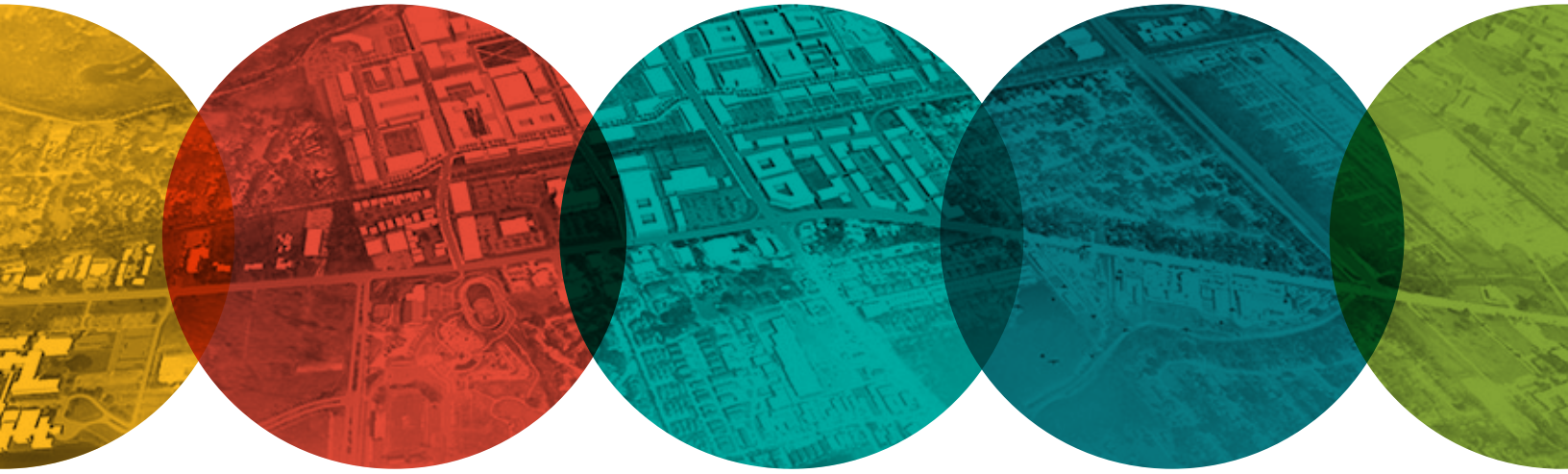

A Master Plan for the
Baton Rouge Health District

TREATMENT PLAN

Baton Rouge
Area Foundation

HEALTH

A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.
—World Health Organization

HEALTH DISTRICT

A high-performing destination for healthcare at the heart of a healthy and vibrant community.

BATON ROUGE HEALTH DISTRICT (BRHD)

A place-based health collaborative that delivers health and economic development benefits to Baton Rouge and beyond.

This "**Master Plan for the Baton Rouge Health District**" resulted from a comprehensive study of the Baton Rouge health district. It identifies key issues for land planning and transportation and highlights the importance of institutions working together to provide new services, lower costs and achieve better outcomes for patients. The report identifies key areas where healthcare providers can work together on data sharing and provides a roadmap for the creation of a diabetes and obesity treatment center. It also proposes conducting a robust analysis for a new four-year medical school in Baton Rouge, which experts from the firm of Tripp Umbach have been engaged to complete. We believe one of the biggest accomplishments of this work has been bringing our healthcare leaders together to talk about collaboration. National models demonstrate that we can accomplish more when we work together.

The Foundation began this initiative after the publication of FuturEBR, a visionary, comprehensive plan created by Mayor-President "Kip" Holden for the parish. The authors of FuturEBR recommended the preparation of a detailed plan for land use and transportation in the South Baton Rouge Medical Corridor.

This report was made possible by a generous grant from the *Fund for the Future of the Gulf*. The grant allowed the Foundation to hire experts to develop the Master Plan. A provision of the grant was to improve emergency response after disasters, and we believe that we have satisfied that important requirement.

The Foundation is grateful to our partners for sharing their time and ideas on this project. Without their support and expertise, this report would not have been possible. We believe its ultimate implementation will reinvent how health care is delivered in our region and across South Louisiana. It will change the way Baton Rouge looks at healthcare.

The Foundation hopes that our partners will remain engaged with this project. The projects identified in the Master Plan are aspirational and innovative and we must divide work and share resources and knowledge, accelerating the projects toward implementation.

October 2015.

COLLABORATORS

The Baton Rouge Area Foundation would like to thank the following collaborators for their support of the Baton Rouge Health District planning process.

Melvin L. "Kip" Holden
Mayor-President, City of Baton Rouge / East Baton Rouge Parish

Kathy Kliebert
Secretary, Louisiana Department of Health and Hospitals

F. King Alexander, PhD
President, Louisiana State University

ADVISORY COMMITTEE

BATON ROUGE HEALTH DISTRICT LEADERSHIP GROUP

The Baton Rouge Area Foundation would like to thank the leadership of Health District anchor institutions for their participation in and support of the district planning process between January 2014 and June 2015.

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Chief Operating Officer, Our Lady of the Lake Regional Medical Center

Trey Williamson
Chief Executive Officer, Baton Rouge Orthopaedic Clinic

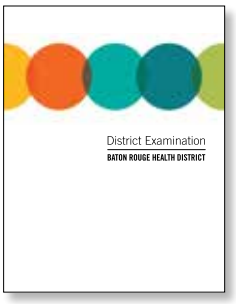
THE PLATFORM

The Baton Rouge Health District (BRHD) Treatment Plan is much more than a document; it is one component of an entire platform designed to continually examine and transform the District into a model of health.

1 THE VISION

District Examination

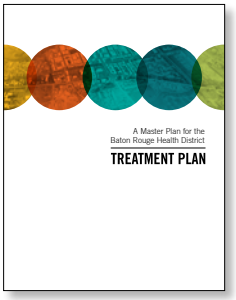
- What is a Health District?
- The Benefits of a Health District in Baton Rouge
- Measuring Progress
- Existing Opportunities



2 THE PLAN

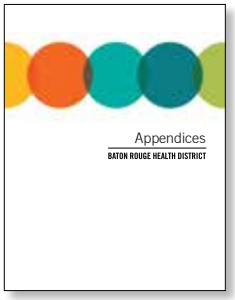
Treatment Plan

- Four Key Plan Issues
- Detailed Diagnoses and Treatment



Appendices

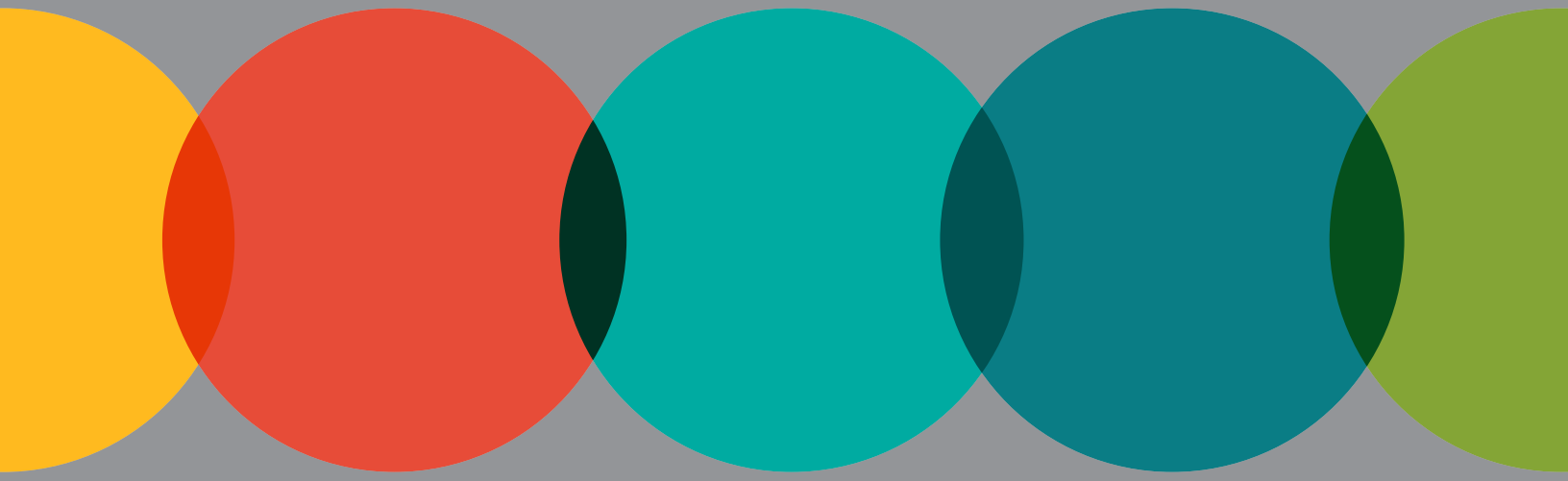
- Existing Conditions Analysis and Maps
- Historical Research
- Consultant Reports
- Task Force Meeting Minutes



3 IMPLEMENTATION

- District Governance
- Action Steps
- Addressing future District issues

CONTENTS



Introduction

How do you transform a congested medical corridor into a health district?

In 2011, FuturEBR, East Baton Rouge Parish's comprehensive plan, identified the South Baton Rouge medical corridor among the essential areas in need of a master plan.

The immediate needs—to address traffic gridlock and rapid growth—were just the beginning. Looking beyond those challenges to the greater opportunity, the idea for the Baton Rouge Health District (BRHD) was born.

This Health District Treatment Plan proposes the steps needed to transform a congested medical corridor into a health district: both a place and an organization. Marshaled together, the medical assets concentrated in Baton Rouge will enable researchers and physicians to collaborate in productive new ways, to innovate and coordinate better care, and to actively reduce the prevalence of preventable chronic disease.

In addition to improving healthcare delivery, the health district itself can be a place that supports healthy living through good planning. This BRHD Treatment Plan outlines the vision of a world-class, high-performing health destination at the heart of a healthy and vibrant community.

What is a health district and why do we need one in South Baton Rouge?

The healthcare anchors of Baton Rouge have a tremendous impact on the built environment, and the health of everyone who lives, works, and visits the area.

01 Contributing Factors to a State of Health

Source: Bipartisan Policy Center. 2012. "Lots to Lose: How America's Health and Obesity Crisis Threatens our Economic Future."

Healthcare institutions and providers across the Capital City share a common mission and mandate to improve health. But what makes us healthy? It's more than healthcare.

Beyond clinical care, behavioral factors such as diet and physical activity, and the environmental factors that influence those behaviors account for as much as 70 percent in overall health outcomes. Scientific research increasingly supports the notion that our built environment influences health and wellness. This wider focus on quality of life issues and population health is transforming healthcare in the U.S. as we know it.

Meanwhile, the high cost of treating chronic diseases is also driving changes in the business of healthcare. Providers must now look "outside of the box" for ways to prevent and manage disease in lower-cost, community-based settings.

From Buffalo, New York to Cambridge, Massachusetts, historically competitive healthcare institutions are tackling these issues together by forming collaborative, place-based "health districts." They are pioneering new ways to provide high-quality care at a lower cost, supporting research and innovation, and doing all within a well-designed built enviroment that encourages healthy choices. As both a place and an organization, health districts support a culture of health.

Baton Rouge is a microcosm of the health and healthcare issues facing communities across the nation. As hospitals and healthcare systems expand their focus to population health, planning at the district level allows them to influence health outside the walls of their facilities and beyond the boundaries of their campuses.

This guiding plan will shape the physical growth of Baton Rouge in a way that supports healthy lifestyles, while enabling district anchors to collaborate and innovate in ways that support the business of healthcare.

What are the benefits of district collaboration?

The Baton Rouge Health District is both a place and an organization. Providers in the Health District are facing the same challenges. Together, they can also share some key benefits.

BETTER HEALTHCARE FOR ALL

It's all about health. Providers in the Baton Rouge Health District can leverage their unique capabilities to deliver high-quality healthcare in a way that is greater than the sum of their parts. As a unified medical community, the District provides a platform for community health initiatives and collaboration. Whether it's finding shared cost savings or supporting research, the District exists to maximize the positive impact of its member institutions.

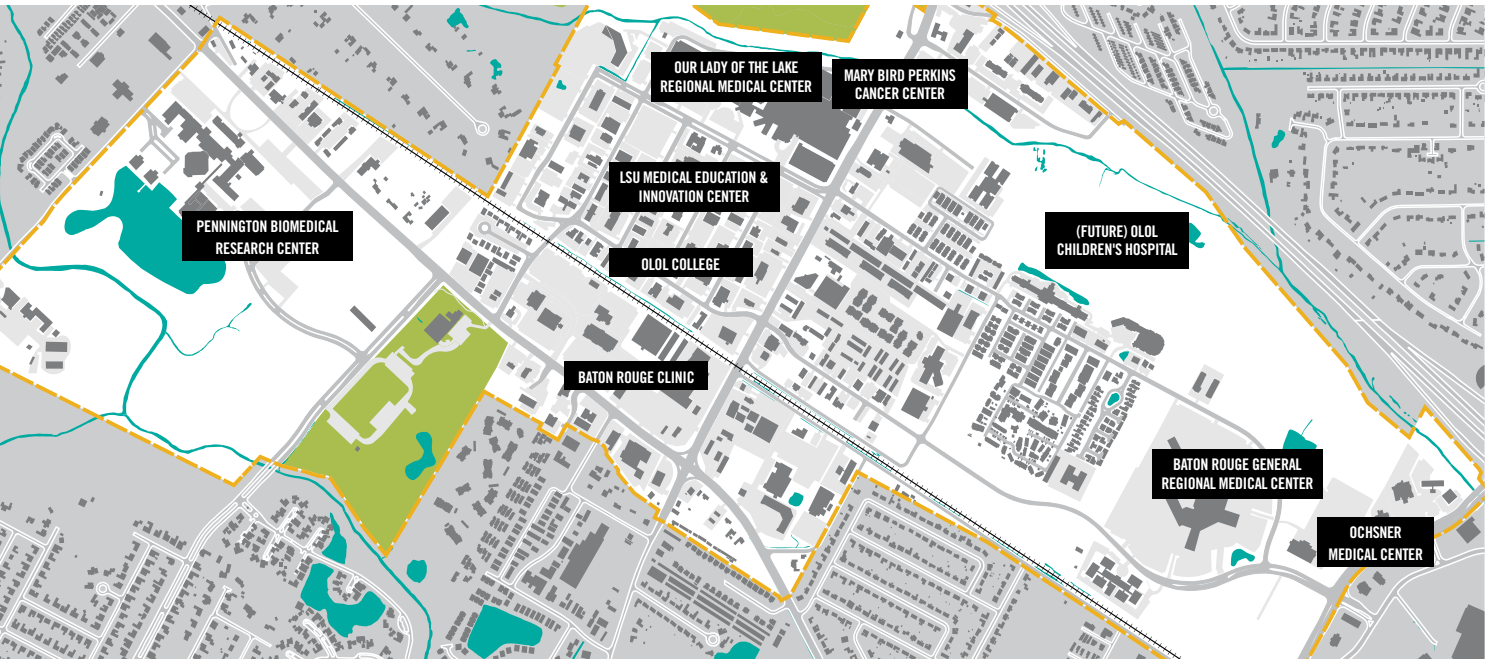
SUSTAINABLE ECONOMIC DEVELOPMENT

Thriving institutions translate into a healthy economy. The healthcare industry already drives job growth and real estate development across the city, parish and region. A Health District will give Baton Rouge an edge to compete with medical centers nationwide on destination healthcare.

A HEALTHY ENVIRONMENT

Imagine if the area surrounding a hospital were actually hospitable: a place where it's easy to walk between medical offices, parks, restaurants, and shops, or to escape to a quiet, natural setting for some fresh air. By planning together, the District can create a more connected, cohesive community that actually supports healthy behaviors like walking. A District plan will enable coordination of land use and transportation investment decisions and propose an inviting and connected public realm with safe streets and paths for pedestrian and bike activity.

The District is a place.



02 Map of the District Core study area. District membership is not limited by location.

Today, much of Baton Rouge's healthcare economy is concentrated along an unofficial and unorganized medical corridor at Essen Lane, Bluebonnet Boulevard, Perkins Road, and I-10. This busy hub has it all—major healthcare employers and hospitals, educational institutions, destination shopping, dining, parks, and cherished neighborhoods.Everything except a cohesive plan.

A guiding Health District plan enables the medical community to address shared issues, such as traffic and safety, and shared opportunities—such as building new streets, a Diabetes and Obesity Center, and enhanced medical education and research in Baton Rouge.

The District is a coalition.

03 Healthcare, academic and research anchors represented in the District Leadership Group

This document is a Treatment Plan for transforming the Baton Rouge medical corridor into a healthy place and forming a coalition to position Baton Rouge for the future of healthcare. It is the result of a year-long planning process and the contributions of hundreds of local leaders and national experts. It represents a historic first collaboration between traditionally competitive institutions in the Baton Rouge medical community, and an entirely new approach to delivering healthcare in Louisiana.

At the start of the process, the planning team convened a new District Leadership Group, a decision-making body that includes the CEO's of Baton Rouge's largest healthcare institutions, along with other leading institutions in Baton Rouge, such as Pennington Biomedical Research Center, Blue Cross Blue Shield of Louisiana, and LSU Health. This group defined the strategic direction for the plan and provided nominations for the District Task Force. Bringing together stakeholder experts from all over Louisiana, the Task Force work groups further defined and informed the Treatment Plan recommendations. The community also played an important role in shaping this plan, particularly the Baton Rouge neighborhoods who are invested in making this area a vital and accessible destination.

This plan is a platform for change.

This Treatment Plan is part of a platform designed to continually examine and improve the District.

This plan is much more than a document; it is part of a platform designed to continually examine and improve the District.

Based on a metaphor of medical care, the process began with the District Examination (originally titled the Health District Vision Framework) in 2014. The District Examination provided an initial assessment of the existing District and defined the vision for turning the District into a more vibrant, healthy, and efficient place.

This document, the Treatment Plan, is the next logical step. It identifies the most critical issues affecting the state of the District today and recommends both short and long-term action steps for treating these issues.

The issues presented in this Treatment Plan are foundational topics of concern for the emerging BRHD. However, these four issues are only the beginning and many more exist. In this sense, the Treatment Plan should also be viewed as a template for assessing additional and future opportunities and challenges.

DIAGNOSIS

CHIEF COMPLAINT
What are the primary issues and / or challenges facing the Health District?

KEY SYMPTOMS OBSERVED
What are the dimensions of these issues and challenges? How are they characterized?

VITAL SIGNS
How is the problem measured? How is its magnitude or level of severity determined?

ASSESSMENT
What conclusions can we draw based on this examination?

TREATMENT PLAN

PRIORITY INTERVENTIONS
What immediate actions can be taken to address the core issues?

PRESCRIPTIONS
What are the ongoing actions to correct the issue in the long-term?

FOLLOW UP TESTS (PERIODIC CHECK-UP)
How is it determined if corrective actions are having the desired impacts? What is the plan for tracking over time and informing future decisions?

EXPECTED OUTCOME
How is success defined?

This plan is one milestone in a rich and ongoing planning process.

2011 **THE BIG IDEA**
FuturEBR outlines the need for further traffic and land planning in the South Baton Rouge medical corridor.

2013 **FORM THE PLANNING TEAM**
Baton Rouge Area Foundation's Request for Proposals (RFP) for Master Planning is released.

2014 **COMMUNICATE THE VISION**
The Health District Vision Framework (later revised and renamed the District Examination) is published.

BRING STAKEHOLDERS TO THE TABLE
District Leadership Group is convened.
Task Force Workshops and Public Meetings are held.

DISTRICT FORMATION
Articles of Incorporation and 501(c)3 documentation are filed.
Governance structure options are being reviewed.
Website brhealthdistrict.org is launched.

2015 **HEALTH DISTRICT TREATMENT PLAN**

This plan is organized to treat four issues that are critical to the success of the Health District.

This Treatment Plan focuses on four critical planning issues defined by the District Leadership Group and developed with input from the Task Force Workgroups: Healthy Place, Health Education and Research, Healthcare Innovation, and Resiliency and Disaster Preparedness.

HEALTHY PLACE

This section explores physical planning aspects of the District, including transportation connectivity and access, land use, development potential, open space, green infrastructure networks, and District character/sense of place.

HEALTH EDUCATION + RESEARCH

This section details opportunities for District-wide collaboration around expanded medical education and training, allied health education, and basic and clinical research.

HEALTHCARE INNOVATION

This section highlights potential collaborative opportunities for BRHD providers in integration of post-acute services, information systems and clinical data integration, and the development of a diabetes and obesity center.

RESILIENCY + DISASTER PREPAREDNESS

This section of the plan focuses on the critical role of the BRHD in regional emergency preparedness and large-scale medical evacuations and identifies opportunities for increased collaboration and coordination between District healthcare anchors and other community stakeholders in emergency response.

Examining the District like a patient.

	HEALTHY PLACE	HEALTH EDUCATION + RESEARCH
DIAGNOSIS		
CHIEF COMPLAINT	Acute Congestion On Arterial Roads	Baton Rouge Has a Limited Pipeline for Talent to Advance Healthcare Delivery and Research
KEY SYMPTOMS OBSERVED	1. Inefficient Transportation Network 2. Weak Alternatives to the Car 3. Poor Access to Parks and Open Spaces 4. Uncoordinated, Sprawling Development	1. Restrictions to the Growth of Medical Education and Training 2. Opportunity to Expand Collaborations in Research and Education 3. Untapped Potential for Clinical Research Trials and Industry Connections
VITAL SIGNS	40,000+ Cars / Day on Major Arterials Only 25 Street Intersections Per Square Mile Only 20% Sidewalk Coverage on District Streets	Only 12% Of LA's Medical Residents Receive Training in Baton Rouge 50% Fewer Clinical Trials than Peer Cities
ASSESSMENT	Auto-oriented sprawl is bad for business, health, and the business of healthcare.	The Health District's clinical, educational, and research assets are siloed, limiting opportunities for growth and innovation.
TREATMENT PLAN		
PRIORITY INTERVENTIONS	Build the District Street Network. Build the Health Loop Trail.	Harness local assets to establish a unique four-year medical school in Baton Rouge.
PRESCRIPTIONS	1. Create connections for efficient circulation and access. 2. Enable people to walk, bike, and take transit. 3. Connect to parks and open spaces. 4. Promote balanced, diverse, and orderly development.	1. Engage partners in medical education expansion in Baton Rouge. 2. Build research and education networks to support innovation and workforce growth. 3. Expand clinical trials in Baton Rouge.
FOLLOW-UP TESTS (ANNUAL CHECK UP)	Travel Speed on Arterials Pedestrian and Bicyclist Counts Employee Travel Behavior Survey	Number of Students and Researchers in the Health District Number of GME Spots in Baton Rouge Number of Industry-Sponsored Clinical Trials
EXPECTED OUTCOME	An Efficient, Safe, and Pleasant Place for All	Maximize Health Education + Research Assets to Advance Clinical Practice and Grow Healthcare Economy

HEALTHCARE INNOVATION

Healthcare Delivery Focused on Acute Care Rather Than Population Health Management

1. Barriers to Addressing Preventable Chronic Disease in the Community
2. Lack of Coordination in the Delivery of Patient Care

1 in 3 Medicare Patients in Baton Rouge Have Diabetes

Louisiana Ranks 37th among All States in Supply of Primary Care Physicians (PCPs)

Diabetes and Obesity in Baton Rouge Amount to $1.5 Billion in Healthcare Costs Annually

Healthcare providers need new tools and greater coordination to address the chronic disease burden in Baton Rouge.

Establish the Baton Rouge Diabetes and Obesity Center (BRDOC).

1. Incorporate the BRDOC into a Medical Home model.
2. Integrate and coordinate services to improve care.

Emergency Room and Inpatient Utilization

Prevalence of Diabetes and Obesity in the Community

Number of Residents Reached through Health Education and Wellness Services

Improved Capacity for Chronic Disease Prevention and Promoting Health in the Community

RESILIENCY + DISASTER PREPAREDNESS

Post-Katrina Momentum for Public Health and Medical Disaster Preparedness is at Risk

1. Medical Preparedness Efforts Limited to Public Health Agencies and Hospitals
2. Decline in Federal Funds for Health and Medical Preparedness Efforts
3. Challenges to Road and Utilities Infrastructure in the Event of a Disaster

Louisiana Hospital Preparedness Program Grant Funding has decreased 56% since FY 2006

22 Hospitals Engaged In Region 2 Preparedness Planning

Only 4 Points of Access into District Hospitals and ERs

The preparedness network needs long-term funding and expanded engagement to ensure district- and community-scale resilience against unforeseen events.

Establish the BRHD Resiliency Officer and Emergency Coordinator position.

