spoken. Ethnic distribution in Los Angeles County for year per 2010 census data was: Hispanic 47.7%, White 27.8%, Asian 13.5%, African-American 8.3%, and others .30%.

With over 9.8 million people, as of 2010 census data and 2016 estimates of 10 million people, Los Angeles County is the largest metropolitan area in the United States, and is exceeded by only eight (8) states.

There are eighty-eight (88) cities in the county. Approximately 27% of California’s residents live in Los Angeles County. As of 2010 census data, approximately 13.5% of the population in Los Angeles County was over 65 years of age. Los Angeles County has the largest geriatric population of the Southern California counties, and this is projected to increase primarily due to the baby boom generation. Current illness and population trends indicate continued demand for pulmonary services, and for meeting the multiple health needs of the senior population.

VII. COMMUNITY HEALTH NEEDS ASSESSMENT SUMMARY

Barlow conducted a Community Health Needs Assessment (CHNA) as required by state and federal law in July 2017. California Senate Bill 697 and the Patient Protection and Affordable Care Act and IRS section 501(r) (3) direct tax exempt hospitals to conduct a community health needs assessment every three years. The CHNA is the primary tool used by the hospital to determine its community benefit plan, which outlines how it will give back to the community in the form of health care and other community services to address unmet community health needs. This assessment incorporates components of primary data collection and secondary data analysis that focus on the health and social needs of the service area.

Service Area

Barlow Respiratory Hospital is located at 2000 Stadium Way, Los Angeles, California. The hospital is located in L.A. County Service Planning Area (SPA) 4. The hospital draws patients regionally from Southern California, with a primary service area of Los Angeles County. A review of hospital inpatient data, from 2011 to 2016, identified approximately 90% of hospital patients originate from Los Angeles County.

Methodology

We conducted a series of interviews from people who represent the broad interests of the community served by Barlow, including representatives of low-income, medically underserved, and chronic disease populations, health care providers and practitioners, and other community leaders. A list of those that were interviewed is included with this report as Attachment 1.

We also collected information and data from a variety of sources to examine our service area demographics, economic indicators, and other important factors that affect the health needs of our patients and community.

Despite our best efforts there are certain information gaps that impact our ability to assess the health needs of our community, including the fact that some raw and tabulated data was several years old.

Identification and Prioritization of Health Needs

Based on the results of the primary and secondary data collection, health needs were identified. The identified health needs were:

Access to Care
Chronic Disease Conditions
Smoking
Homelessness
Mental Health
Nutrition and Physical Activity

Priority Health Needs

After identifying the health needs of the community we serve, we then prioritized those needs based on the following criteria:

- Our Existing Organizational Infrastructure and Capacity
- Our Pre-Existing Competencies and Expertise
- Our Existing Relationships In the Community
- Any Available Ongoing Investment

Application of the criteria resulted in the identification of high and low prioritized needs.

Priority Health Needs	Ranking
Access to care	High
Chronic disease conditions	High
Smoking	High
Homelessness	Low
Mental health	Low
Nutrition/physical activity	Low

Barlow Respiratory Hospital plans to meet the identified priority health needs through a commitment to resources with the following programs and services.

Access to Care

Barlow continues its efforts to bring our well established expertise in ventilator weaning, pulmonary rehabilitation, and treatment of the chronically critically ill to other communities by expanding its service delivery system. We have been actively seeking opportunities to open satellite sites to offer our specialized services throughout Los Angeles County. However, those efforts have been hampered by recent Federal legislation which re-instates a moratorium on opening newly licensed LTACH facilities. In response to this development, and to other market forces, Barlow is actively working to develop comprehensive post-acute health delivery network. By acquiring or partnering with downstream providers such as sub-acute facilities, skilled nursing facilities, and home health agencies we will expand the reach of our clinical expertise to lower levels of care and throughout Los Angeles County.

Barlow also has a financial assistance policy that supports access to long-term care for uninsured and underinsured patients who do not have the resources to pay for their care.

Chronic Disease Conditions

Barlow continues to offer support groups for those dealing with multiple chronic health conditions. Support groups are offered free of charge and are open to the community. With a focus on prevention of chronic diseases, Barlow Respiratory Hospital will continue to participate in community health fairs that include health education and preventive screenings.

Smoking

Barlow Hospital has developed collaborative partnerships with community organizations to prevent and treat a number of respiratory conditions. We offer programs that focus on

smoking cessation as a strategy to prevent future respiratory diseases and other chronic conditions. We have taken the first step in this process by offering a smoking cessation class free of charge to the community at our Main campus.

Other Health Needs

Barlow Respiratory Hospital has chosen not to actively address the remaining health needs identified in the CHNA as they were not selected as priority health needs: homelessness, mental health, nutrition and physical activity, overweight and obesity and preventive practices. Taking existing community resources into consideration, Barlow has selected to concentrate on those health needs that we can most effectively address given our areas of focus and expertise. Therefore, the hospital's charitable resources will be placed on the selected priority health needs.

A copy of Barlow's CHNA and Implementation Strategy is attached to this report.

VIII. MAJOR COMMUNITY BENEFIT INITIATIVE

1. Initiatives Focused on Prevention, Unmet Needs and/or Vulnerable Populations

1. Access to Care

Need: Access to asthma-specialty care to low-income inner-city children at no cost to their families. To improve preventative asthma care for underserved children in the surrounding community by providing local site team-based asthma care to decrease health disparities, Barlow Respiratory Hospital partners with the Breathmobile program, based at LAC+USC Medical Center, Department of Pediatrics, Division of Allergy and Immunology. LAC+USC is run by the Los Angeles County Department of Health Services.

Description: Barlow Respiratory Hospital serves adults with complex respiratory illness. To ensure access to respiratory care for low-income children with asthma in the surrounding community, Barlow partners with the LAC+USC Medical Center Breathmobile, a comprehensive, mobile-based pediatric asthma disease management program. This clinic provides services to children in the surrounding community to. Students from L.A. Unified Elementary Schools and others in the community are served.

• Objectives:

- To ensure access to respiratory care for low-income children with asthma in the surrounding community.
- To keep children out the emergency room and in school.
- To decrease length of time required for school absences and parental work absences.

• Progress:

- Breathmobile is on site at Barlow Respiratory Hospital bi-monthly to serve children in the community. Bilingual Registered Nurses conduct health screening and medication management for children and provide education to parents and caregivers.

2. Chronic Health Conditions Patient and Family Support Groups

Need: The number and severity of chronic conditions increases as individuals' age. A significant number of individuals over the age of 65 have at least one chronic health condition, plus co-morbidity.

Long Term Illnesses and/or extended hospitalizations due to these health conditions can be a stressful and challenging time for patients and their loved ones who provide support. The professional staff at Barlow Respiratory Hospital understands that the support of loved ones is essential for patients to achieve an optimal outcome following an acute episode of chronic illness, medically complex condition, or during rehabilitation. To help each patient achieve a successful outcome, Barlow Respiratory Hospital sponsors patient and family support group meetings.

Description: Barlow Support Groups are offered as requested by patients, and others involved in patient's care. Support groups are facilitated by the Department of Social Services and Rehabilitation Services.

The Lung Rangers is a support group for former patients and community members living with chronic lung conditions. The group meets quarterly for continuing education and social support to address chronic symptoms and lifestyle issues associated with persons with COPD, asthma, bronchitis, and other respiratory diseases. This group is facilitated by a trained staff member and presented in partnership with American Lung Association Better Breather's Club.

- **Objectives:**

- To provide a supportive environment for patients and their loved ones.
- To provide education regarding managing stressors, increasing coping mechanisms, and offering support.
- To provide appropriate referrals and resource coordination.

- **Progress:**

- Support groups continue to be offered throughout the next fiscal year. In addition to serving former patients and their caregivers, outreach to the community ensures that others who would benefit from the group are included.

2. Initiatives Focused on Community Building

1. Membership in Local Community Groups

- Barlow representatives hold membership in numerous local community groups. Barlow representatives are involved in discussions which identify/clarify community issues, development and implementation strategies to address the issues, and monitoring and evaluating progress toward established goals.