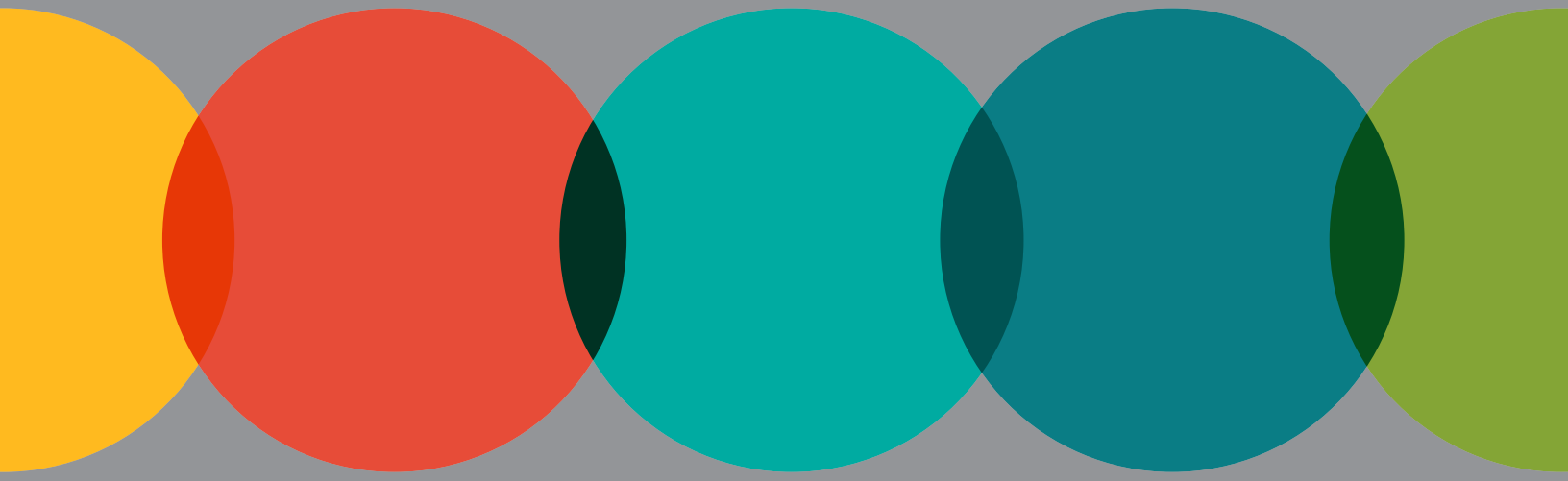
1. Adopt whole-community approach in emergency preparedness.
2. Identify sustained funding for preparedness planning and outreach.
3. Engage in district-scale resiliency planning linked to regional efforts.

Health District Preparedness Funding and Activity Levels

Number of Non-Hospital Healthcare and Service Providers Participating In Emergency Preparedness Efforts

Extent of Community Outreach Efforts

A Culture of Preparedness Across the Whole Community



Plan Issues

Healthy Place

Healthcare Innovation

Health Education + Research

Emergency Preparedness

HEALTHY PLACE

The Baton Rouge Health District will be a vibrant and accessible destination that promotes healthy living beyond the hospital walls.

HEALTHY PLACE RECORD

DIAGNOSIS

CHIEF COMPLAINT

Acute Congestion on Arterial Roads

KEY SYMPTOMS OBSERVED

1. Inefficient Transportation Network
2. Weak Alternatives to the Car
3. Poor Access to Parks and Open Spaces
4. Uncoordinated, Sprawling Development

VITAL SIGNS

40,000+ Cars / Day on Major Arterials

Only 25 Street Intersections Per Square Mile

Only 20% Sidewalk Coverage on District Streets

ASSESSMENT

Auto-oriented sprawl is bad for business, health, and the business of healthcare.

TREATMENT PLAN

PRIORITY INTERVENTIONS

Build the District Street Network.

Build the Health Loop Trail.

PRESCRIPTIONS

1. Create connections for efficient circulation and access.
2. Enable people to walk, bike, and take transit.
3. Connect to parks and open spaces.
4. Promote balanced, diverse, and orderly development.

FOLLOW-UP TESTS (ANNUAL CHECK UP)

Travel Speed on Arterials

Pedestrian and Bicyclist Counts

Employee Travel Behavior Survey

EXPECTED OUTCOME

An Efficient, Safe, and Pleasant Place for All

HEALTHY PLACE

Diagnosis

CHIEF COMPLAINT

Acute Congestion on Arterial Roads

Acute congestion on arterials is an outcome of the following key symptoms observed in the Health District:

1. Inefficient Transportation Network
2. Weak Alternatives to the Car
3. Poor access to Parks and Open Spaces
4. Uncoordinated, Sprawling Development

WHERE IS THE DISTRICT?

The Health District core is located in South Baton Rouge to the south of Interstate 10 and centered around three large healthcare anchors: Baton Rouge General, Our Lady of the Lake, and Pennington Biomedical Research Center.

CORE DISTRICT

(from west to east):

A. Pennington Biomedical Research Center (PBRC)
B. Baton Rouge Clinic
C. LSU Medical Education and Innovation Center
D. Our Lady of the Lake (OLOL) College
E. Our Lady of the Lake Regional Medical Center (OLOL RMC)
F. Mary Bird Perkins Cancer Center
G. OLOL Children's Hospital (planned)
H. Baton Rouge General Regional Medical Center, Bluebonnet Campus
I. Ochsner Medical Center - Summa/ Bluebonnet
J. BlueCross BlueShield of Louisiana

Additionally, several significant Baton Rouge healthcare institutions are participating in collaborative programs for the Health District:

K. Baton Rouge General, Mid City
L. Woman's Hospital
M. The Neuromedical Center
N. Surgical Specialty Center of Baton Rouge
O. Baton Rouge Orthopaedic Clinic
P. Ochsner Medical Center - Baton Rouge

MAPS ON THE FOLLOWING PAGES

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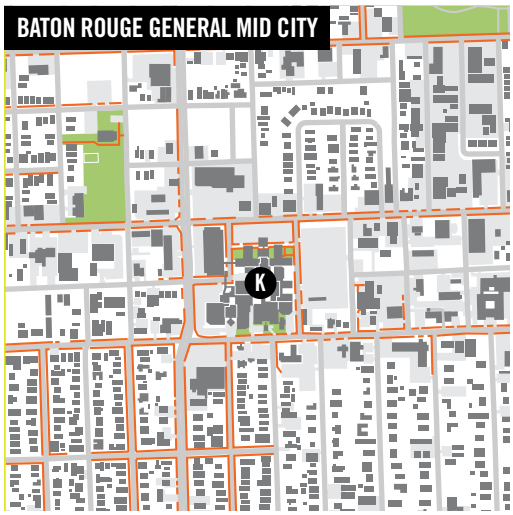
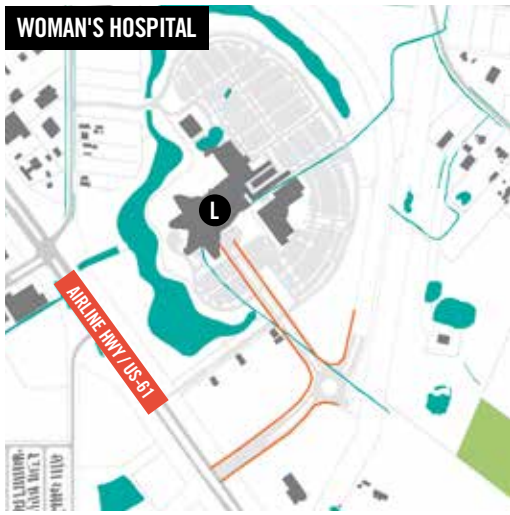
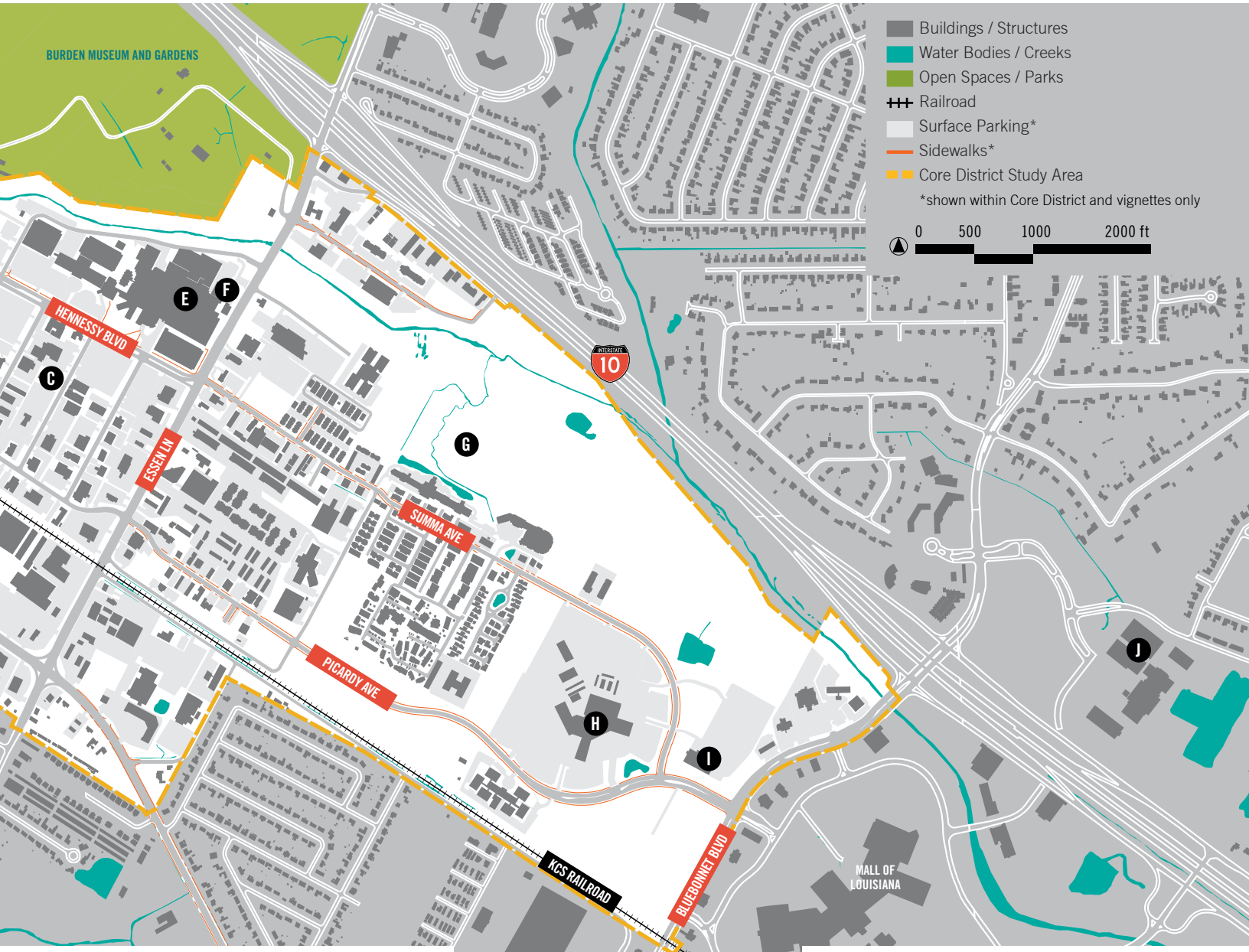
This Page (Unrotated View)

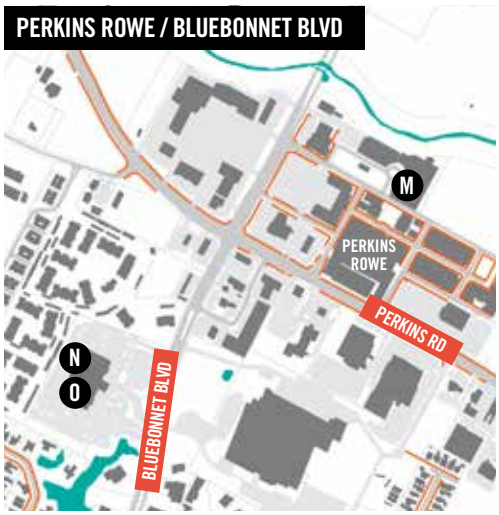
All Other Pages (Rotated View)

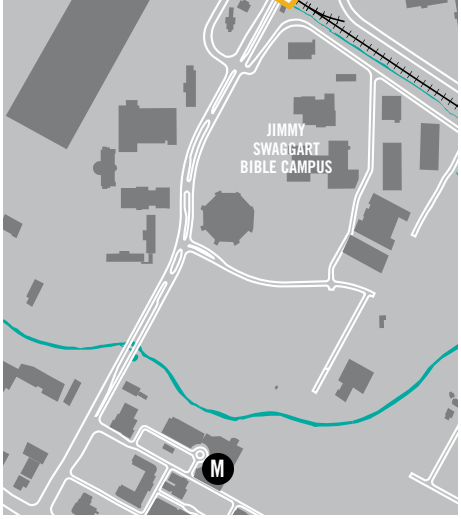




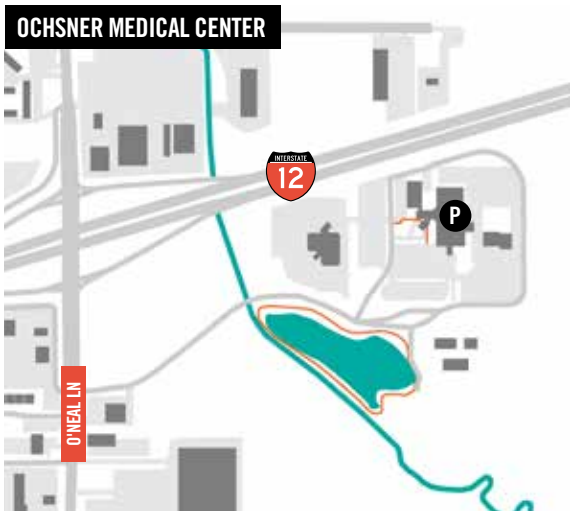


PERKINS ROWE / BLUEBONNET BLVD





OCHSNER MEDICAL CENTER



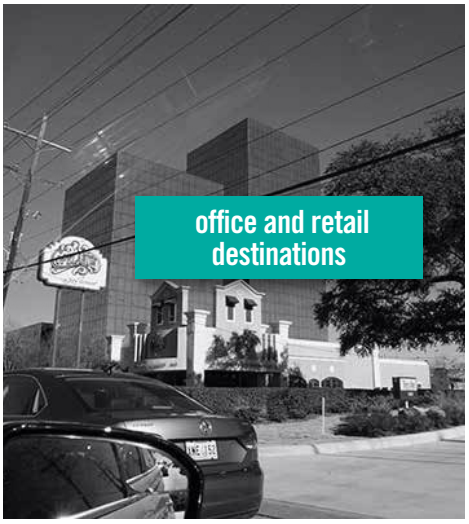
WHAT'S IN THE DISTRICT?

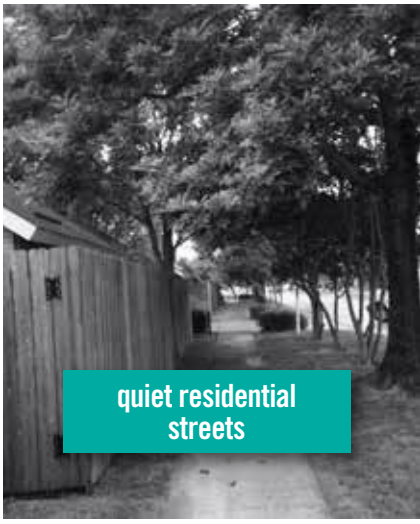

underutilized
open spaces


ongoing growth
and development
large paved surfaces


auto-oriented
development
low-density
office parks


vast amounts of
surface parking


office and retail
destinations


quiet residential
streets


unsightly utility
infrastructure
INDUSTRIAL
& FAMILY
CLINIC
5475
WALK-IN'S
congestion
lack of safe sidewalks
and crosswalks

KEY SYMPTOMS OBSERVED

Existing levels of traffic congestion within the District core are a barrier to healthcare delivery and negatively impact the health of people who live, work, and seek care there.

1. Inefficient Transportation Network

Baton Rouge is a driving town. With the exception of Downtown, which increasingly supports a car-free lifestyle, the metropolitan area has developed in a way that living without a car is virtually impossible. A 2014 study supported by the National Institutes of Health (NIH) and the Ford Foundation found Baton Rouge to be one of the most sprawling metro areas in the nation due to its separation of uses, low density of development, and disconnected street network.[1] As a result, most people drive to work and make additional vehicular trips on a daily basis for necessities.

The sprawling land use pattern combined with lack of investment in transportation infrastructure has created significant traffic challenges, which are experienced most acutely in the Health District.[2] The area was developed as part of the city's suburban growth beginning in the 1970s and currently hosts more than 11 million square feet of development and 17,000 parking spaces.[3] The interstate, Ward's Creek and KCS railroad, all of which run east-west across this area, limit access into the core District. With most drivers trying to get off or on to the interstate, District traffic is channeled into two regional arterials—Essen Lane and Bluebonnet Boulevard—that also carry large volumes of regional traffic (Figure 04). On any given day at rush hour, these two main arterials serving the District are clogged with bumper-to-bumper traffic moving at extremely slow speeds.

The congestion compromises access, quality of work life, efficient delivery of services, and opportunities for growth. It poses a significant challenge to hospital operations and patient access to services. The access limitations threaten the hospitals' ability to effectively respond to natural disasters in the region and to evacuate the Health District in a timely manner in the case of unforeseen emergencies due to lack of access options.

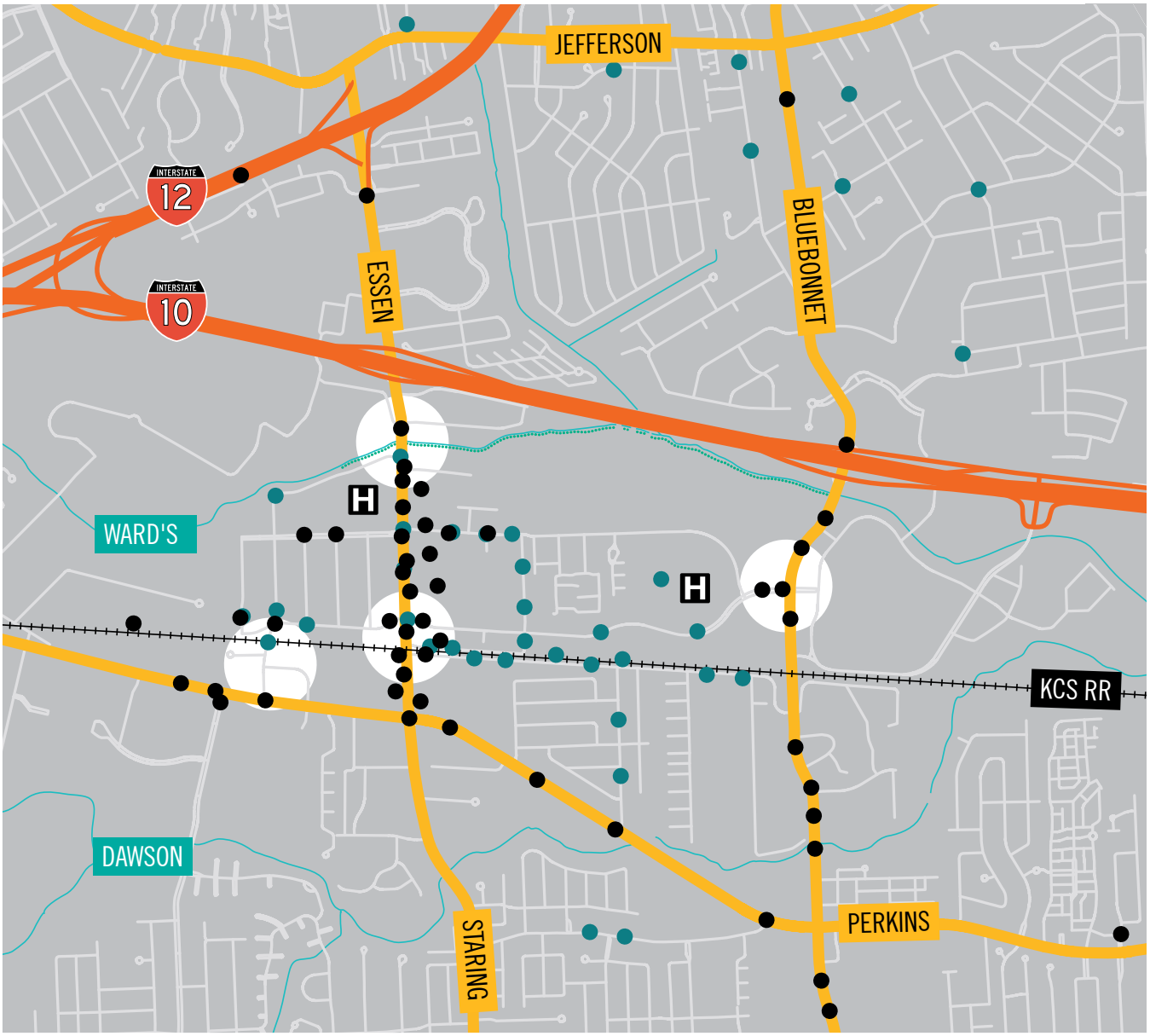
While the ongoing expansion of Essen Lane will ease traffic flow to some level in the short-term, congestion is expected to return. Not enough route alternatives exist for motorists to get into and out of the District and to travel within the District once there. The number of circulation options are critically dependent on a small number of key intersections. The street network is deficient in route alternatives within the District and to major travel corridors in the area.

1 Baton Rouge had the highest levels of sprawl among cities of its size, and was ranked 216th out of 221 U.S. cities for sprawl. Measuring Sprawl 2014. Smart Growth America. http://www.smartgrowthamerica.org/documents/measuring-sprawl-2014.pdf.

2 FuturEBR Comprehensive Plan. 2011. "Transportation". http://brgov.com/dept/planning/cpElements.htm.

3 Our Lady of the Lake (OLOL) Hospital moved to its current location near I-10 in 1978; three decades of intensive growth followed. By 2014, the District—anchored by OLOL Regional Medical Center, Baton Rouge General Bluebonnet Campus, and the Pennington Biomedical Research Center—housed 11 million square feet of development.

04 District Context Map Illustrating Existing Vehicular Circulation and Access Problems



42,690
Cars per day travel on Essen Lane

42,961
Cars per day travel on Bluebonnet Boulevard

6 TRAINS
Block crossings at Essen Lane and One Perkins Place daily

- Highway
- Arterials
- Railroad
- Creek
- Local Streets
- Access Points
- Hospitals
- Points of Congestion*
- Neighborhood Cut-throughs*

*reported by public meeting participants

KEY SYMPTOMS OBSERVED

Travel to and around the Health District by modes other than the car is difficult, which contributes to accidents and traffic.

2. Weak Alternatives to the Car

The car-oriented development of the Health District contributes to congestion and prevents people from choosing to walk—sometimes to destinations as close as 1,000 feet (4 minute walk)—due to a fear of crossing congested streets. The focus on the car as a primary mode of travel also limits the utility of buses, which are often stuck on the same roads and are unable to deposit pedestrians at locations where it is safe to walk.

People Who Walk

Walking around the Health District is difficult and sometimes dangerous. A combination of factors leads to this situation, of which the most visible is the lack of pedestrian infrastructure: 78% of District streets lack sidewalks (Figure 06). The continuity of sidewalks across the District is broken by Essen Lane which has no sidewalks or safe pedestrian crossings.

Beyond the design of District streets, however, the lack of streets is one of the main reasons why walking is virtually impossible here. Urban design research has identified street connectivity (measured by the number of intersections) to be one of the key determinants of walkability.[1] Simply put, people tend to walk more in areas where they have more route options and less distance to travel between streets. The District fares poorly when viewed from this perspective: it has, on average, almost a tenth of the connectivity of Downtown Baton Rouge (Figure 05). Even in areas that have a grid of connected streets, the long block sizes reduce the potential for through-movement.[2]

People Who Take Transit

Connections to other destinations in the greater Baton Rouge area are easily accessible by automobile with I-10 providing direct access to Downtown Baton Rouge and the airport and Perkins Road providing access to Louisiana State University (via Stanford Avenue). Automobile travel times are relatively short; however, transit travel times—by way of the region's bus system—are significantly greater due to a need for transfers to multiple buses and wait times between them.

The Capital Area Transit System (CATS) provides service to the Health District. This system needs to be better leveraged within the Health District to make it a viable transportation means for those without a car and an alternative to potentially reduce overall vehicular use.