Barlow representatives serve as liaison between community groups and civic/business leaders. Currently Barlow representatives are involved with the Echo Park Chamber of Commerce, Los Angeles Chamber of Commerce, Los Angeles Rotary Club, and Valley Industry & Commerce Association.

2. Meeting Facility

- **Need:** Barlow Respiratory Hospital provides a safe, clean, convenient facility and parking for community-based non-commercial groups to meet and discuss issues important to the community such as public and personal safety, public health issues, emergency preparedness, and serves as a local and national elections polling place.
- **Description:** Various non-commercial, community-based groups use Barlow Respiratory Hospital meeting facilities because it is a clean and safe environment to hold meetings. Barlow will continue to offer, at no cost, its facilities and parking to local community-based groups with focus on health and wellness related events.
- **Objective:** To help foster community plans on community issues and seek information from the community on how Barlow can assist with community development programs.
- **Costs:** Associated costs are un-reimbursed.

3. Initiatives Focused on Long-Term Strategic, Community Health Improvement Goals

1. Improved access to respiratory and other complex specialty medical services.

- **Need:** The need for additional specialty services and a better referral system for specialty care are ranked third and tenth,

respectively, among community health priorities identified in the Healthcare Association of Southern California (HASC) Regional Report 1998. According to the Barlow Respiratory Hospital 2017 Community Needs Assessment, the community has access to medical care primarily through their primary care physicians, urgent care and the emergency room.

- **Description:**

- Geographic expansion of service delivery system: Barlow Network Satellite Program
- Recruitment of additional community-based physicians to active Barlow Respiratory Hospital medical staff membership.

Barlow Respiratory Hospital has continued efforts to bring its expertise in ventilator weaning, pulmonary rehabilitation, and treatment of the chronically critically ill to other communities.

Barlow Respiratory Hospital main also supports the operations of two (2) satellites – one in Presbyterian Intercommunity Hospital in Whittier, the other within Valley Presbyterian Hospital in the San Fernando Valley. Barlow Respiratory Hospital remains committed to expanding its service area in order to offer its specialized services to patients throughout Los Angeles and its neighboring areas. We will continue to identify and move forward with our planning on this very important community.

Our medical staff continues to grow, ensuring that our admitting panels are adequate to handle our chronically critically ill population and thereby ensuring broader access to our system.

- **Current Status:**

The current satellite units continue to be successful in delivering care to the community. Our medical staff membership continues to grow primarily due to these successes. Additionally physicians have requested continued medical education credits for continued learning regarding respiratory disease. We continue to move forward in our pre-planning for our next satellite unit.

- **Strategy to Meet Needs:**

- Continue to evaluate community programs at each site location.

Hospital Statistics

Year	2015-2016	2016-2017	2017-2018
Number of Admissions	863	1,016	862
Increase over previous year	6%	18%	-15%
Admissions by Service:			
Ventilator Weaning	316	324	302
Medically Complex	519	692	560
Patients weaned from prolonged ventilation:			
Admitted to vent	316	324	302
Patients weaned	58%	58%	55%

- **Measurement:**
 - Number of patients accessing Barlow's care by product line
 - Outcomes of patients in weaning

2. Medical Staff – Academic Training

Barlow Respiratory Hospital serves as an educational center for the training of medical students from USC and UCLA. The students round with a physician over a three (3) to four (4) week time period on critically ill patients, many of whom are ventilator dependent with multiple comorbidities. Didactic teaching is performed using printed educational material as supplement to bedside teaching.

The Medical Director has been serving as an Associate Clinical Professor of Medicine Voluntary Faculty member at UCLA since August 2010 to present, teaching System Based Healthcare. He teaches approximately once a month at UCLA for a four (4) hour time period.