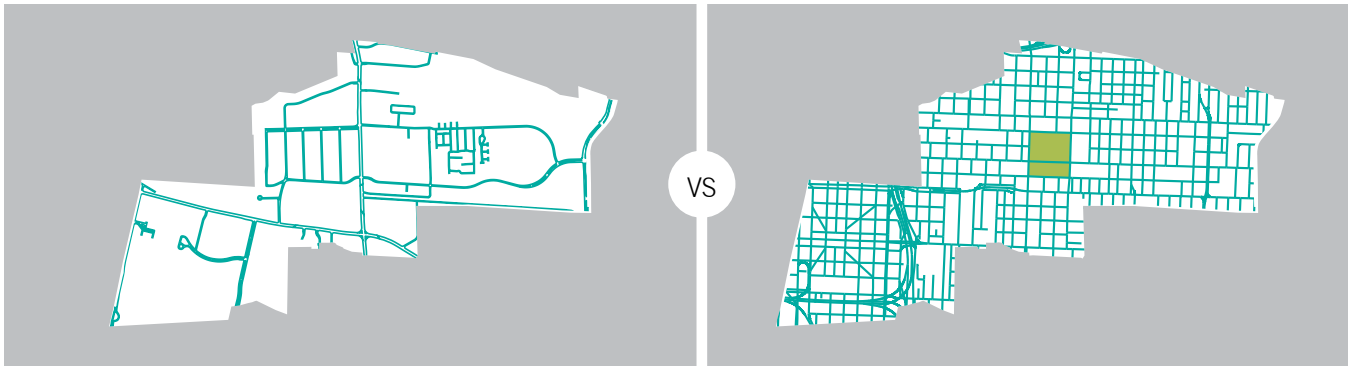
People Who Bike

Bicycle facilities within the District are in short supply: there are no designated bike lanes, shared streets, or multi-use sidewalks. The District's only bicycle facility is the 0.5 mile trail along Kenilworth Parkway. Investment in additional trail segments and bicycle lanes must be prioritized in order to make the bicycle a viable transportation choice (Figure 07).

1 Ewing, R., and R. Cervero. "Travel and the Built Environment: A Meta-Analysis." Journal of the American Planning Association, Vol. 76, No. 3, Summer 2010, pp. 265–294.

2 The typical block size in the Calais office park subdivision is 400 feet by 1,300 feet.

05 Existing District Street Network: Comparison with Downtown



"Intersection density" is a key quality of a walkable street network.

25 intersections per square mile in the District today.

VS

230 intersections per square mile in a same-size area of Downtown / Mid-City.

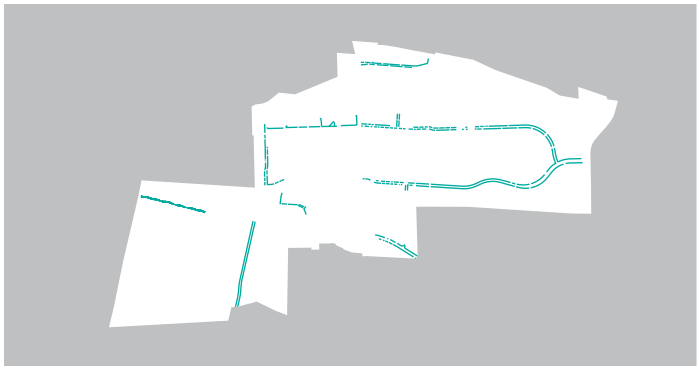
Walk Score is a number between 0 and 100 that measures the walkability of any address.

48 average Walk Score™ within the District.

VS

69 average Walk Score™ of Downtown Baton Rouge.

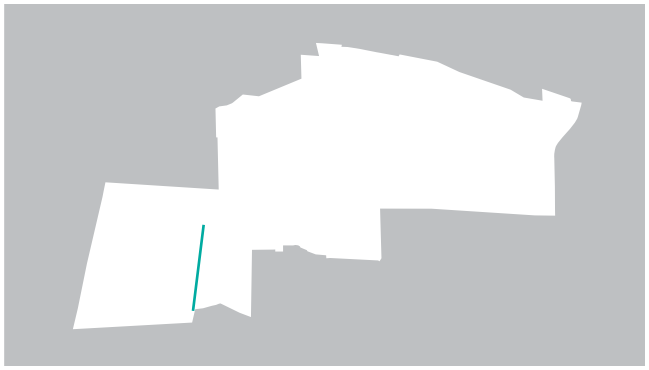
06 Existing Sidewalk Network



The design of sidewalks is critical for pedestrian safety.

78% of District streets do not have sidewalks.

07 Existing Bicycle Network



0.5 miles There are no designated bike lanes, shared streets, or multi-use sidewalks in the District. The District's only bicycle facility is the 0.5 mile trail along Kenilworth Parkway.

KEY SYMPTOMS OBSERVED

The Health District lacks public open spaces and access to existing recreational and open space amenities that surround the District.

3. Poor Access to Parks and Open Spaces

Where else do we find a bustling Health District next to a globally-recognized outdoor museum, a regional children's destination for adventure sports, and a creek with historical significance that is gaining new life with active trails?

The Health District enjoys proximity to all these amenities but has surprisingly weak pedestrian and bicycle connections to all three of them. Data analysis by Strava, a website and mobile app used to track athletic activity via GPS, shows that runners and bikers in the community largely skip the District with the exception of streets where sidewalks are present such as Summa and Picardy Avenues (Figure 08).

Burden Museum and Gardens

The Burden Museum and Gardens consists of 440 acres of LSU-owned green space accessed from Essen Lane near I-10. The property is home to globally-recognized and locally-celebrated destinations including the LSU Rural Life Museum, LSU AgCenter Botanical Gardens, and Windrush Gardens.[1] These amenities are located in a varied landscape setting that includes mature woods, cedar swamps, oxbow wetlands, agricultural fields, and allees of trees, all accessed by a network of campus roads and five miles of newly completed walking trails. The 2009 Master Plan for the Burden Center includes additional public amenities including a new Visitor's Center, Children's Garden, educational exhibits, tree house, and restructured natural landscapes.[2]

The Burden Museum and Gardens are also home to LSU's AgCenter extension and research programs, which could potentially support some of the health and wellness programming envisioned for the Health District including educational programs on healthy foods.

The Burden Museum and Gardens and Our Lady of the Lake (OLOL) Regional Medical Center share approximately half of a mile of frontage on either side of Ward's Creek with no connections between them. The Medical Center side is used for service functions that support hospital operations while the Burden Center side is a dense forest. The most recent version of The Burden Center Master Plan does not include a connector trail that links the creek edge to managed sections of the Burden property or to the Health District side of Ward's Creek.

Perkins Road Community Park

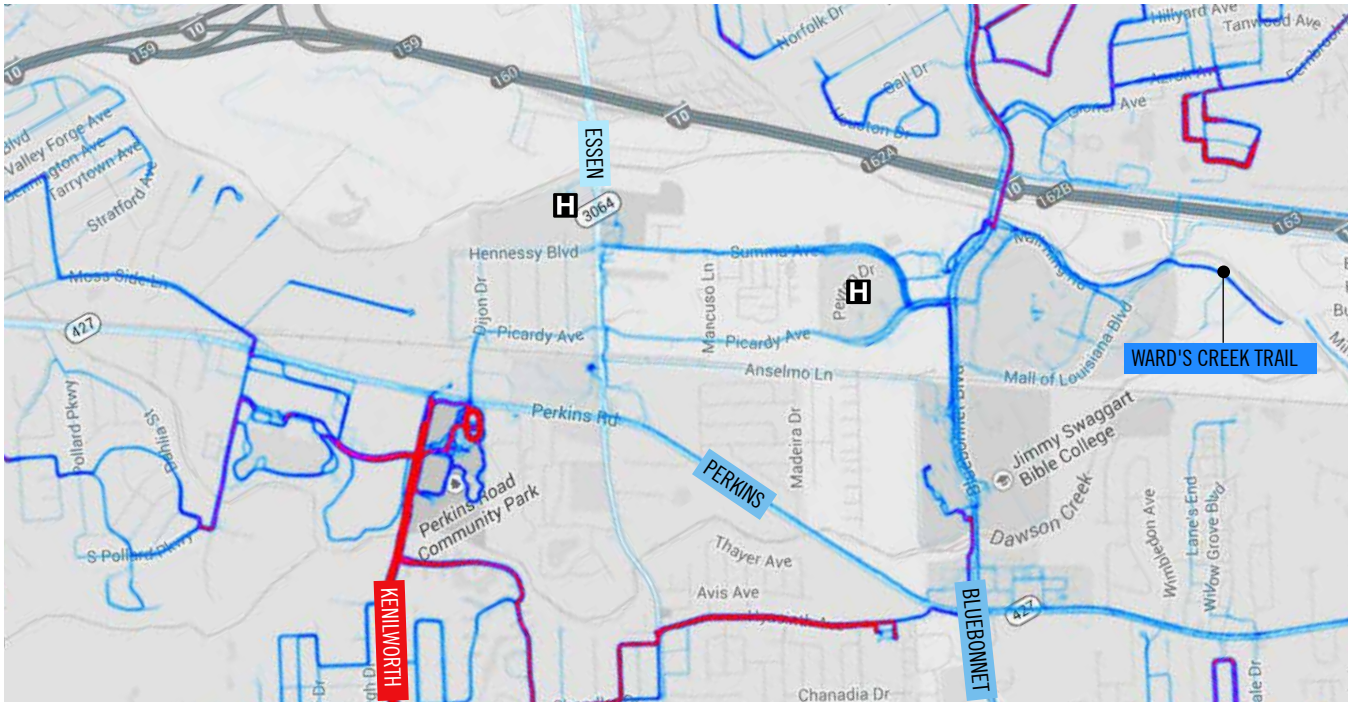
The Perkins Road Community Park is located on Perkins Road adjacent to the Pennington Biomedical Research Center Campus. Completed in 2012 by the East Baton Rouge Parks and Recreation Commission (BREC), the 52-acre "Extreme Sports Park" includes a skate park, BMX Raceway, a rock climbing wall, a shaded playground, tennis courts, and a 30,000 sq. ft. recreation center with the largest indoor basketball facility in Baton Rouge.[3] The park is a regional destination for families with children with its unique facilities and year-round programming promoting physical activity and healthy lifestyles.

1 "LSU, LSU AgCenter, Burden Foundation announce unified identity for Burden Museum and Gardens." http://www.lsu.edu/departments/gold/2013/09/burden_museum.shtml.

2 The Burden Center Master Plan. 2009. http://www.lsuagcenter.com/en/our_offices/research_stations/Burden/Features/about_us/Burden-Master-Plan-Report.htm.

3 "Perkins Road Community Park." BREC Website. http://www.brec.org/index.cfm/park/detail/139#recreation center.

08 Heatmap Indicating Where People Run and Bike Based on Mobile App Data Analysis.



Source: Strava Heatmaps. http://labs.strava.com/heatmap/#14/-91.09977/30.39097/gray/both. Activity is mapped based on level of intensity, ranging from light blue (low use) to dark blue (medium use) and red (high use).

Ward's Creek

Ward's Creek in East Baton Rouge Parish is a tributary in the Bayou Manchac watershed, which feeds into the Amite River. In 1952, Ward's Creek was dredged, widened and straightened with concrete banks in places to serve as a "diversion channel" for stormwater.[4]

Today, Ward's Creek serves a significant role in the City's stormwater management system. The speed and volume of the water moved by the channel during heavy rain events has contributed to floods in downstream communities along Bayou Manchac.[5]

FuturEBR has recommended restoration of Baton Rouge's urban waterways into natural riparian corridors following current best practices in sustainable stormwater management.[6]

The recently completed 2.2-mile Ward's Creek Trail between Bluebonnet Boulevard and Siegen Lane provides a glimpse of what the creek corridor could be: an attractive open space amenity and ecological asset that fosters compact, nature-oriented development.[7] Data shows that the new trail is already in use by runners and bikers (Figure 08). Sections of the improved corridor are also attracting paddlers.[8]

The Ward's Creek Trail segment is part of BREC's vision for the "Medical Loop"—a 7.4 mile loop of multi-use trails that links healthcare and academic campuses in South Baton Rouge.[9] BREC's new 10-year strategic plan Imagine Your Parks 2: Better Parks-Better Living includes increased funding for new walking and biking trails and better connections between existing trail segments.[10]

4 Steamboats used the mouth of Ward's Creek as a turnaround, navigating from East Baton Rouge to Lake Pontchartrain via the Amite River and Lake Maurepas. Sternberg, Mary Ann. 2007. Winding Through Time: The Forgotten History and Present Day Peril of Bayou Manchac. Louisiana State University Press. https://books.google.com/books?id=1g-QgJsrGI4C.

5 Sternberg, Mary Ann. ibid. The adoption of regulations requiring on-site retention and ongoing improvements to East Baton Rouge Parish sewage system (including the sewage pumping station on Essen Lane) are expected to improve conditions in downstream communities.

6 FuturEBR Comprehensive Plan. 2011. "Managing Environmental Resources". http://brgov.com/dept/planning/cpElements.htm.

7 The High Grove, a new apartment community, embraces the creek corridor as part of its master plan: http://highgrovebr.com/neighborhood-map/.

8 Paddle BR, http://paddlebr.com/map/.

9 The Medical Loop vision emerged from BREC's 2004 Strategic Plan. In 2008, it was folded into BREC's Capital Area Pathways Project (CAPP). http://www.brec.org/index.cfm/page/2843/n/147. BREC built the 2.2-mile phase 1 trail in 2013 with the assistance of $1M in matching funds from the Blue Cross Blue Shield Foundation.

10 "BREC 'chipping away' at pathways, trails." The Advocate. April 22, 2014. http://theadvocate.com/home/8905572-125/brec-chipping-away-and-trails.

KEY SYMPTOMS OBSERVED

As the City-Parish takes steps to overhaul zoning, the Health District has an opportunity to adopt development regulations that create a uniform sense of place and a pedestrian-friendly public realm.

4. Uncoordinated, Sprawling Development

Land use development in the City of Baton Rouge and East Baton Rouge Parish is regulated by the Official Zoning Map and the Unified Development Code (UDC), which divides the City-Parish into zoning districts and identifies development criteria for each district. The zoning districts are identified by use (such as Single Family Residential District), and in some instances by use and context (such as the Neighborhood Office District). The development regulations include restrictions on the use, height, number of stories, and size of buildings as well as specifications on the location of a building within its parcel.

While some cities have implemented institutional or healthcare zoning districts, there are none currently available within the UDC. Hospitals are permitted in A1 Single Family Residential Districts, which are typically reserved for single family uses in most zoning codes.[1]

Current Zoning in the Health District

A large percentage of the 1,000+ acre study area for the BRHD is zoned C2—Heavy Commercial District, which specifically permits the construction of laboratories, offices, and other research facilities in addition to a wide variety of other uses ranging from gas stations to townhomes. There are also a number of residentially-zoned parcels although the majority of the District's residential uses are located in commercially-zoned areas. (See Figure 09 for zoning. Building uses are shown in Figure 10 on page 40).

Like elsewhere in the US, zoning was established in Baton Rouge to protect the health, safety, and welfare of the community. Our understanding of what this means, however, has evolved since the 1950s when the Baton Rouge zoning ordinance and other codes around the nation were rewritten to support suburban growth in post-World War II cities. A growing body of research shows that zoning codes of this era may have contributed to the obesity epidemic in the nation by promoting the development of use-segregated and car-oriented communities where walking is not only unsafe, but often impossible.[2] The UDC, while adopted in 1995, builds on the legacy of car-centric zoning codes.

Ongoing Zoning Updates

The City-Parish has sought to address the need for walkability by adding Urban Design Districts to the zoning code. These include stricter development requirements intended to build a sense of place and a unified public realm.

One of the primary recommendations of FuturEBR, the comprehensive plan for East Baton Rouge Parish, was the revision of the UDC to enable mixed-use buildings and districts, shared parking, and to promote pedestrian-oriented, compact development. The City-Parish is taking steps to overhaul the UDC in the near term,[3] with an end goal to make the city more walkable. The code, as it currently stands, is a significant barrier to orderly development that builds a sense of place and a vibrant, pedestrian-friendly public realm.

1 Hospitals are also permitted by right in commercial and industrial districts with the exception of neighborhood commercial districts.

2 Talen, E. 2013. "Zoning For and Against Sprawl: The Case for Form-Based Codes." *Journal of Urban Design*. May 2013, Vol. 18 Issue 2, p175-200.

3 Young, R. "Baton Rouge Planning Director Frank Duke Hopes to Overhaul City-Parish Zoning Ordinance." The Times-Picayoune. February 04, 2015. http://www.nola.com/business/baton-rouge/index.ssf/2015/02/baton_rouge_planning_director.html.

09 Map of Existing Zoning

Zoning categories currently in use in the Health District

Commercial Districts

C1	Light Commercial District
C2	Heavy Commercial District
C-AB-1	Commercial Alcoholic Beverage One District
C-AB-2	Commercial Alcoholic Beverage Two District
HC1	Heavy Commercial One District
HC2	Heavy Commercial Two District
LC1	Low Density Commercial One District
LC3	Low Density Commercial Two District

Residential Districts

A1	Single Family Residential District
A2	Single Family Residential District
A2.1	Zero Lot Line Residential District
A3.1	Limited Residential
A3.3	Limited Residential
A4	General Residential

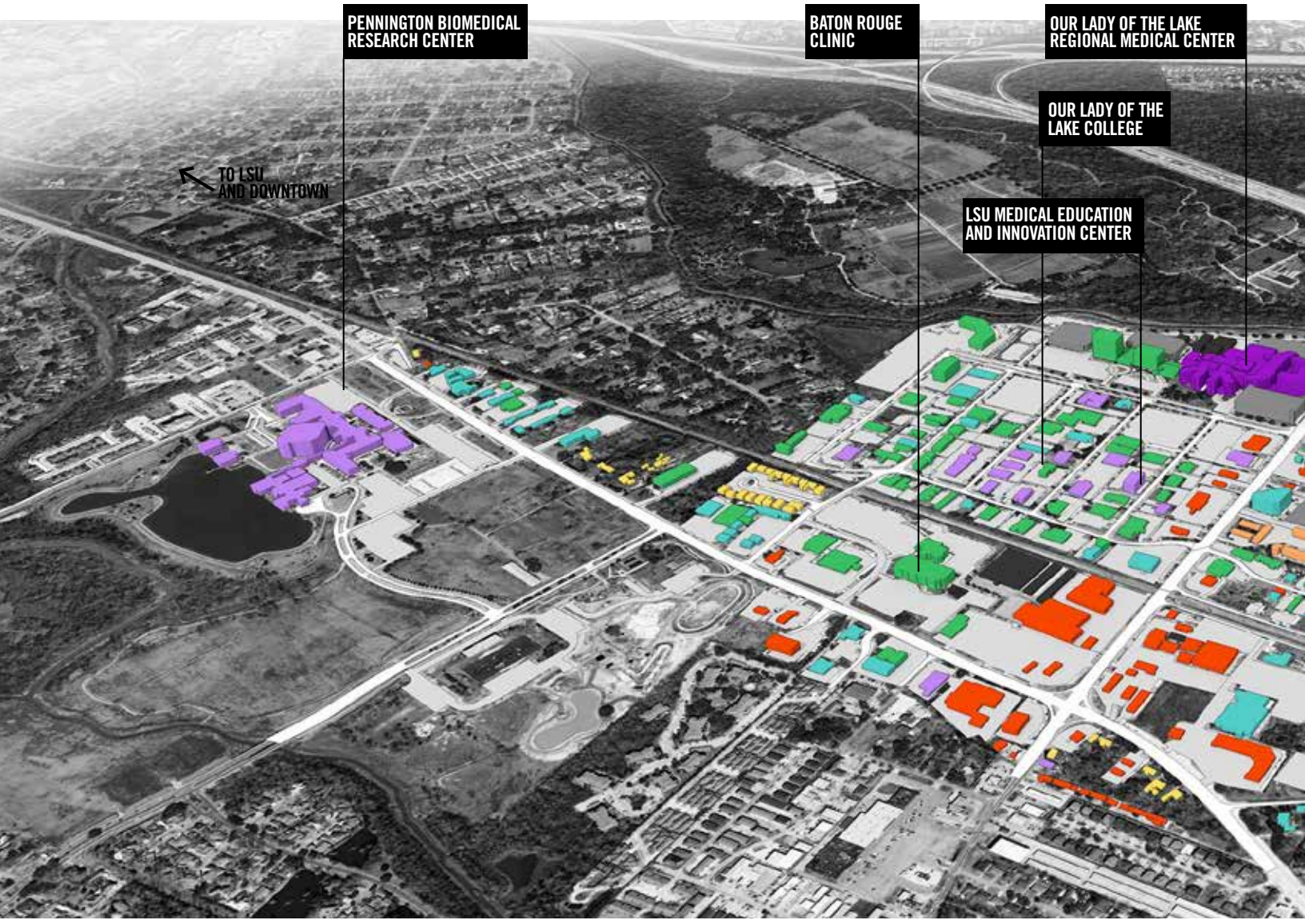
Other Districts

B1	Transition
GOL	General Office Low Rise
M1	Light Industrial
SPUD	Small Planned Unit Development

- Parcel Boundary
- Zoning District Boundary
- General Office Districts
- Commercial Districts
- Residential Districts
- Light Industrial Districts
- Planned Unit Developments
- Hospitals
- Study Area Boundary

60%
of the Health District is zoned commercial.

10 Map of Existing Building Uses



USE CATEGORIES (PERCENTAGES OF TOTAL GROSS SQUARE FEET)

- 2% RESIDENTIAL — SINGLE FAMILY
- 12% RESIDENTIAL — MULTI-FAMILY
- 1% RESIDENTIAL — ASSISTED LIVING
- 2% HOTEL
- 6% RETAIL AND SERVICES
- 13% EDUCATIONAL INSTITUTION
- 20% HOSPITAL
- 21% MEDICAL OFFICE / OUTPATIENT CLINIC
- 9% OFFICE— GENERAL
- 3% INDUSTRIAL / INFRASTRUCTURE
- 10% PARKING DECK
- 1% VACANT

Land Subdivision Patterns

Another significant barrier to orderly development in the District is irregular subdivision patterns. The mega-block located between Summa and Picardy Avenue to the east of Essen Lane, for example, is fragmented in a manner that makes future redevelopment extremely challenging. This single block measures over 1,700 feet by 1,400 feet, which is roughly equivalent to 20 Downtown blocks, without any intervening public right-of-ways.

Existing Land Uses

While the study area for the Health District includes a wide variety of uses ranging from residential to office and retail, these uses are segregated and clustered in a way that makes synergistic relationships, such as employees walking to work or to restaurants, impractical (Figure 10).

HEALTHY PLACE

Treatment Plan

PRIORITY INTERVENTION

TIMEFRAME
5-7 Years

ESTIMATED COST
$17M
Dijon Dr Extension
$25-30M
Midway Blvd, Phase 1
$2-4M
Picardy Rerouting

LEADS
City of Baton Rouge / East Baton Rouge Parish
Capital Region Planning Commission

KEY FUNDING SOURCES
Capital Region Planning Commission / FHWA Federal-Aid Planning Funds
City of Baton Rouge / East Baton Rouge Parish

DISTRICT ROLE
Coordination
Advocacy

NEXT STEPS
Right-of-way Acquisition
Environmental Assessment
Engineering Study for Design Guidelines

Build the District Street Network

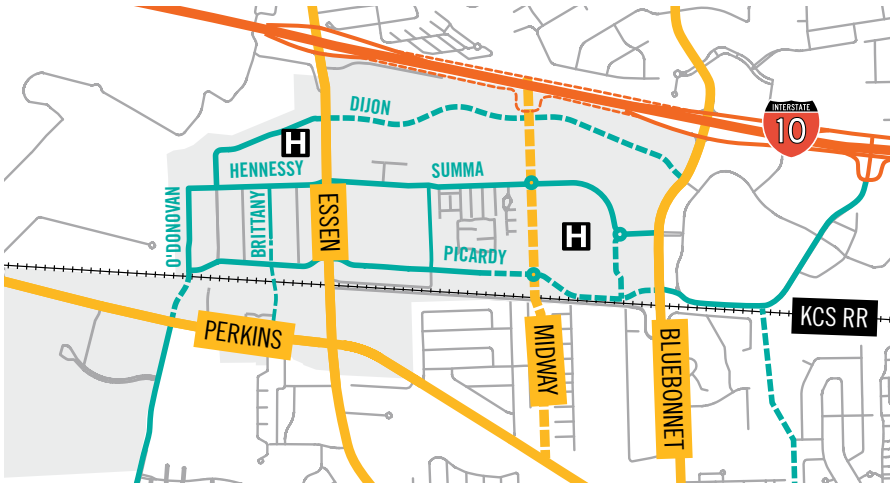
The BRHD must act immediately to advance the implementation of a robust arterial street network, which must be in place to support near-term growth of District institutions and regional travel needs.

The proposed arterial and major street network includes Midway Boulevard, Dijon Drive (extension from Essen Lane to Bluebonnet Boulevard) and Picardy Avenue rerouting to the Mall of Louisiana Boulevard. (See page 48 for additional details).

Midway Boulevard is included in the EBRP Major Street Plan (adopted by the City of Baton Rouge in 2009), and the need for the corridor is widely acknowledged. Construction of Midway Boulevard between Perkins Road and Dijon Extension is Phase 1. Phase 2 includes I-10 access with frontage roads.

The proposed Midway Boulevard corridor (Figure 11) parallels Essen Lane and Bluebonnet Boulevard, distributing traffic loads among the three, and improving connectivity within and circulation around the District with the help of two major east-west corridors: Dijon Drive (new northern road) and Picardy Avenue. The latter is proposed for rerouting traffic to the Mall of Louisiana Boulevard for easier I-10 access.

Midway Boulevard extends to Perkins Road to the south, providing a new access point into the District with a proposed rail underpass. In the long-term, Midway Boulevard will also provide access to I-10 via new frontage roads, which would take motorists to re-constructed ramps at Essen Lane and Bluebonnet Boulevard for highway access. The additional network capacity and connectivity provided by Midway, Dijon and Picardy are necessary to support current operations at area hospitals and to enable future growth. Roundabouts can be added at the intersections of Midway Boulevard with Summa Avenue and Picardy Avenue to slow traffic speeds.



11 Proposed Arterial and Major Street Network (excerpt from page 46).

PRIORITY INTERVENTION

TIMEFRAME
2-5 Years

ESTIMATED COST
~$4M

LEAD
BREC

KEY FUNDING SOURCES
BREC (trail)
Grants (bridge)
Land owners (easements)

DISTRICT ROLE
Coordination
Fundraising

NEXT STEPS
Easement Acquisition
Conceptual Design
Identify Funding

Build the Health Loop Trail

The Health Loop will give District employees, residents, and visitors an opportunity to get fresh air and a place to take walks, run, or bike outdoors.

Widespread consensus among Health District stakeholders supports BREC's vision of a 7.4-mile trail loop around the District. The BRHD Landscape Framework Plan (Figure 17 on page 65) includes the Health Loop as the basis of its proposed trail network. The extension of the existing trail westward from Bluebonnet Boulevard to the OLOL campus is seen as a high priority for the District.

BREC's new 10-year strategic plan allocates $5M from its $73M Capital Improvements Program (CIP) to the development of "connectivity trails or greenways/blueways and supporting trail facilities."[1] The funding is not project-specific: BREC is expected to prepare a parish-wide trail master plan and engage the public to determine priorities for CIP spending. Based on a cost of $500,000 per mile of trail, the allocated funds can only cover the construction of up to 10 miles of trails throughout the Parish in the next 10 years. The percentage of these funds that can go towards the Health Loop is uncertain. Additional funds would also be required to build bridges and other site-specific infrastructure to accommodate the trail.

The BRHD can facilitate the completion of this segment in the near term by facilitating multi-institutional discussions with BREC on trail location, easement transfer, and issues related to the design, construction, and maintenance of the trails. A trail connection to Burden Center should be made a priority to enable District users to take advantage of its trails and natural open spaces. Additional partners can be brought on board to support habitat restoration along the creek.

Creek-adjacent land between Essen Lane and Bluebonnet Boulevard is largely undeveloped. This development should include housing, mixed-use, and healthcare related facilities. The BRHD can work with current and future landowners to coordinate development in this area.

The BRHD can also bring experts from its member institutions to its partnership with BREC to track utilization and health impacts of new trails. Such studies can inform future trail projects and foster the funding needed for the entire Health Loop.

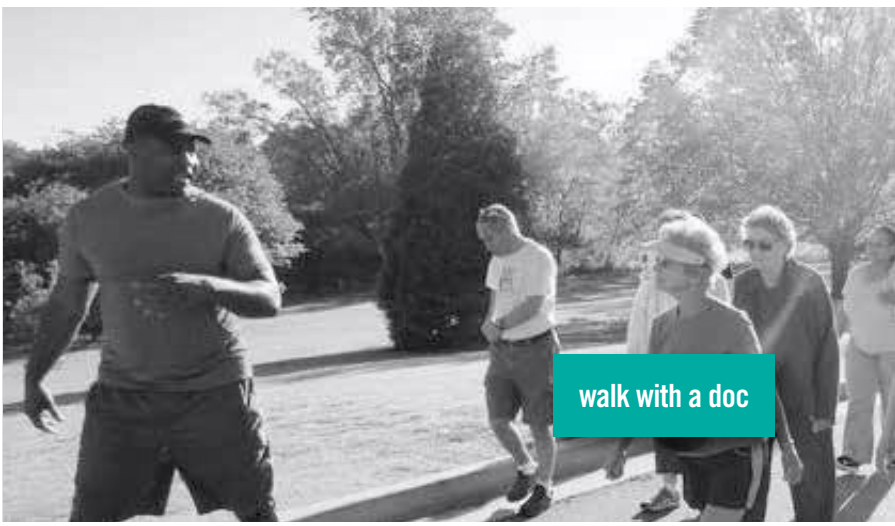
1 Capital Improvements Program." Imagine Your Parks 2. http://brec.org/assets/IYP2/ImagineYourParks2.pdf.


kids learning to bike


healing gardens
Photo Credit: K Duteil


new trees
daily commutes and trips to stores


Photo Credit: Atlanta BeltLine
fun and charity runs
318


walk with a doc


Ward's Creek Trail, Photo Credit: The Advocate
bikers of all ages and gender
LHS

THIS IS THE FUTURE OF THE BATON ROUGE HEALTH DISTRICT

A place with signature parks and open spaces.

Rx PRESCRIPTION

A well-connected street framework is the foundation of a successful Health District that supports institutional growth and community development.

1. Create connections for efficient circulation and access.

1.1 Adopt a Street Framework Plan.

No silver bullet solutions exist for the systemic congestion problem currently experienced in the BRHD. Multiple solutions must be advanced simultaneously to make progress over time. Key to these solutions is the phased construction of new infrastructure guided by a clear vision of the desired outcome. The Street Framework Plan (Figure 12) provides guidance towards achieving this vision.

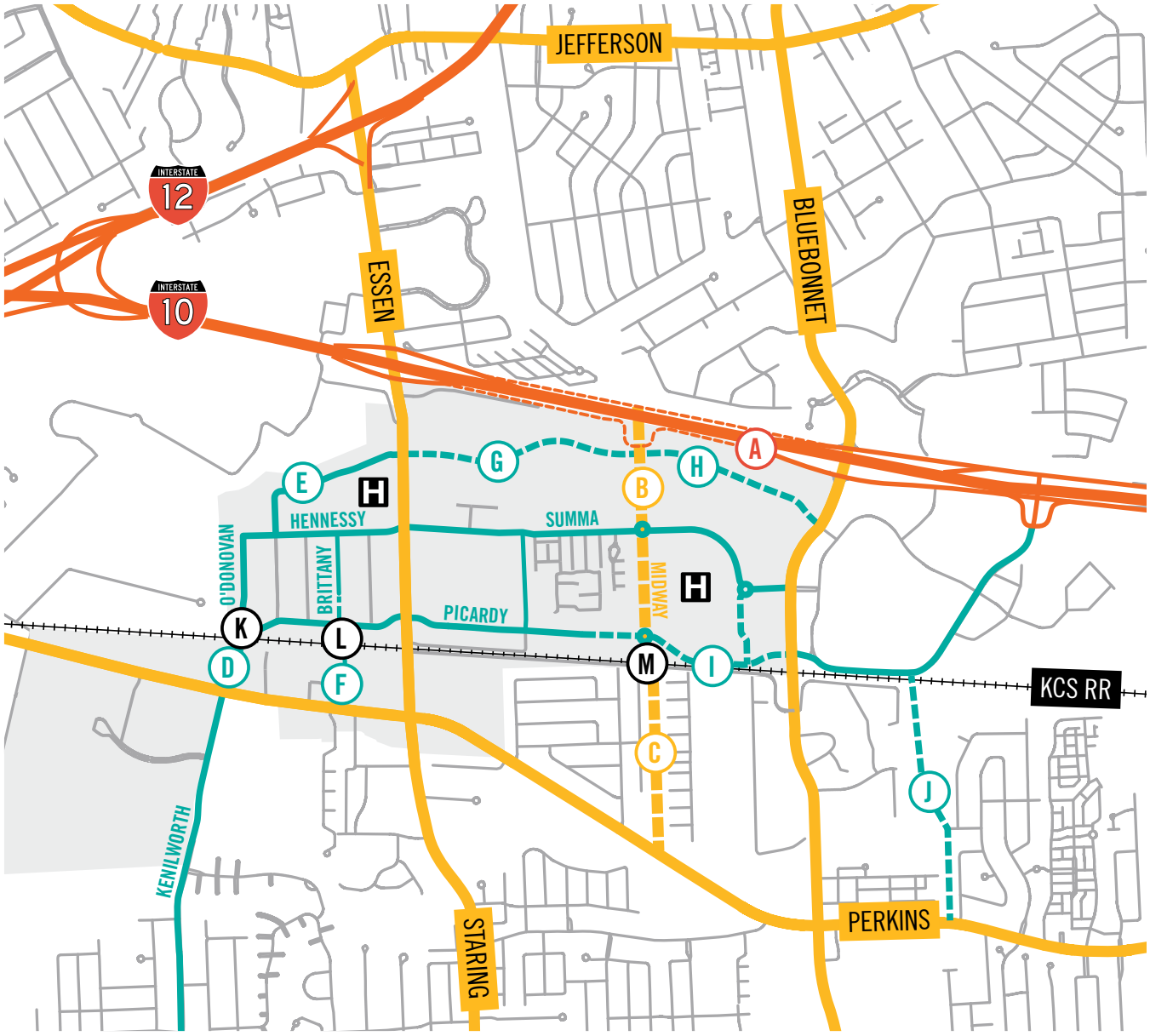
A Street Framework Plan is a long-term vision illustrating where future streets can be added to an existing network to improve access and circulation. It also establishes an organizational hierarchy of streets based on primary function. It is not meant to be viewed as a blueprint but as a guide: detailed engineering studies and in some cases impact studies will be required to set the exact location and route of planned streets.

The BRHD Street Framework Plan builds on the foundation of FuturEBR to establish a road map for future infrastructure investments that benefit not only those in cars, but also those who walk or bike between destinations. The plan proposes a well-connected network of major streets, urban arterials, and highway frontage roads that have been optimized through high-level testing of future development scenarios. To support this, the study team performed a planning-level traffic analysis to understand current traffic conditions and estimate how a more robust street network could help prepare the Health District for future growth. This analysis was a modified traffic impact study that calculated expected number of trips from new development, as well as potential reductions owed to the development, over time, of a more walkable and well-connected district environment through district planning activities.

The East Baton Rouge Parish (EBRP) Major Street Plan should be amended to include the urban arterials and major streets illustrated on the BRHD Street Framework Plan. Doing so will enable timely implementation through government, District, and landowner initiatives. Establishing this network should be a high-level priority for District institutions.

The illustrated version of the Framework Plan (see page 52) also includes a vision for an enhanced local street network interwoven with a district-wide network of public open spaces and trails. The implementation of this fine-grain, more pedestrian-scale network requires close coordination between the District governance, organization, local landowners and the City-Parish government. The BRHD must act

12 BRHD Street Framework Plan: Organizational Hierarchy of Existing and Proposed Streets



HIGHWAY

PROPOSED

- (A) I-10 frontage roads between Essen Ln. and Bluebonnet Blvd.

URBAN ARTERIALS

EXISTING

- Essen Ln.
- Bluebonnet Blvd.
- Perkins Rd.

PROPOSED

- (B) Midway Blvd. to frontage road
- (C) Midway Blvd. to Perkins Rd.

MAJOR STREETS

EXISTING

- Picardy Ave.
- Kenilworth Pkwy.
- Mall of Louisiana Blvd.

PROPOSED

- (D) Kenilworth-O'Donovan connection
- (E) Service road (Dijon) upgrade
- (F) Brittany Dr. extension to Perkins Rd
- (G) Dijon Dr. extension to Midway Blvd
- (H) Dijon Dr. extension to Bluebonnet Blvd
- (I) Picardy Ave. rerouting to Mall of LA Blvd.
- (J) Picardy-Perkins Connector

RAIL CROSSINGS

EXISTING

- Essen Ln. (at grade)
- Bluebonnet Blvd. (underpass)
- One Perkins Pl. (at grade) - see K below

PROPOSED

- (K) O'Donovan Dr. (underpass) replaces One Perkins Pl. at-grade crossing
- (L) Brittany Dr. (underpass)
- (M) Midway Blvd. (underpass)

proactively to secure new local street connections as parcels get redeveloped.

1.2 Strengthen Arterial Network.

One of the key strategies the Street Framework Plan employs to optimize road capacity is to provide east-west travel alternatives to motorists who would typically turn onto Essen and Bluebonnet to get to I-10. Turning these time-consuming turn movements into faster through movements (i.e., going straight) will help move traffic at key intersections while also shifting traffic volumes away from urban arterials.

The street alignments described below differ from the projected streets published in the EBRP Major Street Plan.[1] The BRHD should work with the City-Parish Planning Commission (CPPC) to update the Major Street Plan as a first step towards street implementation.

1.2.1. Extend Dijon Drive / Service Road to Bluebonnet Boulevard.

Today, Dijon Drive is a well-utilized north-south route that carries traffic from Perkins Road (via One Perkins Place Drive) to Hennessy Boulevard. Past Hennessy, Dijon becomes a hospital service road for the OLOL Regional Medical Center. Extending Dijon Drive / Service Road to Bluebonnet Boulevard creates a new major street that adds a key east-west route.

The Dijon Drive extension will provide efficient intra-campus flow between Our Lady of the Lake Regional Medical Center and the planned OLOL Children's Hospital to the east of Essen Lane. It will create an additional street that will enable traffic to bypass the Baton Rouge General Medical Center, eliminating cut-through traffic from the campus.

Extending this major road to the Mall of Louisiana Road on Bluebonnet will provide a new access point into the District. This connection also gives eastbound motorists an option to use the mall's loop road to access I-10.

Improvements to Dijon should support safe pedestrian and bicyclist access to Ward's Creek Trails, including a safe crossing to a future bridge to Burden Center.

1.2.2. Connect Picardy Avenue to the Mall of Louisiana Boulevard.

The Street Framework recommends the re-routing of Picardy Avenue between Midway Boulevard and Bluebonnet Boulevard. The re-routed segment aligns with Mall of Louisiana Boulevard to create a continuous street. This connection provides eastbound vehicles on Picardy an alternative route to and from I-10 on Mall of Louisiana Boulevard, while also adding a new access point into the District on Bluebonnet Boulevard.

The re-routing of Picardy will also improve safety for pedestrians on the Baton Rouge General Medical Center's campus by channeling high-speed through traffic to the periphery of the campus. The existing intersection of Picardy at Bluebonnet will be maintained as the gateway into the medical campus. A roundabout can also be added at the intersection of Picardy Avenue and Midway Boulevard to slow traffic speeds.

1.2.3. Connect Picardy Avenue and Perkins Road with a New Street

The proposed Picardy-Perkins Connector will extend the connectivity of the re-routing of Picardy even further. This project will provide a new street connection from Perkins Road to the Picardy Avenue/I-10 Interchange. This new street will start at Perkins Road between Wimbledon Subdivision and Perkins Rowe and then connect to Mall of Louisiana Boulevard.[2] The project has been funded by the City-Parish Green Light Plan. Construction is expected to begin in early 2016 and take 2-3 years to complete.

1.3 Manage Access On Arterials.

The primary purpose of urban arterials, like Essen Lane and Bluebonnet Boulevard, is to move regional traffic efficiently. High volumes of traffic found on these arterials often attract car-oriented businesses that depend on easy access for their customers. The result is a conflict of purpose between motorists trying to move through and those trying to turn into businesses, with an increased potential for vehicular accidents. In addition to slowing down traffic, the frequency of curb cuts also creates an unsafe environment for pedestrians. It's a no-win situation that is ultimately bad for business.

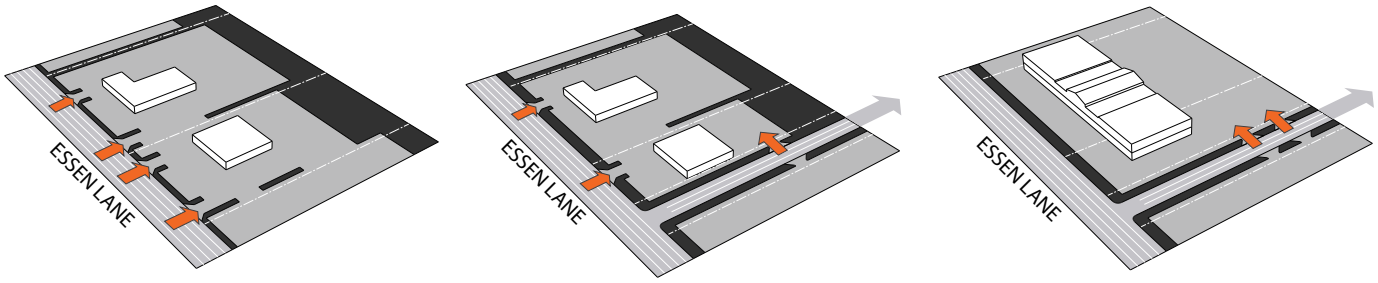
The Treatment Plan recommends phased implementation of an access management plan on Essen Lane and Bluebonnet Boulevard that includes the transfer of curb cuts to new east-west streets to be inserted in between Hennessy/Summa Avenue and Picardy Avenue (Figure 13).[3] While the utility of these local access streets is clear, the subdivision patterns on either side of Essen Lane, in particular, do not currently allow for them to be put in place. The BRHD is the perfect

1 EBRP Major Street Plan. https://brgov.com/dept/planning/pdf/majorstreetplan.pdf.

2 The Green Light Plan. Transportation and Street Improvements Program for East Baton Rouge City-Parish. 2015.

3 FuturEBR recommends the implementation of access management strategies on state routes such as Essen Lane in East Baton Rouge Parish. The Louisiana Department of Transportation and Development (LADOTD) has adopted policies that favor access management strategies as part of a larger Complete Streets Policy.

13 Proposed Access Management Strategy for Arterials (Essen Lane, Bluebonnet Boulevard and Perkins Road)



Existing Condition:
Two curb cuts per parcel

Step 1:
Adopt policy to reduce curb cuts for new development. Channel access to new side streets.

Step 2:
Enable sharing of retail parking or consolidate parcels into larger retail developments with side street access

Essen Lane Function | ACCESS | MOVEMENT

Essen Lane Function | ACCESS | MOVEMENT

Essen Lane Function | ACCESS | MOVEMENT

mechanism to facilitate discussions between multiple parties including the LADOTD, the City-Parish, utility companies, and local land and business owners towards the implementation of such transformative changes.

The outcome, ultimately, should be transformation of Essen Lane and Bluebonnet Boulevard into well-designed gateway corridors reflecting the excellence of the healthcare anchors that share the District. Properly designed and executed, the strategy could also serve as a model for other arterials in the District such as Perkins Road and (future) Midway Boulevard.

1.4 Improve Unsafe Intersections.

1.4.1. Improve the Intersection of Kenilworth Parkway and Perkins Road.

Kenilworth Parkway is a residential boulevard with multi-use pathways that currently terminates at Perkins Road. Motorists desiring access to the District turn right at this intersection and form a long queue to make an immediate left onto One Perkins Place Drive. This congested intersection is one of the most dangerous in Baton Rouge for pedestrians, bicyclists, and motorists.

The EBRP Major Street Plan shows Kenilworth Parkway extending northward behind O'Donovan Drive to reach Essen Lane, cutting through the Burden Museum and Gardens. While addressing the problematic intersection, this alignment is detrimental for the outdoor museum, with potential negative impacts to adjoining neighborhoods. The BRHD Street Framework Plan includes an alternative solution whereby Kenilworth Parkway and its multi-use pathways are connected directly to O'Donovan or Dijon Drive with a new railroad underpass.[4] This alignment enables safe vehicular and pedestrian / bicycle connections between the Kenilworth subdivision, Pennington Biomedical Research Center, Perkins Road Community Park, and the Health District and improves flow on Perkins Road at this location.

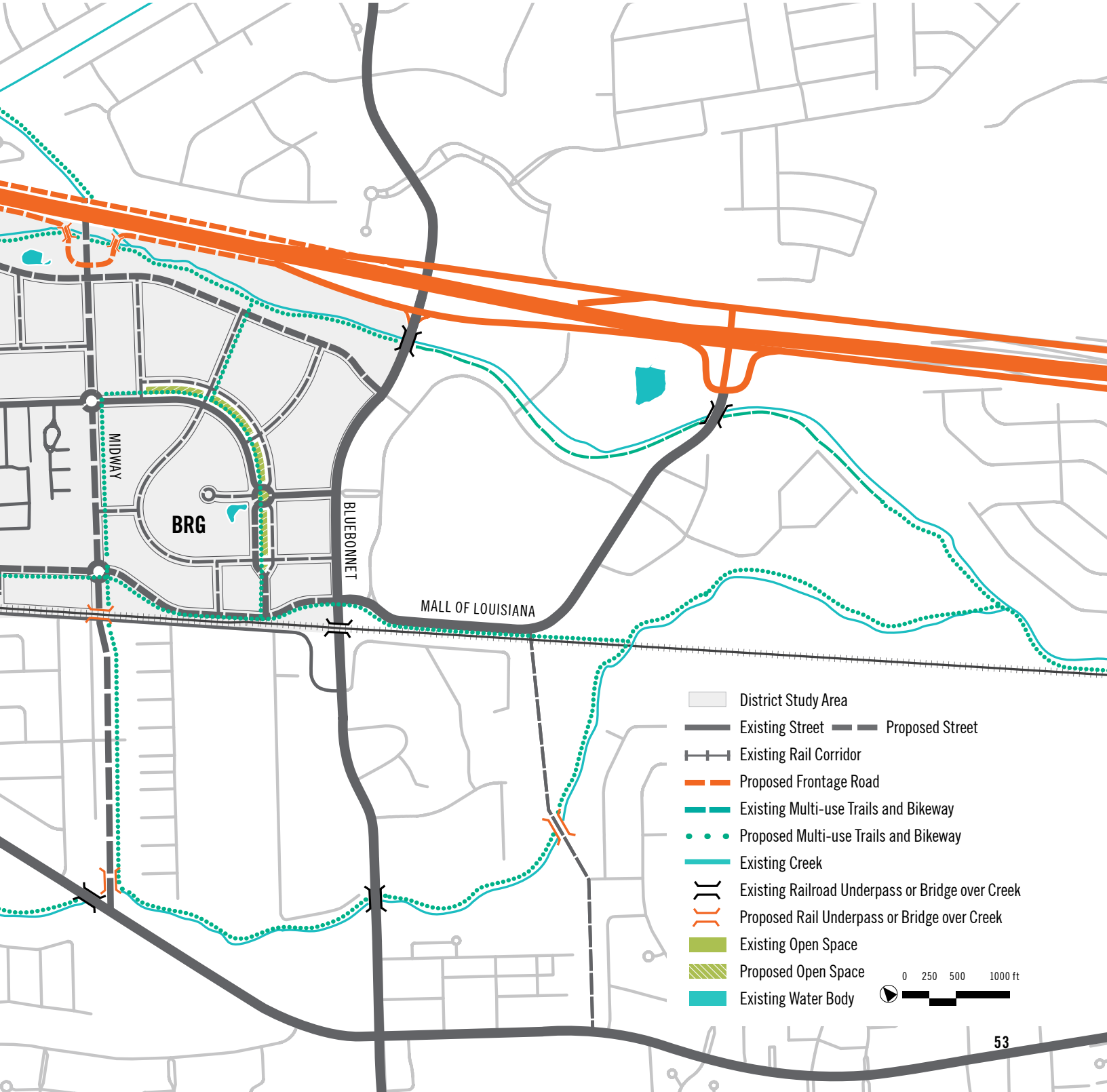
4 The intent is to have one railroad underpass at this location, either at O'Donovan Drive or at the current location of the at-grade crossing with linkage to Dijon Drive.

1.5 Add Rail Crossings.

The Street Framework Plan has identified the high-level feasibility of three below-grade crossings of the KCS railroad: at O'Donovan or Dijon Drive (as a replacement for the existing at-grade crossing), at Brittany Drive, and at Midway Boulevard. While costly to implement, access options not encumbered by rail traffic are critical for improved access, growth potential, and long-term resilience.

Converting the existing at-grade rail crossing at Essen Lane to an above- or below-grade crossing is technically possible but not recommended. Constructing such an over- or under pass would have significant traffic impacts across the Baton Rouge area. Taking Essen Lane above or below the railroad would also permanently limit access to adjacent built-up parcels, which may experience construction impacts. A rail underpass or overpass on Essen Lane, in short, is expected to be more expensive, time-consuming, and disruptive than the alternatives identified in the Street Framework Plan.

The Health District will be the hub of a well-connected and efficient transportation network that supports the daily operations of the District and serves the region.


MIDWAY
BRG
BLUEBONNET
MALL OF LOUISIANA
District Study Area
Existing Street
Proposed Street
Existing Rail Corridor
Proposed Frontage Road
Existing Multi-use Trails and Bikeway
Proposed Multi-use Trails and Bikeway
Existing Creek
Existing Railroad Underpass or Bridge over Creek
Proposed Rail Underpass or Bridge over Creek
Existing Open Space
Proposed Open Space
Existing Water Body
0 250 500 1000 ft

THIS IS THE FUTURE OF THE BATON ROUGE HEALTH DISTRICT

A inviting place to live, work, and explore.


THE RIVER restaurant
5207
Sports

Rx PRESCRIPTION

Safety and ease of movement for those who drive, bike, and walk is a necessary first step for the creation of a sense of place.

2. Enable people to walk, bike, and take transit.

2.1 Adopt District Street Design Guidelines.
2.2 Implement bicycle and car share programs.
2.3 Enhance transit options within District.
2.4 Build a multi-modal transit center.