4. Medical and Healthcare Professional – Continuing Education

The Barlow Respiratory Hospital Nursing Residency Program is an in-depth three-month training required for all newly hired nurses at Barlow Respiratory Hospital. It provides hands-on acute care experience and

education specific to the critical care needs of Barlow patients and specialized training to serve patients with respiratory illness. Program participants are both new grads and seasoned Registered Nurses who care for Barlow Respiratory Hospital patients at all three locations; Barlow Main in Los Angeles, Barlow at Valley Presbyterian Hospital in Van Nuys and Barlow at PIH Health Hospital–Whittier.

5. Medical and Healthcare Professional – Nursing and Respiratory Care Professional Training

Barlow Respiratory Hospital partners with local community colleges to serve as a rotation training site for Nurses and Respiratory Therapists. Students serve with on site educators at all three locations; Barlow Main in Los Angeles, Barlow at Valley Presbyterian Hospital in Van Nuys and Barlow at PIH Health Hospital–Whittier.

In addition, the hospital awards an annual Nursing Scholarship to a fourth semester nursing student. Criteria for selection include financial need and academic performance to promote excellence in the field of nursing and to develop the next generation of highly trained healthcare professionals.

6. Medical and Healthcare Professional – Continuing Education for Physicians

Barlow Respiratory Hospital presents the annual Hans E. Einstein, MD Memorial Lecture with CME provided by the Hospital for Special Care (New Britain, CT), the lecture series realized its seventeenth year hosting the fourth and fifth memorial lectures. The lectureship draws 60-70 physicians, nurses, respiratory care practitioners, and allied health care professionals from surrounding academic medical centers and community hospitals for an evening of networking and science on the Barlow campus. The lecture invitation is mailed to over 600 physicians and allied health care professionals in southern California. Recent lectures:

- **Hans E. Einstein, MD Visiting Professor: Catherine L. “Terri” Hough, MD, MSc**, Associate Professor of Medicine, University of Washington, Division of Pulmonary and Critical Care Medicine, Medical Director of the Medical Intensive Care Unit, Harborview Medical Center, Seattle, WA. *“Improving Communication with Patients and Families During Critical Illness”* December 3, 2015
- **Hans E. Einstein, MD Visiting Professor: Hallie C. Prescott, MD, MSc**, Assistant Professor in Internal Medicine, University of Michigan, Division of Pulmonary & Critical Care Medicine, Ann Arbor, MI. *“Why Don’t People Get Better After Critical Illness?”* December 8, 2016
- **Hans E. Einstein, MD Visiting Professor: Shira Doron, MD, MS, FIDSA** Associate Professor of Medicine, Tufts University School of Medicine, Associate Hospital Epidemiologist, Tufts Medical Center, Boston MA. *“Antimicrobial Stewardship in the Long Term Care Hospital”* January 10, 2018

- **Hans E. Einstein, MD Visiting Professor: Kevin M. Chan MD**, Professor of Internal Medicine, Fellowship Director, Pulmonary & Critical Care Medicine, Medical Director, Lung Transplantation, Division of Pulmonary & Critical Care Medicine, University of Michigan Health System “*Translational Research in Lung Transplantation*” November 29, 2018

7. Medical and Healthcare Professional – Continuing Education Nursing and Respiratory Care Professional

Barlow Respiratory Hospital presents an annual Respiratory Symposium with CEU provided for Respiratory Therapists, Registered Nurses. The first annual Respiratory Symposium was held in October 2016. Symposium goals are: Promote standards of practice in patient safety; Expand innovative critical thinking skills; Advance the profession. The symposium is held each October with an average of more than 150 professionals attending to hear expert speakers present on topics that have included:

- COPD Readmission Reduction
- The Importance of Titrate to Saturate
- Sepsis
- Idiopathic Pulmonary Fibrosis (IPF)
- Principles and Application of Capnography
- Weaning from Mechanical Ventilation
- Wound Care: Core Skin and Wound Assessment
- Auto-Titration Mode of Non-Invasive Ventilation

IX. COMMUNITY BENEFITS AND ECONOMIC VALUE

In estimating the costs of services we used the following methodology: where employees and/or costs of the hospital were involved, we identified actual costs and added benefit cost for labor hours. We also added an indirect allocation for maintenance, clean up, grounds, utilities, etc., and factored that into the calculations. Whenever monies were received for services provided, that revenue was offset against the costs of these programs. In terms of the large ticket items such as the subsidy of the Medi-Cal and Medicare programs we utilized our actual costs and subtracted the reimbursements from both of those programs.