Urban design research and best practices have identified five D's that contribute to walkability:[1]

1. **Design** has to do with the layout of the street grid and configuration of street right-of-ways. The goal is to create a dense network of connected streets that are designed to provide equal accommodation to all users: motorists, pedestrians, and bicyclists.
2. **Diversity** refers to the mix of land uses. Mixing uses can help ensure streets remain active throughout the day which can also boost the creation and perception of a safe pedestrian environment.
3. **Density** deals with the clustering of activities or other points of interest within a given area. These elements improve the pedestrian experience and can decrease the perceived walking time between destinations.
4. **Distance** refers to the proximity to transit. Everyone who takes transit is also a pedestrian. Transit stops should be located in active centers of development where the greatest numbers of destinations are within a 5-10 minute (1/4-1/2 mile) walk.
5. **Demand management** deals with controlling the amount and price of parking provided. The goal is to minimize the land needed to support parking which could otherwise be used to create more densely developed areas that are more walkable.

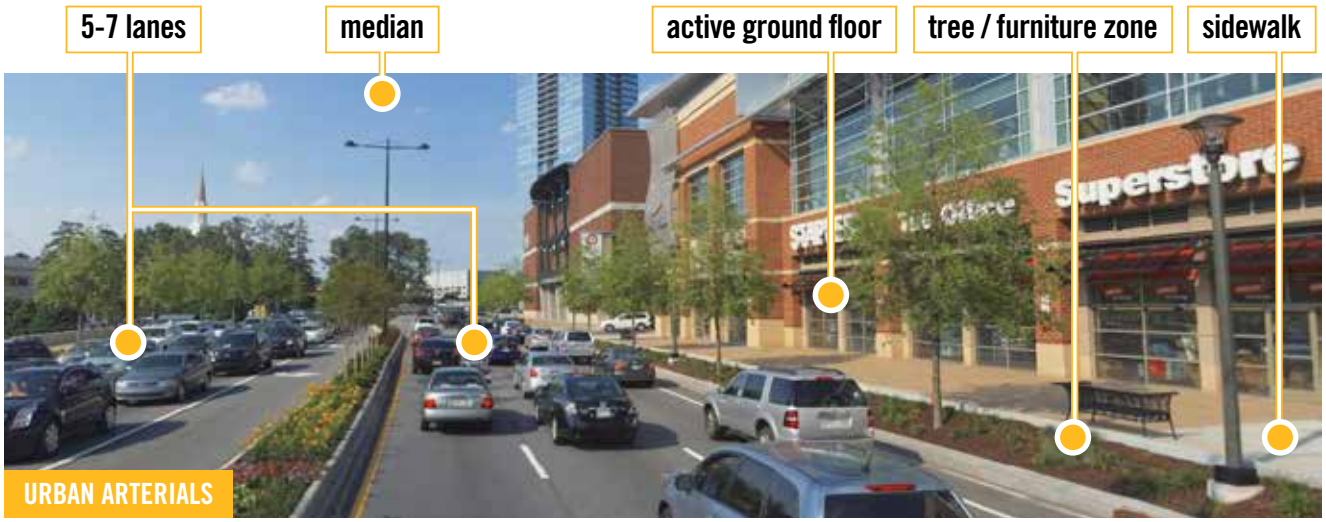
Every street should be designed with these elements and all potential users in mind to the greatest extent practical. All users should be able to have a safe and comfortable experience on all streets. A key means to achieve this goal is to design for appropriate vehicle speeds, recognizing that many of the internal trips of the District do not need to move quickly and that street design is the best means to manage this. Designs should not impair emergency vehicles from moving to, from, and through the Health District. At the same time they should not allow high-speed travel that puts pedestrians and bicyclists at risk and limits the District's ability to absorb a large share of its travel demand through walking, bicycling, and transit use.

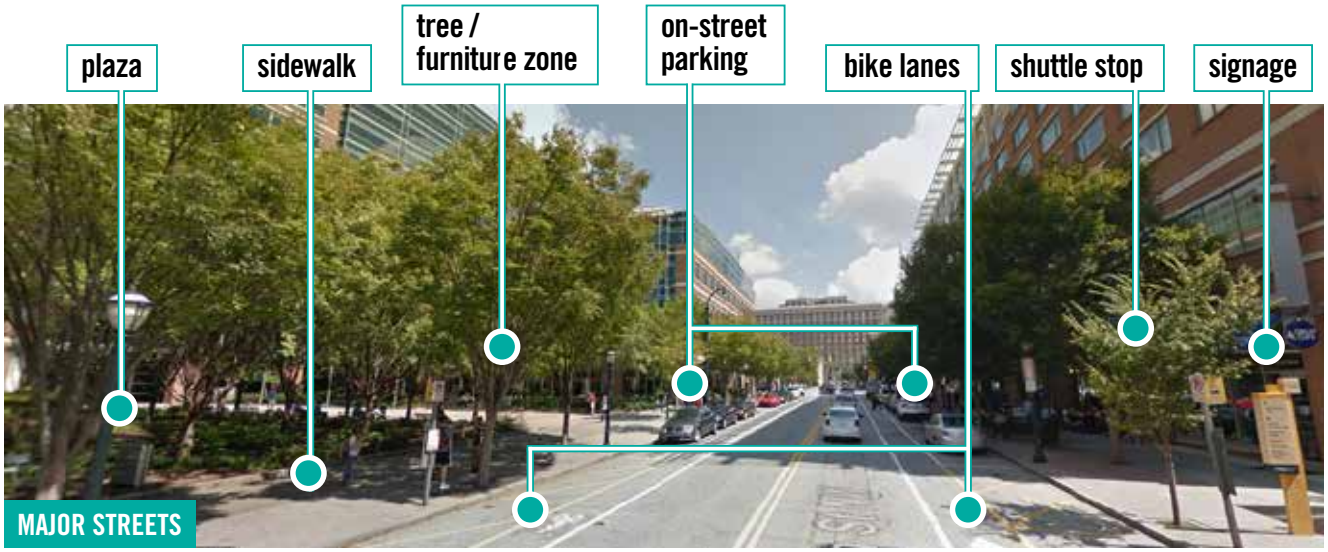
2.1 Adopt District Street Design Guidelines.

A street network organized around modal priorities for individual streets should include a typology that identifies key design factors to be applied to existing and future streets within the Health District. The recommendations

1 Cervero, R., and K. Kockelman. Travel Demand and the 3Ds: Density, Diversity, and Design. Transportation Research Part D: Transport and Environment, Vol. 2, 1997, pp. 199–219.

14 Design Elements of Proposed BRHD Street Typologies





described here are not intended to be prescriptive, but rather identify the different treatments that are important on different street types to ensure a balanced system for the Health District.

The Street Design Guidelines, outlined below, should embrace a Complete Streets approach that includes the following design materials, as appropriate, to ensure safe co-existence of private vehicles, buses, pedestrians, and bicyclists. The Health District should work with City officials to ensure implementation.

Pedestrian Zone

A comfortable and safe walking environment is much more than a sidewalk: it is ample clear space and protection from moving traffic. Establishing a buffer zone that includes shade trees and street furniture such as wayfinding signage, benches, or trash receptacles between the edge of the curb and the sidewalk will accomplish this.

On-Street Parking

On-street parking is key to the success of street-level businesses located on local and major streets. Parking also creates an added buffer from moving traffic for pedestrians.

Bicycle Lanes

Bicycle lanes placed on priority bike-corridors can add comfort and safety from adjacent parked vehicles. Bicycle lanes connected to regional trails support active commutes.

Travel Lanes

The number and width of travel lanes depends on the function of the street and the type of vehicles using it. On streets not designated for high speeds, narrower lane widths (10 feet or less) have been shown to improve pedestrian safety by reducing speeds of travel.

Medians

On larger streets, medians are an important means of access management and provide pedestrian refuge at intersections. Figure 14 on page 57 illustrates how these elements can be used to compose beautiful, functional streets in the Health District.

2.2 Implement bicycle and car share programs.

Bicycle sharing (or bikeshare) has grown rapidly in the United States in recent years, with most major cities launching systems and many others planning for implementation in the near future. Bikeshare programs are also being added to institutional or corporate campus settings to enhance mobility. Both are instructive models for the Health District and, when combined with the proposed trail system, make bicycling an attractive transportation alternative.

BIKE AND CAR SHARING: HOW IT WORKS

Bicycle and car sharing programs are set up to provide individual mobility options to the general public at a cost significantly lower than the cost of ownership. These programs typically require a membership subscription, in addition to periodic charges for use of a shared fleet of bicycles or vehicles. In addition to increasing mobility, bicycle and car sharing also help remove cars from the road and reduce parking demand in a given area.

Bikeshare

With most systems, bicycles are stored at fixed stations located on sidewalks or other designated areas near commercial or residential developments. By simply swiping a credit card or membership card, users can pay by the hour, day, month or purchase an annual subscription to rent the bikes. Bicycles can be returned to any of the stations following use. Smartphone apps and web portals enable users to preview the availability of bicycles at stations or docks for returns.

Carshare

Like bikeshare, carshare systems allow members to rent a car on a short-term (hourly or daily) basis, charging them a set fee per time period or mileage. Cars are stored at designated parking spots throughout a geographic area and reserved in advance or on the spot with the use of a smartphone app. Users gain access to their selected vehicles using their membership card. The return location depends on the program: some require users to return cars to the same location (ZipCar), while others allow users to park at any legal parking spot within a defined carshare district (Car2Go). Best practices include use of compact, and low or zero emission vehicles to further reduce environmental impact.

For further information, see:

"Bikesharing." Transportation Sustainability Research Center, University of California at Berkeley. http://tsrc.berkeley.edu/bikesharing.

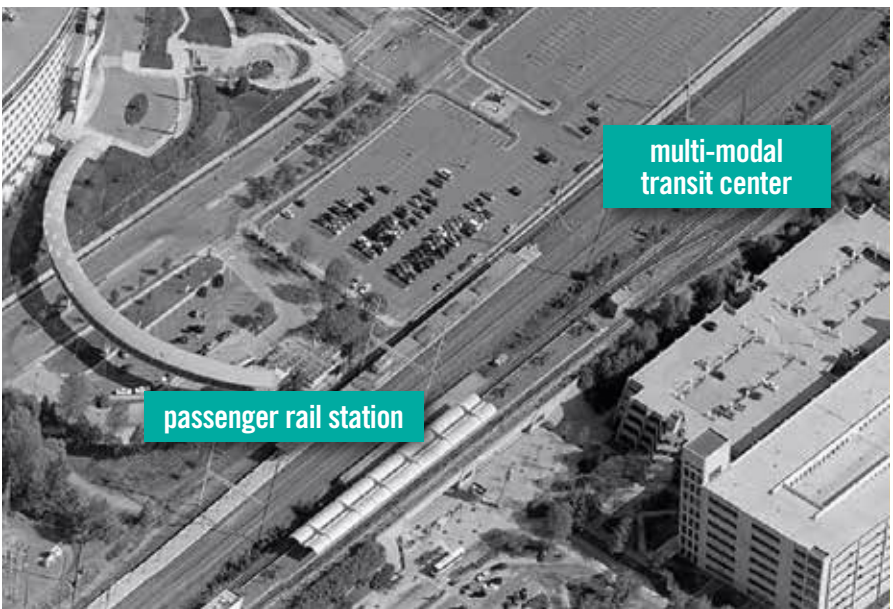
"Carsharing." Transportation Sustainability Research Center, University of California at Berkeley. http://tsrc.berkeley.edu/carsharing.

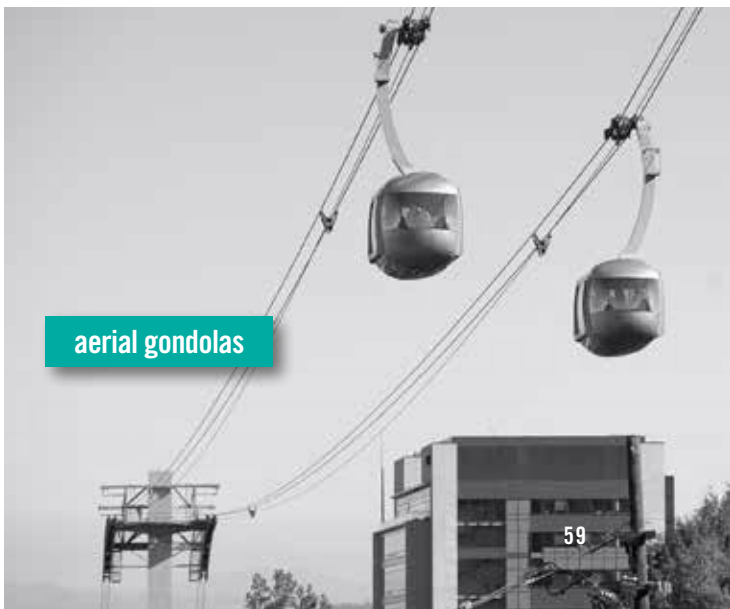

carshare programs


sponsored bikeshare


LMA Shuttle
district shuttles / circulators


bus / shuttle shelter
Plan
#choicesforgirls
interactive info panels


multi-modal transit center
passenger rail station


aerial gondolas

Baton Rouge has already taken initial steps towards bikeshare implementation. In early 2015, the City-Parish was awarded technical assistance from the Environmental Protection Agency (EPA) through their Building Blocks for Sustainable Communities Program to advance a strategy for developing a downtown bikeshare program.[2] The BRHD has an opportunity to partner with the City-Parish, or implement its own district-wide system to give users easy access to bikes for practical or recreational uses.

In addition to bikeshare, the car sharing industry has also experienced tremendous growth over the past decade.[3] A carshare system in the Baton Rouge Health District, where parking is often difficult and time-consuming to find, would allow people to take public transit to the District and then rent a car as needed for short trips within, or to destinations outside of the District. In Buffalo, New York, the Buffalo Niagara Medical Campus (BNMC) has partnered with a local nonprofit carshare operator to locate several vehicles at the medical district to provide added mobility options to employees and visitors for daytime appointments, meals, errands, and meetings.[4]

A similar program at the BRHD, coupled with other shared and alternative mobility options, would create a more accessible, navigable and environmentally-friendly District. With major national car rental companies now offering more carsharing and hourly rental services, the BRHD has numerous options for exploring these potential partnerships.

2.3 Enhance transit options within District.

Although options such as bicycling and walking can reduce the need for making short trips in vehicles, transit service is an important strategic element to a well-connected, vibrant healthcare center. The District is a place of healing and convalescence, and not all patients, visitors, and employees may be inclined or physically able to cover longer distances on foot or by bicycle. The Health District, supported by the hospitals as well as CATS, should fund a local shuttle to provide circulator service within the District. Figure 16 illustrates the proposed circulation route, which provides access to existing and planned healthcare and research anchors without getting caught in arterial traffic congestion.

The Baton Rouge Area Foundation also continues to investigate additional transit enhancements, including an aerial gondola system. Aerial gondolas use a series of detachable cars propelled across elevated cables to transport passengers short or long distances, above vehicular traffic. System stations, where the gondola cars are loaded and unloaded, may be free-standing structures, or they may be integrated into existing buildings or even parking garages. Numerous cities across the U.S. and around the world have integrated some form of gondolas as public transit systems, including Roosevelt Island in New York, Portland, Oregon, Rio de Janeiro, Brazil, and Medellín, Columbia.[5]

2.4 Build a multi-modal transit center.

Potential regional connections, such as passenger rail service to New Orleans as proposed on the adjacent rail corridor, could further enhance the District's appeal as a destination. Although the service proposals are still highly conceptual as of 2015, they have included a station in the BRHD on the current Kansas City Southern corridor.

The planning process for the Health District considered three principal alternatives for location of a station, identifying opportunities and challenges for each (Figure 15). The exact location of future locations will be subject to detailed planning and engineering study. Recommended selection criteria should include:

- ease of vehicular access
- walking distances to major destinations using existing street and path networks
- availability of space for parking
- availability of land for transit-oriented development; and
- potential for integration with other forms of transit including bus, a future District shuttle and proposed tram service.

The ease with which the station can be used for potential evacuation of the District should also be considered.

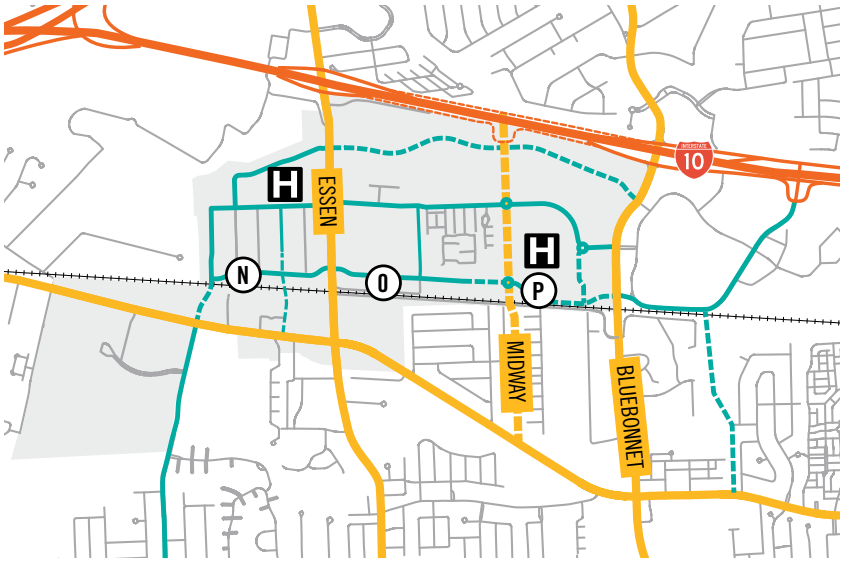
2 Riegel, S. "DDD snares grant to study bikeshare program." Greater Baton Rouge Business Report. January 30, 2015. http://www.businessreport.com/article/ddd-snares-grant-study-bikeshare-program

3 As of January 2014, twenty-four U.S. carsharing programs included over 1.2 million members sharing 17,179 vehicles. See "Carsharing," Transportation Sustainability Research Center, University of California at Berkeley. http://tsrc.berkeley.edu/carsharing.

4 "Buffalo CarShare Opens Up Transportation Options." July 3, 2012. Buffalo Niagara Medical Campus. http://www.bnmc.org/bike-share-carshare-opens-up-transportation-options/.

5 Swallow, E. "Can Gondolas Fix Urban Transportation Woes?" http://mashable.com/2013/07/03/urban-gondolas/#hWQLQ1mK8uqf

15 BRHD Multi-modal Passenger Terminal Location Options

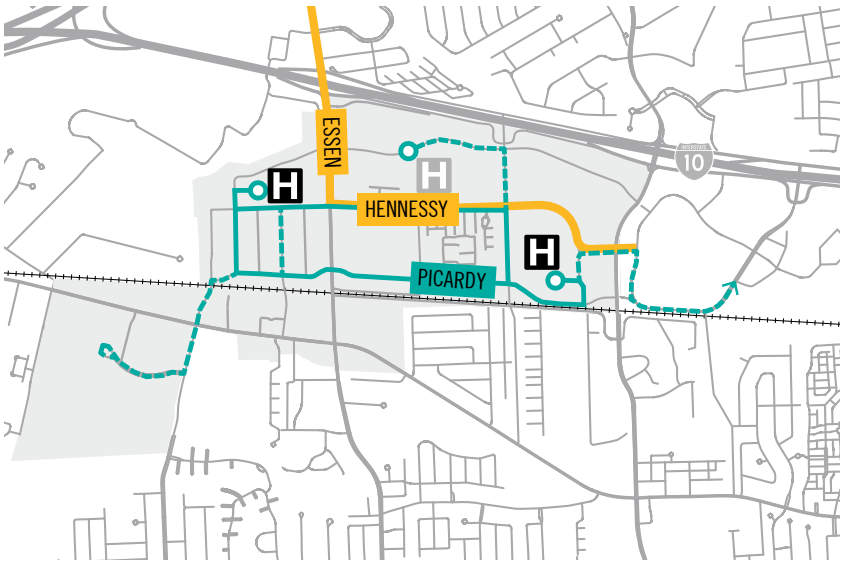


Transit Station Location

N	West of Essen Lane
O	East of Essen Lane
P	East of Midway Blvd

Added benefit: generally, shifting 10% of vehicle users on congested roadways to walking, biking, or transit can restore free-flow movement of traffic.

16 Proposed Circulator Shuttle Route



- Current CATS Route
- Proposed Core Circulator Route
- Auxiliary Service
- Existing Hospitals
- Planned Hospital

THIS IS THE FUTURE OF THE BATON ROUGE HEALTH DISTRICT

A place where a healthy lunch is a pleasant walk away.


CRUMBS
BAKE . SHOP

Rx PRESCRIPTION

There are significant opportunities for linking Health District destinations to existing open space assets.

3. Connect to parks and open spaces.

3.1 Adopt a Landscape Framework Plan.
3.2 Connect to the Burden Campus.
3.3 Create signature parks.

Studies show that, on average, Americans spend about 93% of their time in indoor environments[1] where environmental pollutants can be concentrated between two to five times the levels found outdoors.[2] Aside from the well-known benefits of fresh air, research also shows significant psychological benefits of physical and visual access to natural environments.[3] Natural open spaces also provide opportunities for active recreation: doctors around the U.S. are using "park prescriptions" to encourage their patients, especially children, to spend time exercising outdoors.[4]

Medical Districts have not traditionally been recognized for their open space assets, but this is changing with the shift from "medical" to "health." A growing number of hospitals are integrating walking trails, healing gardens, and pocket parks onto their campuses for the benefit of patients, employees, and visitors. Our Lady of the Lake Regional Medical Center, Baton Rouge General Medical Center, and Woman's Hospital all have recently invested in such facilities.[5] The Health District collaboration enables stakeholders to plan for permanent green spaces as part of the District's growth program.

3.1 Adopt a Landscape Framework Plan.

A Landscape Framework Plan is a long-term vision for natural open spaces. It includes the network of multi-use trails and sidewalks that connect these spaces to pedestrian origins such as hospital entrances or neighborhood streets.

The BRHD Landscape Framework Plan, shown in Figure 17, builds on best practices in urban open space planning and the foundation provided by BREC's 10-year strategic plan to propose a network of nature reserves, District parks, and recreational trails for the Health District. The illustrated version of the Framework Plan (see page 52) shows how access to the proposed landscape elements can be enhanced by building a well-connected local street network.

3.2 Connect to the Burden Campus.

The BRHD should build ongoing partnerships with BREC and Burden Museum and Gardens. Both entities

1 Klepeis et al. 2001. "The National Human Activity Pattern Survey (NHAPS): a resource for assessing exposure to environmental pollutants." Journal of Exposure Analysis and Environmental Epidemiology (2001) 11, 231–252.

2 "Indoor Air." EPA website. http://cfpub.epa.gov/roe/chapter/air/indoorair.cfm.

3 Russel, Roly; et al. 2013. "Humans and Nature: How Knowing and Experiencing Nature Affect Well-being." Annual Review of Environment and Resources, Vol. 38.

4 "Park Prescriptions. National Recreation and Park Association (NRPA). http://www.nrpa.org/Grants-and-Partners/Recreation-and-Health/Park-Prescriptions/.

5 The new Heart and Vascular Tower at Our Lady of the Lake Regional Medical Center includes an outdoor healing garden accessed from multiple locations including the new food court. Baton Rouge General recently added a one-mile trail loop around its Bluebonnet campus with planned connections to future phases of Ward's Creek trail north of the campus.

17 BRHD Landscape Framework Plan: The Network of Existing and Proposed Open Spaces and Connecting Corridors

THIS IS THE FUTURE OF THE BATON ROUGE HEALTH DISTRICT

A place that attracts new students, physicians, and patients to be part of the community.

are currently involved in individual conversations with the District institutions: expanding these discussions to the District scale is key for building a connected system. The Health District has taken the first step through its engagement of BREC and Burden Center leadership in the District visioning process.

The BRHD can play an active role in the planning, funding/fundraising, programming, marketing, and maintenance of open-space amenities owned by BREC and the Burden Museum and Gardens to ensure that District users receive the utmost benefit from investments made by these organizations. The BRHD can significantly expand its open-space network in the near term by building a few connections to existing open-space amenities such as the Burden Museum and Gardens.

Today, a trip from Our Lady of the Lake Regional Medical Center or the Mary Bird Perkins Center to the trailhead behind the Burden Conference Center takes about 15-20 minutes on foot, including a 6-minute dangerous walk alongside Essen Lane. A bridge over Ward's Creek, if met by a connector trail on the Burden side, would take potential users from a hospital setting into the woods in under three minutes. The health benefits of such a connection for employees with high-stress jobs could be significant.[6] The pedestrian bridge, coupled with the trail extension from Bluebonnet, will provide a safe access route to the Burden Museum and Gardens for campuses and neighborhoods along the trail edge.

3.3 Create signature parks.

Parks provide opportunities for recreation and generate demand for residential development in their vicinity. These spaces should be designed to encourage pedestrian movement and include critical infrastructure elements within the District. Each contributes to the unique character of the District while enhancing the quality of life of workers, residents, students, and visitors. These spaces provide opportunities for gatherings, collaboration, and reflection.

These new spaces are permanent: they are held collectively by the District and their use is not restricted. They encourage freedom of movement, allowing for alternative forms of transportation, establishing commerce, and promoting recreation. Guiding principles for design include:

- using appropriate native and naturalized plant material to reduce the need for irrigation and excessive maintenance;
- prioritizing lawn in areas for larger gatherings and recreational opportunities; and,
- implementing art at focal points within public and private spaces.

6 Ulrich, Roger; et al. 2004. "Role of the Physical Environment in the Hospital of the 21st Century." The Center for Health Design. https://www.healthdesign.org/chd/research/role-physical-environment-hospital-21st-century.

Rx PRESCRIPTION

Each building in the District should contribute to the public realm—the streets, sidewalks, courtyards, and parks—that together create a sense of place.

4. Promote balanced, diverse, and orderly development

4.1 Add a Mixed-Use Institutional Zoning District.
4.2 Promote parcel consolidation.

Community development is a process that can produce rich results when it unfolds slowly over time. The BRHD vision that is described and illustrated in this document cannot be realized under the current zoning regime. Changes to zoning are recommended to ensure that each building contributes to the implementation of the Health District vision.

4.1 Add a Mixed-Use Institutional Zoning District.

The BRHD should work with the City-Parish to create a customized Urban Design Level that enables flexible growth of healthcare, research and academic campuses within the BRHD while creating a unified public realm.[1] This would involve testing existing Supplementary Standards to assess compatibility with proposed and planned institutional projects, and in particular with healthcare facilities, which are typically designed from the inside out in response to complex circulation and adjacency requirements.

With the right type of zoning in place, the BRHD can take on an advocacy role to support and coordinate new development in the District. In the future, the BRHD can also seek enabling legislation to write and administer its own zoning regulations and design guidelines within its boundaries.

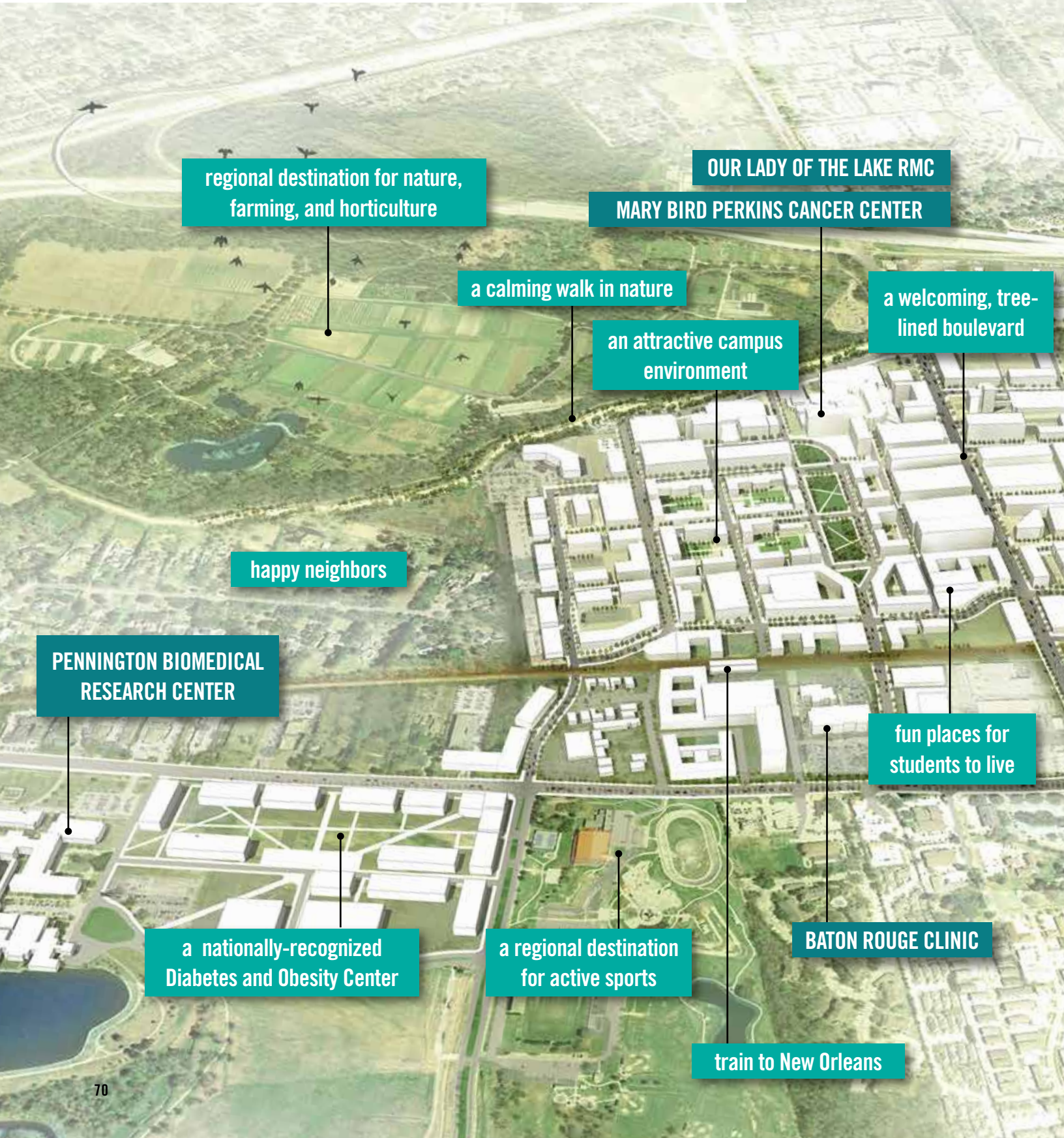
4.2 Promote parcel consolidation.

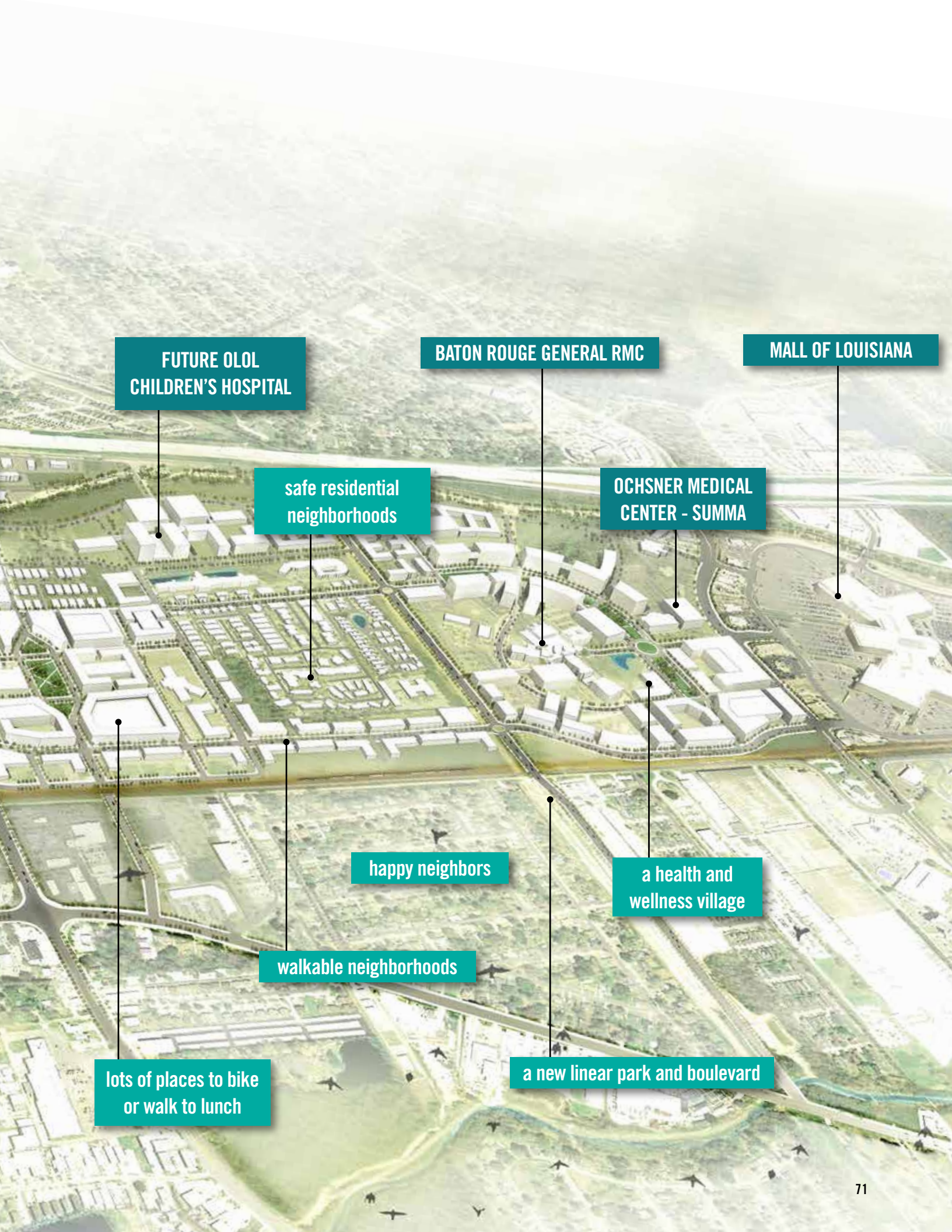
The BRHD should work with the City-Parish and individual landowners to transform areas with irregular and unbuildable subdivisions into regular size lots that can accommodate the types of mixed-use office and residential developments that are envisioned for the Health District. This is especially critical for the area without local streets (or the mega-block) bound by Essen, Summa, Mancuso and Picardy, which contributes to traffic congestion on Essen Lane due to its lack of alternative access points.

1 Urban Design Levels are overlay zoning regulations that are currently being developed by the City-Parish to implement the urban design recommendations of FuturEBR. They provide supplemental standards for five development types: Downtown, Urban, Walkable, Suburban, and Rural.

THIS IS THE FUTURE OF THE BATON ROUGE HEALTH DISTRICT

A place that puts Baton Rouge on the national map for healthcare, health education, and research.




FUTURE OLOL CHILDREN'S HOSPITAL
BATON ROUGE GENERAL RMC
MALL OF LOUISIANA
safe residential neighborhoods
OCHSNER MEDICAL CENTER - SUMMA
happy neighbors
a health and wellness village
walkable neighborhoods
lots of places to bike or walk to lunch
a new linear park and boulevard

HEALTH EDUCATION + RESEARCH

The Baton Rouge Health District will be a center for advanced education, research and clinical practice in healthcare.

HEALTH EDUCATION + RESEARCH

DIAGNOSIS

CHIEF COMPLAINT

Baton Rouge Has a Limited Pipeline for Talent to Advance Healthcare Delivery and Research

KEY SYMPTOMS OBSERVED

1. Restrictions to the Growth of Medical Education and Training
2. Opportunity to Expand Collaborations in Research and Education
3. Untapped Potential for Clinical Research Trials and Industry Connections

VITAL SIGNS

Only 12% Of LA's Medical Residents Receive Training in Baton Rouge

50% Fewer Clinical Trials than Peer Cities

ASSESSMENT

The Health District's clinical, educational, and research assets are siloed, limiting opportunities for growth and innovation.

TREATMENT PLAN

PRIORITY INTERVENTIONS

Harness local assets to establish a unique four-year medical school in Baton Rouge.

PRESCRIPTIONS

1. Engage partners in medical education expansion in Baton Rouge.
2. Build research and education networks to support innovation and workforce growth.
3. Expand clinical trials in Baton Rouge.

FOLLOW-UP TESTS (ANNUAL CHECK UP)

Number of Students and Researchers in the Health District

Number of GME Spots in Baton Rouge

Number of Industry-Sponsored Clinical Trials

EXPECTED OUTCOME

Maximize Health Education and Research Assets to Advance Clinical Practice and Grow Healthcare Economy

HEALTH EDUCATION + RESEARCH

Diagnosis

CHIEF COMPLAINT

Baton Rouge Has a Limited Pipeline for Talent to Advance Healthcare Delivery and Research

The limited talent pipeline to advance healthcare delivery and research is an outcome of the following key symptoms observed in the Health District:

1. Restrictions to the Growth of Medical Education and Training
2. Opportunity to Expand Collaborations in Research and Education
3. Untapped Potential for Clinical Research Trials and Industry Connections

Photo: Emergency Medicine Residency Program in Baton Rouge. LSUHSC Medical Education and Innovation Center, Simulation Lab. LSUHSC.

KEY SYMPTOMS OBSERVED

The lack of a medical school will limit the pace and depth of transformation and advancement of healthcare in Baton Rouge.

1. Restrictions to the Growth of Medical Education and Training

Role of Medical Education and Training in Healthcare Excellence

Virtually all of the renowned medical districts and centers of healthcare excellence in the United States have a significant teaching component. The most prominent model is the Academic Health Center (AHC). While comprising only two percent of the nation's healthcare systems, AHCs have led the advancement of biomedical science and clinical care in the US.[1]

Today, the sustainability of the AHC model is being questioned as institutions across the U.S. struggle financially against the rising cost of medical education and research.[2] The fundamental idea of using education and research to advance healthcare, however, remains as valid as ever.

AHCs possess a culture of continuous learning and advancement that is brought forth by the presence of faculty, students, and medical residents in the hallways of their teaching hospitals. As the healthcare industry transforms to address changing demographics, regulations, and business models, the ability to develop, test, and adapt new ideas in clinical settings will become even more critical for institutional success and survival.

Medical Education in Louisiana

Louisiana has three well-established AHCs with medical schools that offer MD programs: Tulane University Health Sciences Center and Louisiana State University Health Sciences Centers in New Orleans (LSUHSC-NO) and Shreveport (LSUHSC-Shreveport). Ochsner Health System also supports undergraduate medical education in partnership with University of Queensland in Brisbane, Australia.

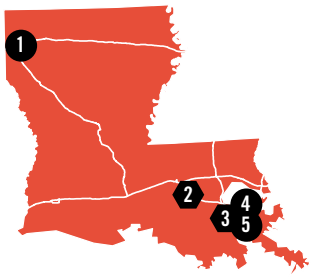
Louisiana is a significant destination for medical education: in 2014, the state ranked 10th in the number of students enrolled in medical school per 100,000 Louisiana residents[3] (Figure 20). Within Louisiana, New Orleans is the center of medical education and training, with three quarters of the state's medical students (Figure 18) and more than half of its medical residents located in the metro area (see Figure 23 on page 81). The health sciences campuses for LSU and Tulane are located in close proximity to each other in Downtown New Orleans and within walking distance of the new $1.1 billion University Medical Center, which will host both LSU Health Sciences Center (LSUHSC) and Tulane University School of Medicine (TUSOM) clinical programs. New Orleans is also home to the large and independent GME program sponsored by Ochsner Medical Center (Figure 22). A fifth of the state's medical graduates are educated at LSUHSC-Shreveport.

1 The Association of American Health Centers (AAHC) defines an AHC as being comprised of an allopathic or osteopathic medical school, one or more other health profession schools or programs (such as allied health, dentistry, graduate studies, nursing, pharmacy, public health, veterinary medicine), and one or more owned or affiliated teaching hospitals or health systems. There are more than one hundred AHCs in the US.

2 "Consolidation could be next for academic medical centers." Modern Healthcare. July 5, 2014. http://www.modernhealthcare.com/article/20140705/MAGAZINE/307059964.

3 AAMC Fact Table 1.

18 Medical Education in Louisiana in 2014



1. LSUHSC School of Medicine, Shreveport (est 1969)
2. LSUHSC Baton Rouge Branch Campus* (est 2014)
3. Ochsner Clinical School (OCS) New Orleans* (est 2009) (first two years at University of Queensland, Australia)
4. LSUHSC School of Medicine, New Orleans (est 1931)
5. Tulane University School of Medicine (est 1834)

** third and fourth-year students only at these locations*

	APPLICANTS		*ENROLLEES*	*MATRICULANTS*	
	number	*% Louisiana residents*	*number (all 4 years)*	*number*	*% Louisiana residents*
LSUHSC, Shreveport	1,181	52.3 %	481	123	97.6%
Tulane SOM	9,531	4.4 %	819	198	12.1%
LSUHSC, New Orleans**	2,515	28.5 %	807	194	89.7%
Ochsner Clinical School	*not in LA*	----	98***	24	*not available*
TOTAL	**13,227**	**13.3%**	**2,205**	**539**	**61.8%**

** numbers include students receiving 3rd and 4th year training at Baton Rouge branch campus.
*** Excludes 188 students enrolled in first two years of medical school in Australia in 2014.

Source: Applicant and matriculant data from AAMC Fact Table 26 (2014). Enrollment data from Louisiana Medical Education Commission. 2014 Annual Report. OCS information from http://news.ochsner.org/news-releases/second-class-of-ochsner-clinical-school-graduates-participate-in-match-day/

LOUISIANA RANKS 10TH
among all states in the number of students enrolled in medical school per 100,000 population

2,272
students enrolled in medical schools in Louisiana in 2014

39.7%
choose to work in Louisiana after residency
(U.S. median=38.7%)

Source: AAMC. 2013 State Physician Workforce Data Book.

UME vs GME - How Medical Education Works in the U.S.

In the United States, students typically enter medical school after completing an undergraduate degree with the required coursework.

The first four years of medical education are referred to as Undergraduate Medical Education (UME). UME is offered at two types of medical schools: allopathic (MD degree) and osteopathic (DO degree).

The education is typically divided between coursework (first two years) and training in a clinical setting such as a hospital (last two years).

A majority of MD and DO recipients apply to residency or fellowship programs to receive post-graduate training in their selected fields. Referred to as Graduate Medical Education (GME), post-graduate training is a requirement for physicians seeking to practice. GME is typically offered as a partnership between medical schools and affiliated hospitals that provide the clinical setting for training.

Impact of Medical Education and Training in Baton Rouge

Baton Rouge did not have a significant role in the education and training of physicians until the establishment of the acclaimed LSU internal medicine residency program at Earl K. Long Medical Center (EKL) in 1990.

Hurricane Katrina, which devastated the New Orleans area in 2005, changed the discussion around medical education in Baton Rouge. In the aftermath of Hurricane Katrina, all six schools of the LSU Health Sciences Center (LSUHSC) in New Orleans were temporarily hosted on the Pennington Biomedical Research Center campus.[4] The demonstrated capacity of Baton Rouge to host the schools and the population shifts in the area prompted conversations about a new LSU teaching hospital in Baton Rouge.[5] Since then, significant investments have been made to restore and boost LSUHSC's operations, including the construction of the new University Medical Center which opened in September 2015. While the state did not build a new teaching hospital for LSU in Baton Rouge, LSUHSC has shifted some of its clinical rotations to EKL, LSU clinics, and Our Lady of the Lake (OLOL) Regional Medical Center during the last decade in order to provide students access to a larger pool of patients.

In April 2013, EKL was closed as part of the statewide privatization of community hospitals and clinics. LSUHSC programs previously hosted at EKL were shifted to OLOL Regional Medical Center as part of a public-private partnership agreement. The partnership has enabled LSUHSC to shift more of its clinical rotations to Baton Rouge, including the opening of a branch campus for 3rd and 4th year students in medical school.[6] Tulane University School of Medicine (TUSOM) also opened a satellite campus in Baton Rouge in partnership with Baton Rouge General Medical Center.[7]

While fewer in number in comparison to New Orleans or Shreveport, medical faculty, students, and residents in Baton Rouge have made a significant impact. LSU's program in particular has played and continues to play a significant role in the delivery of healthcare to underserved and indigent populations within the City.[8] The partnerships between Baton Rouge hospitals and New Orleans medical schools have also brought new technologies and innovative practices to Baton Rouge. The LSU Medical Education and Innovation Center includes a state-of-the-art simulation lab, which allows medical students to practice surgery and other procedures with high-tech mannequins and simulators.[9] Meanwhile, Tulane School of Medicine's Leadership, Education, Advocacy, and Discovery (LEAD) Academy at Baton Rouge General's Mid-City campus has introduced many medical students to a potential career in health policy at the Louisiana State Capitol and state agencies.

The Case for Growth in Medical Education

Ongoing debate exists over whether the U.S. is headed into an era of dire physician shortage.[10] One thing, however, is certain: demographic and regulatory trends are colliding to increase the demand for healthcare, and in particular for Medicare-funded services. Our population is aging and living sicker lives with chronic diseases, while a greater number of insured patients are entering the healthcare marketplace as a result of the Patient Protection and Affordable Care Act signed into law in 2010.

In 2006, the Association of American Medical Colleges (AAMC) called for an expansion of U.S. medical school enrollment by 30 percent over 2002 levels by the year 2016 to meet future physician demand. This call prompted significant growth in enrollment levels across existing institutions and helped boost one of the most significant periods of medical school growth in U.S. history. While no allopathic medical schools (MD degree) were accredited between 1986 and 2005, 18 new medical schools were added between 2005 and 2012, bringing the total number of

4 Hollier, S. "The Impact of Hurricane Katrina on Louisiana State University Health Sciences Center New Orleans: Testimony for the United States Senate." The schools' more than 1,000 students, faculty and staff were housed in a ferry boat docked on the Mississippi River. The school was able to move back to its New Orleans campus nine months after the disaster.

5 "End Game: A Conversation about the Closing of Earl K. Long with Kevin Reed, MD." Baton Rouge Healthcare Journal. January / February 2013. http://www.healthcarejournalbr.com/the-journal/hjbr-contents-index/features/817-end-game.

6 GME numbers from Louisiana Medical Education Commission. 2014 Annual Report. See also "LSU-Lake Deal Will Train More Physicians." Louisiana Medical News, March 9 2010. Our Lady of the Lake Regional Medical Center also hosts the Baton Rouge branch campus of LSU Health New Orleans.

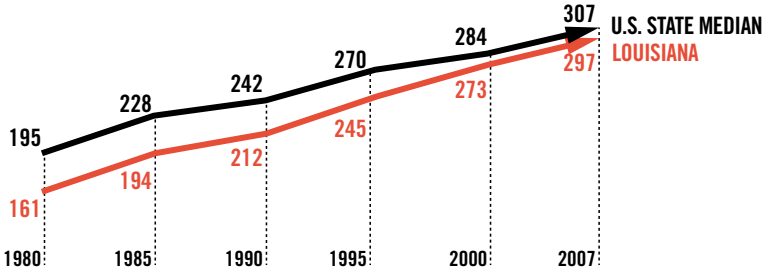
7 See page 82 for additional information on existing medical education programs in Baton Rouge.

8 "The Face of Many—Though Dr. George Karam Deflects Credit, He Has Touched Lives Across Louisiana through LSU's Residency Program at EKL." Baton Rouge Business Report, August 21, 2012. http://www.businessreport.com/article/the-face-of-many.

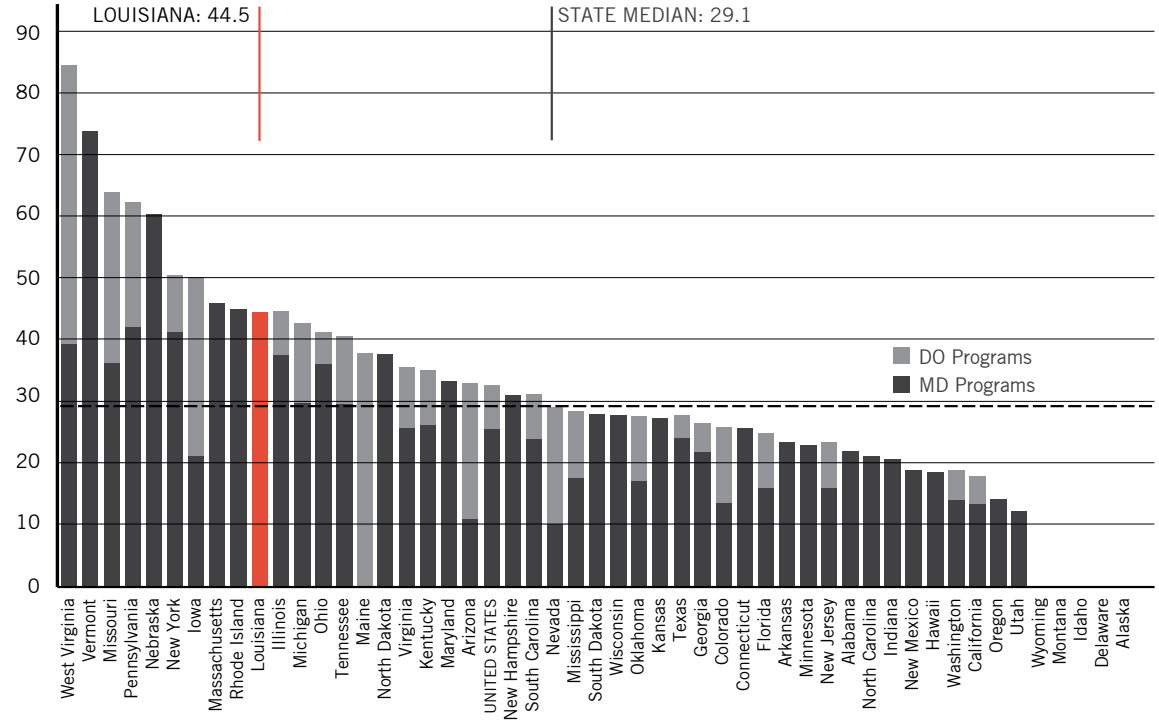
9 "OLOL, LSU Launch Education and Innovation Center." Baton Rouge Healthcare Journal. December 13, 2013. http://www.healthcarejournalbr.com/hjbr-enews/304-enews-for-december-13-2013/1279-olol-lsu-launch-education-and-innovation-center.