Under the Subsidized Health Services component, we have listed the direct charity care cost and the shortfall from the Medi-Cal and Medicare Programs of \$5,095,113.

Barlow benefits the medical community in terms of identifying and sharing new knowledge of treatment and outcomes for weaning patients from ventilator dependency. This knowledge is useful not only to Barlow Respiratory Hospital patients, but also for respiratory patients in all communities.

In calculating the economic value we used the direct costs associated with the collecting and sharing outcome as indicated by our financial records.

YEAR	2015-2016	2016-2017	2017-2018
	(\$)	(\$)	(\$)
Categories			
Medical Care Services			
Charity Care	150,733	9,632	176,495
Medi-Cal/Medi-Cal Managed Care	2,842,317	2,869,075	3,443,441
Medicare – Unreimbursed Cost		1,130,340	1,475,177
Benefits for Vulnerable Populations			
Support Group Meeting	8,475	2,500	19,800
Community Foundations	8,500	15,200	27,500
Benefits for the Broader Community			
Community Use of Facility	6,000	9,477	14,000
Health Research, Education and Training			
Barlow Respiratory Research Center (includes all associated costs and revenues)	122,187	-- --	-- --
Medical Students Training	61,192	87,644	154,200
Allied Health Professional Training COPE	0	0	19,100
BCS/ACLS Training – Health Professionals	3,440	4,600	5,000
TOTAL ECONOMIC BENEFIT	\$3,204,004	\$4,128,868	\$5,329,713

X. NON-QUANTIFIABLE COMMUNITY BENEFITS

COMMUNITY BENEFITS OF RESEARCH, COLLECTING AND SHARING OUTCOMES

Barlow is committed to excellence in outcomes for chronic lung diseases, and other disease processes in the respiratory and medically complex patient. Barlow contributes to the knowledge base of pulmonary and critical care medicine, and shapes the health care decisions for patients with ventilator dependency, respiratory failure and other disease processes in the respiratory and medically complex patient. Barlow Respiratory Research Center (BRRC) established in 1990 and in operation until 2016, and the Center for Outcomes and Value established in 2016, have focused on outcome based research in respiratory illnesses.

Barlow's benefits to the community are many, and impossible to measure. Most far-reaching are scientific publications and presentations that benefit Southern California and world communities through the education of physicians and allied health professionals responsible for the communities' health care. Since 1990 over eighty publications, and more than eighty presentations have been provided to thousands of medical professionals, and have established Barlow's leadership role in weaning patients from prolonged mechanical ventilation.

By conducting research and reporting its findings, Barlow serves as a valuable resource for patients who become ventilator-dependent and have weaning and rehabilitative potential, the chronically critically ill, those with chronic lung and medically complex disease processes, their families, and the medical community challenged with their care.

Need

Why are respiratory diseases important? According to the CDC Healthy People 2020 initiative, more than 23 million people in the United States currently have asthma. Approximately 13.6 million adults have been diagnosed with COPD, and nearly an equal number have not yet been diagnosed. COPD is now the third leading cause of death in the United States, according to the National Institutes of Health (NIH). In 2014, approximately 147,000 people died from chronic lower respiratory diseases, almost as many as died from lung cancer in the same year. In nearly eight out of ten cases, COPD is caused by exposure to cigarette smoke. In addition, other environmental exposures (such as those in the workplace) may cause COPD. Individuals and their families, schools, workplaces, neighborhoods, cities, and states are all affected by the burden of respiratory diseases. Because of the cost to the health care system, the burden of respiratory diseases also falls on society; it is paid for with higher health insurance rates, lost productivity, and tax dollars. Annual health care expenditures for asthma alone are estimated at \$20.7 billion.