10 Advocates of healthcare reform suggest that the shortage may not materialize if the changes in healthcare delivery are implemented as proposed. See Gottlieb, Scott and Ezekiel J. Emanuel, "No, There Won't Be a Doctor Shortage," New York Times, December 4, 2013.

19 Louisiana Physician Supply per 100k Population, 1980-2007



20 Students Enrolled in Medical or Osteopathic School per 100K Residents



MD-granting institutions to 141.[11] The number and enrollments of osteopathic medical schools (DO degree) have also grown at an accelerated pace in the same period.[12] Louisiana medical schools have responded to the call by increasing enrollment steadily over the last decade, from 1,761 students in 2005 to 2,107 students in 2014.[13] In more recent projections, the AAMC has announced that the United States will have a shortage of between 40,700 to 94,800 physicians by the year 2025, even if measures are taken to increase

11 AAMC. 2012. "A Snapshot of the New and Developing Medical Schools in the U.S. and Canada." https://members.aamc.org/eweb/upload/A%20Snapshot%20of%20the%20New%20and%20Developing%20Medical%20Schools%20in%20the%20US%20and%20Canada.pdf.

12 American Osteopathic Association (AOC) Website."Growth in Osteopathic Medical Students." http://www.osteopathic.org/inside-aoa/about/aoa-annual-statistics/Pages/growth-in-osteopathic-medical-students.aspx. See also: Commission on Osteopathic College Accreditation. 2015. "New and Developing COMs and Campuses." http://www.osteopathic.org/inside-aoa/accreditation/predoctoral%20accreditation/Documents/new-and-developing-colleges-of-osteopathic-medicine-and-campuses.pdf.

13 AAMC Website. Fact Table 26. While disproportionate with the state's population, this rate of growth is comparable to nationwide expansion in medical education during the same period, and aligns favorably with AAMC-set goals to ensure adequate supply of physicians.

the efficiency of the workforce and reduce the prevalence of disease across the population.[14]

The expansion of medical education in Louisiana has contributed to an expansion in physician workforce: the state has increased its supply of physicians steadily during the last three decades, largely closing its gap with the U.S. median (Figure 20). However, the supply may need to grow more significantly as Louisiana faces its "silver tsunami": a 30% increase in the above-65 population in the next decade.[15] Further, evolving technology, new healthcare delivery models and the growing focus on disease prevention require physicians trained in new and innovative ways. Baton Rouge has unique assets that can be leveraged to create a new type of medical school that addresses this opportunity and demand. (See page 91 for details.)

The Case for Growth in Graduate Medical Education (GME)

Growth in medical school enrollment is only part of the answer: the AAMC has cited the lack of parallel growth in accredited GME programs required for physicians to practice as a significant barrier to the expansion of the U.S. physician workforce.[16]

The "GME bottleneck," as it is widely known, is caused by limits to federal funding that most GME programs depend heavily on. Federal legislation aimed at increasing GME funding has been pending approval since 2012, while the current administration has called for significant cuts to GME over the next decade.[17] By contrast, a recent report by the Institute of Medicine (IOM)—the health arm of the National Academy of Sciences—has called for a freeze of GME funding at its current levels, and a redistribution of funds to enable a greater focus on primary care and community-based training of physicians.[18] With the future of GME federal funding uncertain, institutions are going after state, foundation and private industry funding to continue their educational programs.

While Louisiana providers train a significant number of medical residents and fellows, funding remains a key challenge for program expansion. The Centers for Medicare and Medicaid Services (CMS) has currently capped GME payment to Louisiana providers at 1436 FTEs (full-time equivalent) residents. Figure 22 shows an adjusted distribution of the FTE caps by institution for the fiscal year ending in June 30, 2014.[19] BRHD anchors—Our Lady of the Lake Regional Medical Center, Baton Rouge General Regional Medical Center, and Woman's Hospital—have grown their contribution to training in the last decade. With its growing population and significant bed capacity, Baton Rouge has an opportunity to expand its role in GME in Louisiana (Figure 23).

Graduate medical education is a key factor in a state's ability to attract talented physicians. AAMC data show that 47.4% of U.S. physicians are practicing in states where they have been trained (GME) as opposed to the 38.7% who work in states where they have studied (UME).[20] Louisiana's UME retention rate of 39.7% is on par with the U.S. average, but lags behind most Southern states including Alabama (49.9%), Missisippi (54.4%), and Texas (59.4%). The same is true for GME retention: only 46.9% of physicians stay in Louisiana after their training, which is low compared to other southern states like Alabama (48.0%), Missisippi (50.3%), and Texas (57.9%). The state's one-to-one parity between the number of the medical school graduates to GME spots is one of the limiting factors for retention and recruitment (Figure 21).

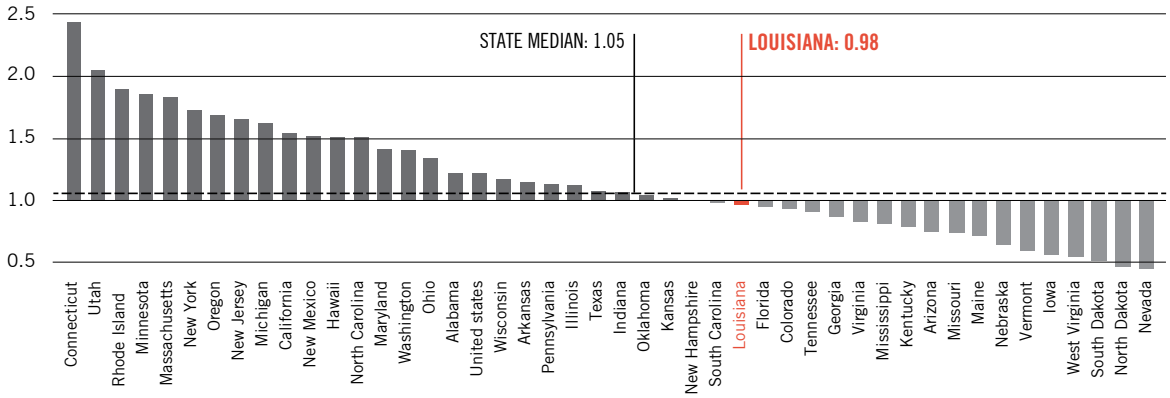
The Louisiana Medical Education Commission has called for an increase in GME slots in both primary and specialty care, as well as stipend increases to make the state's offerings more competitive to the nationwide pool of applicants.[21] No funding is currently allocated to GME growth in the state of Louisiana, but Baton Rouge could become a model for innovation in GME funding to support statewide retention of the best talent in medicine.

14 AAMC. 2015. "Physician Supply and Demand Through 2025: Key Findings."
15 Based on U.S. Administration on Aging (AoA) population projections for 2015 and 2025. http://www.aoa.acl.gov/Aging_Statistics/future_growth/future_growth.aspx.
16 GME funding has not increased since 1997. Health Affairs. "Graduate Medical Education." August 31, 2012. http://www.healthaffairs.org/healthpolicybriefs/brief.php?brief_id=75.

17 The bill is supported by powerful advocacy groups including the AAMC, American Medical Association (AMA) and the American Hospitals Association (AHA). See AAMC Website. "GME Funding: How to Fix the Doctor Shortage." https://www.aamc.org/newsroom/keyissues/physician_workforce/47342/gmefundingphyworkforce.html.
18 Institute of Medicine. 2014 "Graduate Medical Education that Meets the Nations' Needs." Report.
19 CMS does not have a cap for oral surgery or dentistry programs. Our Lady of the Lake Regional Medical Center has twenty additional residents per month in these two programs.

20 AAMC. "Key findings: Retention." 2013 State Physician Workforce Data Book, pp.46-55.
21 Louisiana Medical Education Commission. 2014 Annual Report.

21 GME spots per Medical School Graduates per State, 2011-12 Academic Year



Source: 2013 State Physician Workforce Data Book. Includes MD and DO recipients.

22 Adjusted Full-time Equivalent (FTE) Resident Caps for Louisiana Providers, 2013 / 2014

Provider / Location	*Adjusted FTE Cap*
NEW ORLEANS METRO AREA	
Children's Hospital / New Orleans	115
East Jefferson General Hospital / Metairie	26
Lakeview Regional Medical Center / Covington	1
Medical Center of Louisiana** / New Orleans	138
Ochsner Clinic Foundation / Jefferson	256
Ochsner Medical Center - Kenner / Kenner	46
Slidell Memorial Hospital / Slidell	2
Touro Infirmary / New Orleans	39
Tulane University Hospital and Clinics / New Orleans	179
West Jefferson General Hospital / Marrero	25
BATON ROUGE METRO AREA	
Baton Rouge General Regional Medical Center / Baton Rouge	68
Our Lady of the Lake Regional Medical Center / Baton Rouge	162
Woman's Hospital* / Baton Rouge	16

Provider / Location	*Adjusted FTE Cap*
ELSEWHERE IN LOUISIANA	
Rapides Regional Medical Center / Alexandria	10
Washington-St Tammany Medical Center / Bogalusa	1
Southern Regional Medical Corporation / Houma	19
Lafayette General Medical Center / Lafayette	19
University Hospitals and Clinics / Lafayette	47
Lake Charles Memorial Hospital / Lake Charles	18
University Health Conway / Monroe	21
CHRISTUS Schumpert Medical Center / Shreveport	6
University Health Shreveport / Shreveport	228
Willis-Knighton Health Systems / Shreveport	10
Louisiana Total	**1452**

* not inluded in the original CMS report
** current University Medical Center (UMC)

Source: CMS, Courtesy of Laurinda Calongne.

23 Adjusted FTE Resident Caps for Louisiana Providers, Summary by Metropolitan Area

City or Metro Area	*FTE Resident Cap*	*% LA FTE Residents*	*# staffed beds†*	*2013 population estimate*	*FTE residents per 100K persons*
Alexandria	10	0.7 %	682	154,903	6.5
Bogalusa	1	0.1 %	48	11,965	8.4
Lake Charles	18	1.2 %	707	202,461	8.9
Monroe	21	1.3 %	1,272	178,618	9.0
Houma-Thibodaux	19	1.4 %	512	209,963	10.0
Lafayette	66	4.5 %	1,021	479,763	13.8
Baton Rouge	**246**	**16.8 %**	**2,015**	**820,409**	**29.7**
Shreveport-Bossier City	244	16.9 %	1,667	446,825	55.1
New Orleans-Metairie-Kenner	827	57.0 %	4,769	1,241,949	66.6
				average	23.1

only 17% of Louisiana's medical residents receive their post-graduate training in Baton Rouge

†Over 3000 additional beds are located outside of these metro areas hosting medical residents.

Sources: Adjusted FTE caps from CMS, Courtesy of Laurinda Calongne. Population estimates from http://louisiana.gov/Explore/Estimates/. Bed counts based on 2015 AHD data posted at http://www.ahd.com/states/hospital_LA.html.

KEY SYMPTOMS OBSERVED

The Health District needs to increase cross-pollination between academic, research and healthcare anchors that is known to improve outcomes and attract patients.

2. Opportunity to Expand Collaborations in Education and Research

One of the key aspirations of the BRHD is to become a premier healthcare destination in the Southeast. Our assessment shows that while Baton Rouge hospitals carry a substantial patient volume, they currently serve a very local population. 93% of patients discharged from Baton Rouge hospitals live inside the metro area, compared to 48% at UAB Medical Center, which attracts patients from all over Alabama. Baton Rouge hospitals also lose patients to other cities in Louisiana: one in six Baton Rouge patients treated in-state is discharged from hospitals outside of Baton Rouge (Figure 24).

This distinction between Baton Rouge and a regional healthcare destination such as Birmingham can be attributed, at least in part, to the role medical education and health-related research plays in the healthcare environment. Baton Rouge is a destination for health research, yet that research occurs largely outside the major hospitals. Medical education exists but has a small role in comparison to the scale of healthcare operations.

Without expanded programs in medical education and research, the growth of the BRHD will depend largely on local population growth. Investment in these programs will likely reduce the percentage of Baton Rouge patients seeking treatment elsewhere, while also increasing the ability of the BRHD to draw patients from across and beyond state lines to its specialty programs.

Fortunately, Baton Rouge has a wealth of academic and research assets that it can build on to create a regional healthcare destination. Connecting existing assets to build new knowledge, practices, and products is a critical first step.

There are also a growing number of interdisciplinary and multi-institutional partnerships between Health District anchors that can become the foundation of a research-based healthcare environment in Baton Rouge. These collaborations are mapped on Figure 25 on page 84, and are described below.

Existing Partnerships in Education of Healthcare Professionals

Undergraduate Medical Education

The location of the state's medical schools in New Orleans and Shreveport historically has been a barrier to medical students receiving their clinical training in Baton Rouge. The shifting of populations post-Katrina provided an impetus for change. Today, both Tulane and LSU Schools of Medicine operate satellite or branch campuses in Baton Rouge.

The Tulane University School of Medicine Satellite Campus was established in May 2010 at the Mid-City campus of Baton Rouge General. The campus is home to the Leadership, Education, Advocacy, and Discovery (LEAD) Academy which trains 23 third-year and 15 fourth-year Tulane University School of Medicine students alongside community physicians.[1] The LEAD program takes advantage of its Baton Rouge location by offering rotations in healthcare policy and operations with state agencies.

The LSU Health Sciences Center Baton Rouge Branch Campus (LSUHSC-BR) was established at the Our Lady of the

1 Strecker, M. "Tulane University, Baton Rouge General Affiliate for Medical School Training Campus." Tulane University. March 3, 2010. https://tulane.edu/news/releases/pr_03032010.cfm.

24 Patient Origin for Baton Rouge Metro Area, New Orleans and Other Louisiana Hospitals, 2013

MAJOR BATON ROUGE METRO AREA HOSPITALS	TOTAL PATIENTS DISCHARGED	% OF DISCHARGED PATIENTS RESIDING IN BR AREA
Our Lady of the Lake Regional Medical Center	30,188	91%
Baton Rouge General Medical Center	17,909	95%
Woman's Hospital	13,878	95%
Ochsner Medical Center Baton Rouge	6,512	96%
Earl K. Long Medical Center*	1,626	92%
TOTAL	70,113	93%

* Earl K Long Medical Center closed during this time period so does not account for a full year of data.

Source: Claritas 2013 population projections; & Truven Health Analytics Louisiana Data, excludes normal newborns (2012 Q3-Q4 and 2013 Q1-Q2)

BATON ROUGE METRO AREA HOSPITALS

93% of patients discharged from Baton Rouge hospitals live in the Baton Rouge area

70,113 PATIENTS are discharged from Baton Rouge hospitals each year

UNIVERSITY OF ALABAMA BIRMINGHAM MEDICAL CENTER

a regional healthcare destination

48% of patients discharged from UAB Medical Center live in the Birmingham area**

45,965 PATIENTS are discharged from UAB Medical Center each year***

** refers to patients residing in Jefferson County, home to UAB Medical Center. 46% of discharged patients live elsewhere in Alabama while 6% live out of state. The University of Alabama at Birmingham: Facts and Figures, page 26. http://www.uab.edu/institutionaleffectiveness/images/factbook/factsfigures.pdf

***ibid. Volumes listed do not include patients discharged from non-UAB hospitals located in the Birmingham Medical District.

Lake (OLOL) Regional Medical Center campus in July 2014. The branch campus shifts over 60 third- and fourth-year LSUHSC-New Orleans students to Baton Rouge to participate in clinical rotations at the OLOL and LSU Baton Rouge clinics.[2] Campus activities are hosted at the newly completed LSU Medical Education and Innovation Center on the OLOL campus, which brings together all LSUHSC educational activities in Baton Rouge (including GME) under one roof. LSUHSC has expressed interest in growing the two-year program into a four-year branch campus in future years.[3]

Graduate Medical Education (GME)

Baton Rouge General Medical Center in Mid-City, OLOL Regional Medical Center, LSU Health Baton Rouge clinics, and Woman's Hospital provide post-graduate training for medical school graduates in Baton Rouge today. (See Figure 22 on page 81 for FTE counts). OLOL Regional Medical Center is the clinical teaching site for ACGME-accredited residency and fellowship programs offered by LSUHSC, TUSOM, and OLOL covering a large number of specialties and subspecialties of medicine.[4] The LSU OB-GYN residency program is

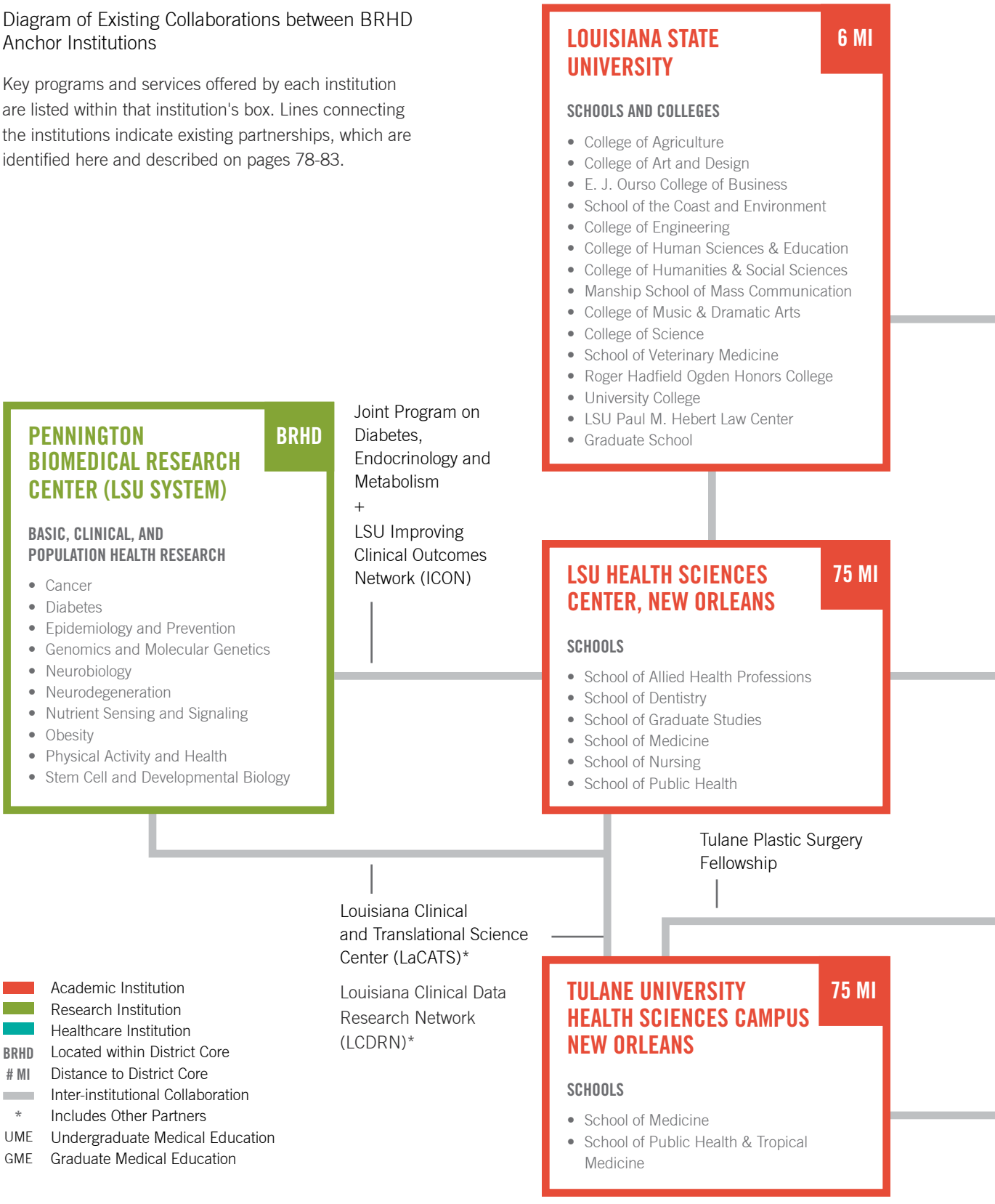
2 Schuler, Marsha. "BR to get medical school branch of LSU." The Advocate. Dec. 17, 2013. LSU Health Baton Rouge is a division of Our Lady of the Lake (OLOL) and includes new clinics as well as clinics formerly managed by the now-closed Earl K Long Medical Center.

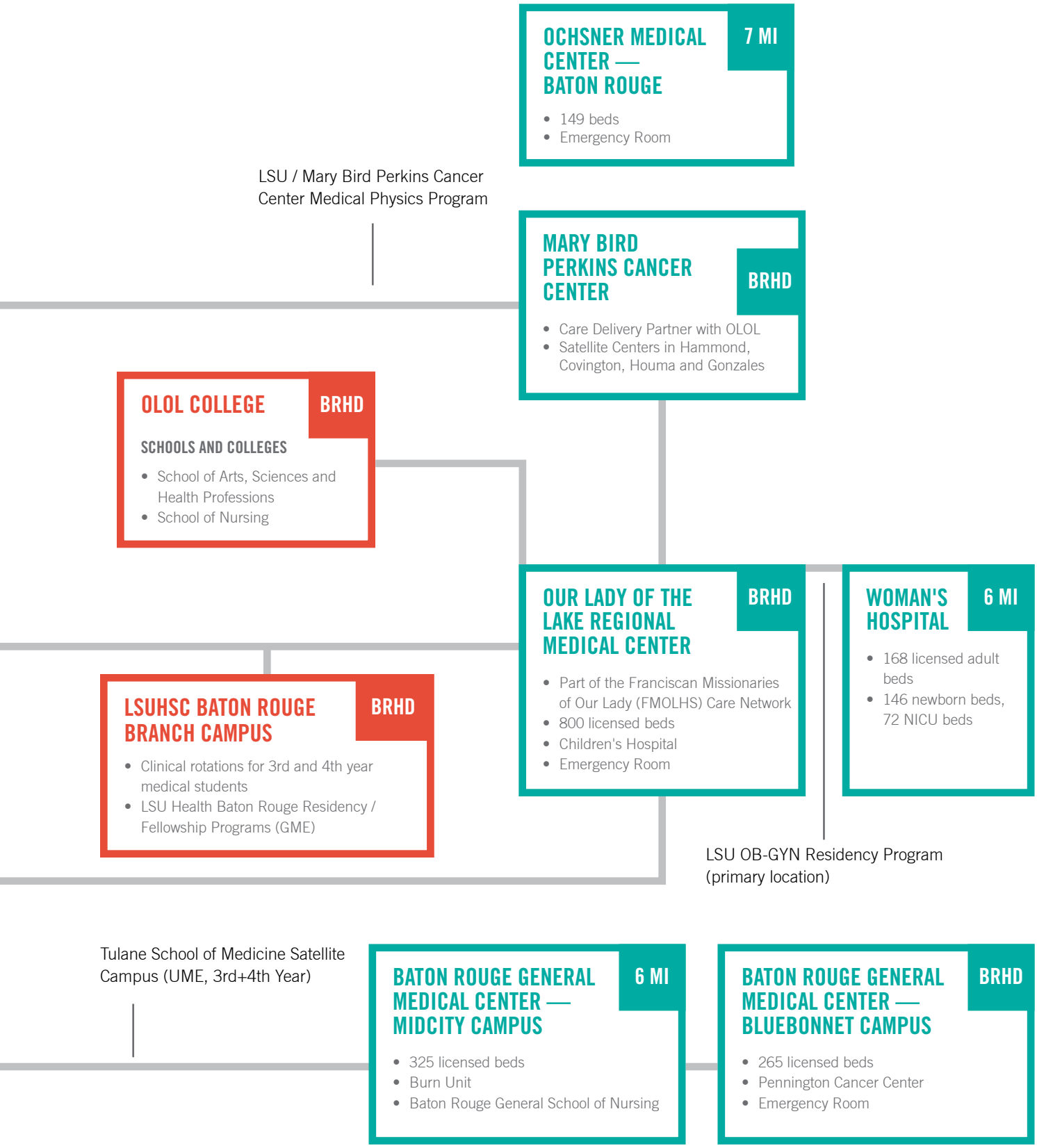
3 Ibid. The expansion would require the participation of LSU to provide the core curriculum for first and second-year medical students.

4 Our Lady of the Lake. "Graduate Medical Education." https://fmolhs.org/ololrmc/Pages/Medical-Education-and-Training/Division-of-Academic-Affairs/Graduate-Medical-Education.aspx.

25 Diagram of Existing Collaborations between BRHD Anchor Institutions

Key programs and services offered by each institution are listed within that institution's box. Lines connecting the institutions indicate existing partnerships, which are identified here and described on pages 78-83.