Multiple demands of fiscal constraint, rapidly advancing technology, reorganization of health care delivery in the United States, evidence-based medicine, and an informed and empowered consumer base have all contributed to the prominent role of health sciences outcomes research in current medical decision-making. For example, caring for patients on ventilators outside of the Intensive Care Unit (ICU) was once a new frontier – now it is routinely recognized as part of the continuum of critical care by patients, their families, physicians, and payers. Advanced technology in supporting and successfully treating critically ill patients has created a population of survivors of catastrophic illness, the *chronically critically ill*. The chronically critically ill are a large and growing population that is estimated to exceed 100,000 at any given time in the United States. Driving this trend are projections for growth of the adult prolonged acute mechanical ventilation population in U.S. hospitals to exceed 625,000 by the year 2020. The cost of care in the ICU for a ventilator-dependent patient can exceed \$3,000 per day. Patients are transferred out of the ICU to Barlow while still ventilator-dependent for a variety of reasons: cost savings, to free up beds for newly critically ill patients, and most importantly to utilize weaning expertise.

Clinical research calls for an enhanced infrastructure with needs to define and focus on the outcomes of medical care that are important to patients, their families, and society. These outcomes have been identified as “patient-centered outcomes.” *Outcomes research* focuses on the effects of medical care on individuals and society. Observational outcomes research relies on large sets of data that contain information on patient characteristics, treatments, and outcomes. BRH maintains one of the largest databases in the nation of ventilator-dependent patients admitted to a long-term care (LTCH) hospital for weaning from prolonged mechanical ventilation. BRH studies are designed to work together to determine: the impact of disease on the patient, treatment effectiveness, and efficiencies of processes and delivery of care.

Description

Through observational, retrospective, and prospective clinical research the Center for Outcomes and Value creates, evaluates and communicates new knowledge of treatments and outcomes of ventilator dependency, respiratory failure and other disease processes in the respiratory and medically complex patient populations treated at Barlow Respiratory Hospital.

Objectives/Progress

Objectives of Barlow's Center for Outcome and Value are:

1. Continue to study selected aspects of prolonged ventilator dependency and weaning, expanding the database compared to prior year. This includes the analysis of subpopulations of patients, such as patients admitted with selected diagnoses, renal insufficiency, pressure ulcers, those with infectious complications, and the very elderly. Report trends in patient demographics, weaning outcome, time to wean, and survival.

Progress: With our ongoing Ventilation Outcomes Database (VOD), we continue to collect admission and discharge data on ventilator-dependent patients including: demographic information, functional status, prior ICU-stay information, co-morbidities, laboratory data, severity of illness (APACHE[®] III APS), and subsequent outcome, disposition and survival information. The database now contains over 5,000 patients' data, with appropriate confidentiality and security safeguards.

2. Participate in establishing true benchmarks for post-ICU/post-short term acute care hospital patient populations by continued participation in selected external databases soliciting data from long term care hospitals (LTCH).

Progress: BRH currently submits data on several quality measures to the CDC's National Healthcare Safety Network (NHSN), The Joint Commission, and the Centers for Medicare & Medicaid Services (CMS).

3. Participate in establishing true benchmarks for post-ICU/post-short term acute care hospital patient populations by shaping national quality measures: Centers for Medicare & Medicaid Services (CMS) Technical Expert Panels. The Centers for Medicare & Medicaid Services (CMS) contracted with RTI International to develop quality measures for the Long-Term Care Hospital Quality Reporting Program. As part of its measure development process, CMS requests input from a broad group of technical experts to inform and prioritize selected quality measures. CMS uses these technical expert panels (TEPs) comprised of individuals with expertise in the relevant fields including clinicians, statisticians, quality improvement, methodologists, as well as consumers to provide input for measure development based on their personal experience and training. Members of a TEP are selected after a national call for nominations.

Progress: Barlow's staff serves on multiple TEPs: *Barlow's representatives, by serving on technical expert panels convened by CMS, provide important input in the regulations that shape the care of chronic critically ill patients.*

4. To respond to a number of opportunities to share research findings through publications, and participation at and hosting of professional conferences, communicating new knowledge about disease processes and treatments that will lead to improved patient outcomes.
 - American Thoracic Society (ATS) 2015 International Conference, Denver, CO, May 2015
 - Poster Presentation: *Chronic Critical Illness: Updates to Weaning Outcomes at a Regional Weaning Center with Selected Subpopulation Reporting.* Poster discussion session, May 17, 2015
Hassenpflug M, Steckart MJ, Nelson DR. Chronic critical illness: updates to weaning outcomes at a regional weaning center. Am J Respir Crit Care Med 191; 2015:A1192
 - Poster Presentation: *Post-ICU Mechanical Ventilation: Outcome of the Revised Therapist-Implemented Patient Specific (TIPS©) Weaning Protocol.* Thematic poster discussion session, May 18, 2015
Hassenpflug M, Vela D, Sandoval R, Nelson DR, Sasse S, Steckart MJ. Post-ICU mechanical ventilation: outcomes of the revised therapist-implemented patient specific (TIPS©) weaning protocol. Am J Respir Crit Care Med 191; 2015:A3166
 - American Society for Parenteral and Enteral Nutrition (ASPEN) Clinical Nutrition Week 2016, Austin, TX, January 2016
 - Poster Presentation: *Chronic Critical Illness: Association Between Vitamin D Status and Weaning from Prolonged Mechanical Ventilation.* Thematic poster session, January 26, 2016
Diot S, Hassenpflug M, Steckart MJ. Chronic critical illness: association between vitamin D status and weaning from prolonged mechanical ventilation. JPEN 40; 2016:S50
 - Poster Presentation: *Chronic Critical Illness: Emerging Post-acute Care Nutrition Practice Population for CNSCs.* Thematic poster session, January 26, 2016
Diot S, Hassenpflug M, Steckart MJ. Chronic critical illness: emerging post-acute care nutrition practice population for CNSCs. JPEN 40; 2016:S49
 - American Thoracic Society (ATS) 2016 International Conference, San Francisco, CA, May 2016
 - Poster Presentation: *Chronic Critical Illness: Updates to Patient Characteristics and Outcomes at a Regional Weaning Center.* Thematic poster session, May 17, 2016
Hassenpflug M, Steckart J, Nelson DR. Chronic critical illness: updates to weaning outcomes at a regional weaning center. Am J Resp Crit Care Med 193; 2016:A5285
 - Poster Presentation: *Chronic Critical Illness: Influence of Etiology of Ventilator Dependency on Outcomes at a Regional Weaning Center.* Thematic poster session, May 17, 2016
Hassenpflug M, Steckart J, Nelson DR. Chronic critical illness: influence of etiology of ventilator dependency on weaning outcomes at a regional weaning center. Am J

Resp Crit Care Med 193; 2016:A5284

- American College of Chest Physicians (ACCP) Annual Conference, Los Angeles, CA. October, 2016
 - Poster Presentations. Thematic poster session “Mechanical Ventilation and Respiratory Failure II,” October 26, 2016:
 - ❖ Chronic Critical Illness: Updates to Patient Admission Characteristics and Outcomes at a Regional Weaning Center
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 - ❖ Post-ICU Mechanical Ventilation: Weaning Outcomes of Selected Subpopulations at a Regional Weaning Center
Hassenpflug M, Steckart J, Nelson DR. Post-ICU mechanical ventilation: weaning outcomes of selected subpopulations at a regional weaning center. Chest 2016;150(4_S):319A
 - ❖ Chronic Critical Illness: Influence of Etiology of Ventilator Dependency on Outcomes at a Regional Weaning Center
Hassenpflug M, Steckart J, Nelson DR. Chronic critical illness: influence of etiology of ventilator dependency on weaning outcomes at regional weaning center. Chest 2016;150(4_S):323A
5. Continue to collaborate with and provide data for selected stakeholders on projects and initiatives that impact post-ICU/post-short term acute care hospital patient populations.

Unreimbursed Costs

The Barlow Group and entities support associated costs not covered by general grant funding and donations.