OCHSNER MEDICAL CENTER — BATON ROUGE
7 MI
• 149 beds
• Emergency Room
LSU / Mary Bird Perkins Cancer Center Medical Physics Program
MARY BIRD PERKINS CANCER CENTER
BRHD
• Care Delivery Partner with OLOL
• Satellite Centers in Hammond, Covington, Houma and Gonzales
OLOL COLLEGE
BRHD
SCHOOLS AND COLLEGES
• School of Arts, Sciences and Health Professions
• School of Nursing
OUR LADY OF THE LAKE REGIONAL MEDICAL CENTER
BRHD
• Part of the Franciscan Missionaries of Our Lady (FMOLHS) Care Network
• 800 licensed beds
• Children's Hospital
• Emergency Room
WOMAN'S HOSPITAL
6 MI
• 168 licensed adult beds
• 146 newborn beds, 72 NICU beds
LSUHSC BATON ROUGE BRANCH CAMPUS
BRHD
• Clinical rotations for 3rd and 4th year medical students
• LSU Health Baton Rouge Residency / Fellowship Programs (GME)
LSU OB-GYN Residency Program (primary location)
Tulane School of Medicine Satellite Campus (UME, 3rd+4th Year)
BATON ROUGE GENERAL MEDICAL CENTER — MIDCITY CAMPUS
6 MI
• 325 licensed beds
• Burn Unit
• Baton Rouge General School of Nursing
BATON ROUGE GENERAL MEDICAL CENTER — BLUEBONNET CAMPUS
BRHD
• 265 licensed beds
• Pennington Cancer Center
• Emergency Room

jointly supported by OLOL and Woman's Hospital. Baton Rouge General has ACGME-accredited residency programs in family medicine, internal medicine, and sports medicine.

Allied Health Education and Interdisciplinary Training

Allied health refers to a cluster of health professions that include roughly 200 careers and that provide diagnostic, technical, therapeutic, and direct patient care and support services in clinical settings.

Baton Rouge has a long history in the education of allied health professionals, including the establishment of its first school of nursing at the Sanitarium in 1912. The school continues its operations at Baton Rouge General's Mid-City campus. Located on the Our Lady of the Lake campus, Our Lady of the Lake College (est. 1923) offers two and four-year programs as well as master's and doctoral degrees in a variety of allied health professions including nursing, clinic laboratory sciences, and health service administration.[5] The presence of allied health students at these campuses has provided an opportunity for interdisciplinary and team-based training with LSU and Tulane medical students.

Medical Physics and Health Physics Program

Medical physics, or clinical science, is the application of physics concepts and methods to the field of medicine. Some of the greatest inventions in modern diagnostics and treatment technologies, including X-Rays, MRIs, and more recently proton therapy, have emerged from the field of medical physics.

The LSU Medical Physics and Health Physics program is one of 46 accredited medical physics programs in the U.S. and the only one in Louisiana.[6] Established in 1980 as a collaboration between LSU and the Mary Bird Perkins Cancer Center (MBPCC), the program has successfully adopted the integrated academic-community cancer center model for medical physics education and research.

The program offers a Master of Science (MS) degree in medical physics, which can be followed by a residency program in radiation oncology for a career in patient care, or a PhD program (also offered) for a career in research and teaching. It is highly specialized and selective: in 2014, the program matriculated 3 MS and 3 PhD recipients.[7]

MBPCC has formed a consortium with cancer centers in Shreveport, Lafayette, and Jackson (Mississippi), and to provide residency training for medical physicists in the region and hosts 1-3 residents per year.[8]

Existing Partnerships in Health Research

Louisiana Clinical and Translational Science Center (LA CaTS)

LA CaTS is an inter-institutional center for biomedical research housed at the Pennington Biomedical Research Center (PBRC) in Baton Rouge. Funded by a $20 million, five-year grant from the National Institutes of Health (NIH), the Center brings together PBRC, LSU Health Sciences Center (LSUHSC)-New Orleans, Tulane Health Sciences Center, and the seven public-private partnership hospitals of the LSU Health Care Services Division (HCSD) with research partners LSU, LSUHSC-Shreveport, Xavier University of Louisiana, and Research Institution for Children at Children's Hospital of New Orleans. The Center aims to develop a robust clinical and translational research infrastructure across its partner institutions with a focus on preventable chronic diseases burdening the underserved population.

LA CaTS is a pioneer in its cross-component and cross-institutional governance and population health scope. Now in its third year of operation, the Center aims to have funded 35-45 pilot projects across its partner institutions by the end of the five-year funding cycle to achieve observable impacts.[9]

Louisiana Clinical Data Research Network (LCDRN)

LCDRN is one of 29 clinical data research networks (CRDNs) that is being established nationwide by the Patient-Centered Outcomes Research Institute (PCORI), which was established in 2013 by Congress to improve population health through clinical research.

LCDRN was set up with an initial PCORI grant of $6.9m awarded to the Louisiana Public Health Institute (LPHI), a statewide non-profit.[10] The grant is being used to set up the technical infrastructure and identify priorities for clinical research in collaboration with

5 Our Lady of the Lake College. "Academic Programs." http://www.ololcollege.edu/academics/academic-programs.

6 Commission on Accreditation of Medical Physics Education Programs (CAMPEP). http://www.campep.org/campeplstgrad.asp.

7 LSU MPP Website. http://www.phys.lsu.edu/newwebsite/graduate/medical_physics.html.

8 MBPCC is hosting 2 of the 5 residents supported by the consortium this year. "Medical Physics Residency Program." http://www.marybird.org/medical-physics-residency-program.

9 LA CaTS website. https://lacats.pbrc.edu/.

10 Griggs, Ted. "Louisiana Health Research Group Receives $6.9 million in Federal Funding." The Advocate. August 15, 2015. http://theadvocate.com/news/neworleans/13092691-148/louisiana-health-research-group-receives.

partners Ochsner Health System, LSU, PBRC, Tulane University, and Baylor Scott & White Health. The Partnership for Achieving Total Health (PATH), which manages the Greater New Orleans Health Information Exchange (GNOHIE) on behalf of LPHI, is also a participant in the network.

Master Plan Research Advisory Committee (MPRAC)

MPRAC is a multi-institutional strategic planning committee that is fostering a shared understanding of key research assets in the state of Louisiana. The committee was convened in 2012 by the state Board of Regents, and includes 20 representatives of public and private campuses with science, technology, engineering, and math (STEM) research activities. The committee's 2014 report highlights five growth sectors that must be targeted for priority investment: (1) advanced manufacturing and materials, (2) clean technology and energy, (3) coastal and water management, (4) digital media and enterprise software, and (5) life sciences and bioengineering. Within the last category, biotechnology, engineering of medical technology, and advancement of health and media informatics were identified as key areas of opportunity.[11] MPRAC is a valuable platform for identifying research synergies between Louisiana institutions and can help attract new funding to biomedical research in Louisiana.

Louisiana Biomedical Research Network (LBRN)

LBRN was established in 2001 with an initial grant from the National Institutes of Health (NIH) to raise the research competitiveness of Louisiana researchers.

The network is led by LSU in Baton Rouge and comprises twenty-seven academic and research institutions across the state, including BRHD stakeholders LSUHSC, PBRC, and Our Lady of the Lake College (OLOLC). The network provides project investigators and their teams with training and workshops, and technical support in two research cores: bioinformatics, biostatistics, and computational biology (BBC Core); and, molecular and cell biology (MCBR Core)[12].

Intra-Institutional Partnerships in Health at LSU

PBRC leads research initiatives in clinical and population science that link physicians, faculty, and researchers working within the LSU system. These collaborations provide case study materials for Pennington researchers and enable application of the research to improve patient care across LSU clinical settings.

Joint Program on Diabetes, Endocrinology and Metabolism

The Joint Program on Diabetes, Endocrinology and Metabolism is co-located at the Pennington Biomedical Research Center (PBRC) in Baton Rouge and LSU Health Sciences Center School of Medicine in New Orleans. It was established in 2010 to align and enhance ongoing education, research, and clinical activities of faculty and researchers affiliated with the two institutions.[13]

LSU Improving Clinical Outcomes Network (ICON)

LSU ICON was established in 2011 to support pilot projects aimed at improving patient care and outcomes at LSU hospitals and clinics. Led by PBRC, the program funded three rounds of projects prior to losing its funding in June 2015. Pilot projects focused on prevention and management of diabetes and cardiovascular diseases, improvement of screening rates, translation to treatment, and reduction of hospital admissions and readmissions.[14]

Data Warehousing

Beginning in 2002, LSUHSC has initiated transfer and warehousing of electronic medical record information from hospitals and clinics operated by LSU Health Care Services Division (currently LSU Health) for the purpose of evaluating and tracking the effectiveness of disease management programs. The Disease Management Evaluation Database (DMED) contains administrative, clinical, laboratory, and medication data stripped of individual identifiers. A major collaboration across the LSU System, DMED is currently being enhanced to enable broader use in improving health outcomes.

11 "Statewide Research Priorities Review Panel Report and Recommendations". MPRAC Committee Memorandum to the Board of Regents. November 19, 2014.

12 LBRN Website. http://lbrn.lsu.edu/.

13 Joint Program on Diabetes, Endocrinology and Metabolism. LSU Health website. https://www.medschool.lsuhsc.edu/endocrinology/about.aspx

14 Katzmarzyk, P. "LSU ICON". Presentation. https://www.lsuhospitals.org/cmo/hcet/15th_Annual/Katzmarzyk.ppsx

KEY SYMPTOMS OBSERVED

The Baton Rouge healthcare community is not organized to take full advantage of the innovation and economic development benefits that can be delivered by clinical research trials.

3. Untapped Potential for Clinical Research Trials and Industry Connections

A clinical study involves research using participants to advance medical knowledge. Two main types of clinical studies exist: clinical trials and observational studies. In a clinical trial, interventions may compare new medical approaches to current practice standards. In an observational study, researchers assess health outcomes in a group of participants according to a research plan. Although clinical trials are often conducted at large academic health centers with established research and education programs, a growing number of community hospitals have also been embracing clinical studies to add revenue, gain community prestige, and attract physician talent.

Clinical Research in Baton Rouge

Two recent studies sponsored by the Baton Rouge Area Chamber demonstrate significant opportunity for economic development through clincial research expansion in Baton Rouge.[1] Pennington Biomedical Research Center provides about twenty clinical trials involving over a thousand patients per year; Pennington's focus on nutrition places Louisiana above the national average for metabolism and endocrine trials.[2] Major healthcare providers in Baton Rouge also offer a limited number of clinical trials to their patients.[3]

Benchmark comparisons reveal that Baton Rouge lags significantly behind peer cities in its clinical research activity:

- The number of open clinical trials in Baton Rouge is significantly less than the peer city average.[4] (Figure 26).
- The current research portfolio is lacking significant early phase and industry-sponsored research studies.
- Approximately 15% of open studies in Baton Rouge are early phase trials, compared to a peer average of ~35%.
- Baton Rouge has significantly fewer industry-sponsored trials than peer cities (Figure 27).

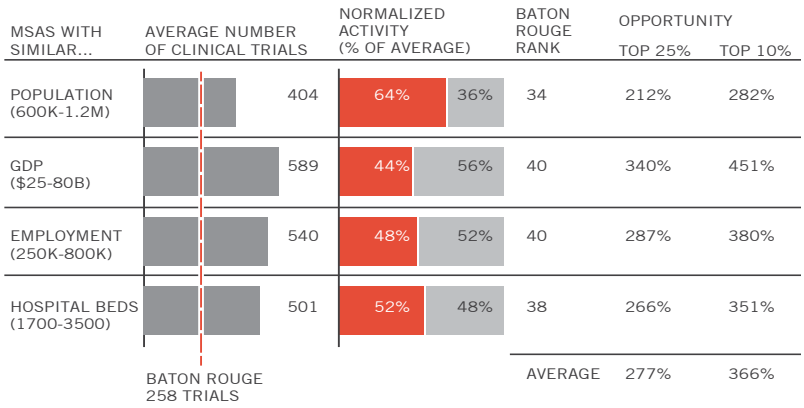
Barriers to Clinical Research Growth

While Baton Rouge has the opportunity to grow its clinical research activity to peer city levels, challenges remain. Baton Rouge healthcare anchors have reported little to no return for their investments in clinical trials, listing participant recruitment as a challenge.[5] Community hospitals around the country have reported similar challenges: a 2013 national survey found lack of resources, staffing, and participant awareness to be significant barriers to success in clinical research programs sponsored by community hospitals.[6]

The BRHD providers can increase revenue from clinical trials by jointly addressing some of these challenges. Opportunities exist for consolidating administrative and outreach functions to reduce cost and increase public participation. Offering a single entry point can also help increase the number of industry sponsors that consider Baton Rouge for their trials.

1 "Accelerating Clinical Trials in Baton Rouge." 2012; and, "Clinical Trials Feasibility Study Update." 2014. Baton Rouge Area Chamber.
2 PBRC."Clinical Trials." https://www.pbrc.edu/clinical-trials/.
3 For OLOL, see: https://fmolhs.org/ololrmc/Pages/Clinical-Trials.aspx. For Baton Rouge General, see: http://brgeneral.org/services/clinical-trials. For Ochsner, see: http://research.ochsner.org/clinical-research (includes all locations).
4 Clinical Trials.Gov. http://www.clinicaltrials.gov.
5 "Clinical Trials Feasibility Study Update." ibid.
6 "Clinical Research in Community Hospitals." Center Watch. 2013. http://www.guidestarclinical.com/downloads/bvbe1pKFA4/FNL%202013%20GS%20Community%20Hospital%20Survey%20Summary%20Report.pdf.

26 Clinical Trials Benchmarking with Similar Metropolitan Statistical Areas (MSAs)



Source: "Accelerating clinical trials in Baton Rouge". Baton Rouge Area Chamber. September 26, 2012.

27 Peer City Comparisons for Clinical Research Trials

METROPOLITAN STATISTICAL AREA (MSA)	INDUSTRY SPONSORED TRIALS	CLINICAL TRIALS/ MILLIONS OF PEOPLE	PHASE III TRIALS (%)	INDUSTRY SPONSOR (%)
Birmingham-Hoover, AL	1,224	1,483	38%	71%
Salt-Lake City, UT	1,038	1,302	41%	75%
Oklahoma City, OK	1,005	1,027	44%	83%
Charleston-North Charleston-Summerville, SC	823	1,664	42%	76%
Omaha-Council Bluffs, NE-IA	825	1,362	49%	80%
Tuscon, AZ	812	996	46%	70%
Rochester, NY	763	1,036	27%	60%
Little Rock-North Little Rock-Conway, AR	742	1,395	49%	75%
Honolulu, HI	273	476	46%	76%
Worchester, MA	267	505	44%	58%
Cape Coral-Fort Myers, FL	259	519	46%	71%
Baton Rouge, LA	258	466	54%	78%
Bridgeport-Stamford-Nowak, CT	246	317	46%	80%
Grand Rapids-Wyoming, MI	233	532	42%	72%
El Paso, TX	205	287	35%	57%
Camden, NJ	67	72	43%	66%
Boise City-Nampa, ID	44	81	41%	69%
Wilmington, DE-MD-NJ	43	149	44%	96%
Peabody, MA	10	26	45%	75%
Gary, IN	2	3	41%	92%
Average=532 / Average=660			45%	74%

Source: "Accelerating clinical trials in Baton Rouge". 2012. Baton Rouge Area Chamber.

Baton Rouge has **one-third** of the clinical and **one-fourth** of the industry-sponsored trials when compared to peer cities.

28 Existing Research Affiliations of Health District Healthcare Partners

BATON ROUGE GENERAL
PBRC
Tulane University
Cornell University
John Wayne Cancer Institute
LaCell, LLC
University of Utah
LSUHSC

OUR LADY OF THE LAKE
PBRC
Cardiovascular Research Foundation
LSU-Baton Rouge
Mary Bird Perkins / OLOL Cancer Center

MARY BIRD PERKINS CANCER CENTER
Louisiana State University
Eastern Cooperative Oncology Group
NRG Oncology
SWOG
Wake Forest University

OCHSNER BATON ROUGE
Ochsner Medical Center New Orleans
University of Alabama, Birmingham / National Institutes of Health (forthcoming)

Source: "Clinical Trials Feasibility Study Update." 2014. Baton Rouge Area Chamber.

HEALTH EDUCATION + RESEARCH

Treatment Plan

PRIORITY INTERVENTION

TIMEFRAME
3-10 years

ESTIMATED COST
TBD (See "next steps" below)

LEADS
Louisiana State University
LSU Health Sciences Center
Pennington Biomedical Research Center
BRHD Healthcare Anchors

KEY FUNDING SOURCES
Private Grants
Industry Funding

DISTRICT ROLE
Coordination and Advocacy

NEXT STEPS
Baton Rouge Medical School Feasibility and Economic Impact Study to determine potential partners, business model, type and size of school, curricula offerings, ownership, governance, potential affiliations, facility and operational costs, potential funding sources, and projected economic impact. BRAF has engaged Tripp Umbach to do an in-depth analysis of expanded medical education in Baton Rouge.

Harness Local Assets to Establish a Unique Four-Year Medical School in Baton Rouge

The addition of a comprehensive medical school with a forward-looking vision will be that last piece in the equation to complete a true Health District in Baton Rouge.

While Katrina may have planted the seeds for a medical school in Baton Rouge a decade ago, comprehensive medical education in the Capital City is an idea that has finally come into its own with the establishment of the LSUHSC Baton Rouge Branch Campus.

The BRHD planning process has engaged the leadership of academic, research and healthcare anchors in a productive dialogue about the future role of medical education in the BRHD. District partners have expressed interest in a future medical school as an academic anchor in the Health District. With the LSUHSC-BR already in existence, conversations have centered around its potential expansion into a full four-year program.

Two potential avenues for branch campus growth exist. The first would see expansion of the two-year branch into a four-year program that uses the same curriculum as the medical school in New Orleans. The alternative is to grow the two-year branch into an independent, four-year medical school with new funding sources supporting experimental new curricula and pedagogies not offered at the New Orleans and Shreveport locations.[1] These programs would complement the existing medical schools and provide Louisiana with a competitive advantage for training and keeping the best physicians. The latter option provides greater flexibility for the new anchor to connect with local assets, such as LSU, PBRC, healthcare partners, and allied health institutions. It also enables Baton Rouge to institute forward-looking programs that align with the future of medical technology and changing healthcare delivery models.

Aligning with the Future of Medical Education

In 2010, the Commission on Education of Health Professionals for the 21st Century published an influential report calling for a complete redesign of medical education to address health gaps and inequities across populations, and global challenges brought forward by new infectious, environmental, and behavioral risks.[2] The report underscored an emergent reform movement in medical education that has since grown. Forward-looking medical schools across the U.S. are adopting new curricula and pedagogies that are intended to align education with the technology-driven, cost-conscious and patient-centered future of healthcare.

1 Adoption of a new curriculum for a four-year medical school would require the approval of the Louisiana Board of Regents.

2 Frenk, J, Chen L, et al. (2010). "Health Professionals for a New Century: Transforming Education to Strengthen Health Systems in An Interdependent World." Lancet, 376 (4 December 2010), 1923–58. Retrieved on 7/2014 at http://www.healthprofessionals21.org/docs/HealthProfNewCent.pdf.

Below is a listing of key reform trends that are impacting medical education today:

- Competency-based training is the move away from memorization towards problem-solving skills to address the diverse problems encountered in today's healthcare. Contextual education supports this goal by integrating clinical experiences, such as patient interviews, into the typical science curriculum of first and second year medical education.[3] Competency-based training is quickly becoming the norm: In recent years, both LSUHSC and TUSOM have reorganized their first year curriculum to incorporate analytical tasks and early clinical exposure.[4]

- Team-based / Inter-Professional training responds to the growing trend of allied health professionals used as "physician extenders" in healthcare and involves co-education or training teams of healthcare professionals in real and simulated clinical settings.

- Technology-Integrated Curriculum is transforming medical education. Advances in telecommunications technology are changing the way physicians interact with their patients. Education on remote delivery of care, including telemedicine, is increasingly a part of medical school curricula.

- Interdisciplinary Studies and combined degrees are growing in response to the complexities of contemporary medical practice and the U.S. healthcare business, enabling students, residents and interns to build unique careers in medicine. Leading medical schools such as Johns Hopkins and Mt. Sinai are offering interdisciplinary degrees in humanities and medicine to produce more well-rounded physicians.[5]

The Opportunity to Build a New Kind of Medical School

One of the most exciting possibilities for Baton Rouge is the creation of an engineering-based medical school that combines the strengths of the LSU School of Engineering and the LSUHSC-BR.

The University of Illinois at Urbana-Champaign (UIUC) has recently announced its plans to launch Carle Illinois College of Medicine, the first engineering-based college of medicine in the world.[6] (See case study on page 93).

Baton Rouge has the potential to compete in this arena with its own engineering-based medical school, or a medical school that offers robust MD-PhD programs to future physician-scientists working in bioinnovation. The groundwork for such a school has already been laid with the recent addition of the LSU/LSUHSC triple degree program in MD-PhD. (See box on page 98).

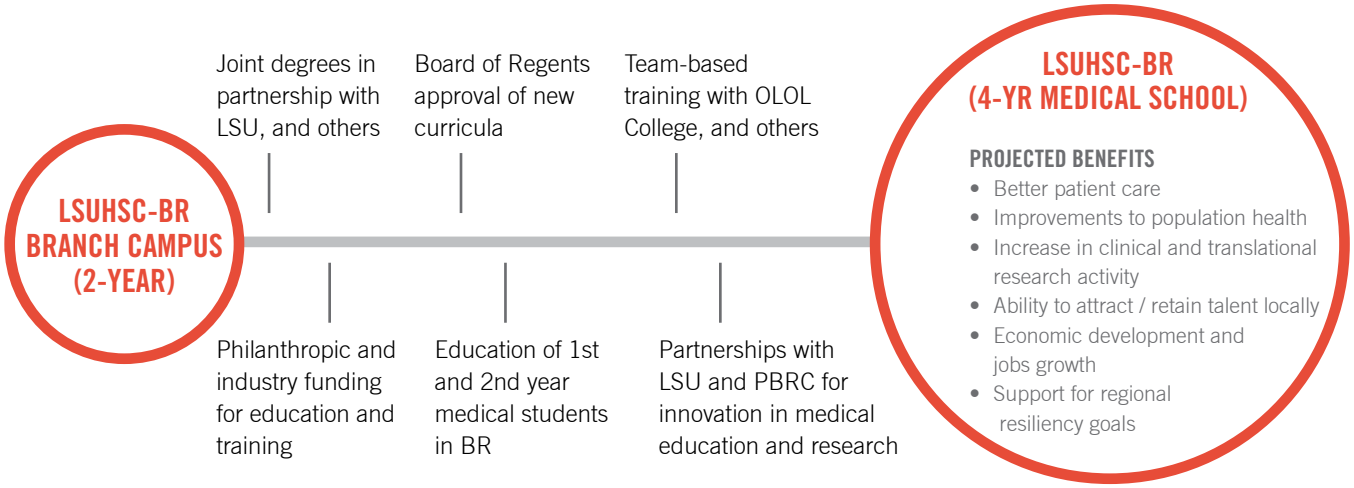
3 AAMC Website. "Competency-Based Medical Education Takes Shape." https://www.aamc.org/newsroom/reporter/april11/184286/competency-based_medical_education.html

4 "Curriculum for 4-Year MD Program in New Orleans, Louisiana." LSU Health New Orleans. https://www.medschool.lsuhsc.edu/admissions/Curriculum.aspx

5 "Johns Hopkins Adds New Interdisciplinary Major: Medicine, Science and Humanities." January 22, 2015. http://hub.jhu.edu/2015/01/22/major-medicine-science-humanities. Icahn School of Medicine FlexMed Program. https://icahn.mssm.edu/education/medical/admissions/flexmed

6 Castillo, W. "Groundbreaking Engineering-Based College of Medicine to be Created at U. Illinois." March 22, 2015. http://college.usatoday.com/2015/03/22/the-nations-first-engineering-based-college-of-medicine/

29 Conceptual Model for the Expansion of LSUHSC-BR into a 4-year Medical School in Baton Rouge



CASE STUDY: CARLE ILLINOIS COLLEGE OF MEDICINE (FALL 2017)

The Carle Illinois College of Medicine is a new, first-of-its kind engineering-based medical college that is expected to open at University of Illinois Urbana-Champaign (UIUC) in Fall 2017 with an inaugural class of 25 students.

Engineering-Based Curriculum to Advance Economic Development

The College will build on the strengths of UIUC's School of Engineering and National Center for Supercomputing Applications to offer an innovative medical school curriculum "at the intersection of engineering, technology and big data with healthcare." The College aims to:

- educate physician scientists, physician engineers and medical innovators for the nation;
- increase the number of biomedical-focused faculty and researchers in Urbana to build an active innovation community;
- expand collaborations in biomedical research between UIUC and the University of Illinois flagship campus in Chicago 150 miles to the north;
- support the growth of a successful biomedical technology cluster at Urbana-Champaign; and,
- transform healthcare delivery to improve patient outcomes in the region.

Governance and Funding

The College is a partnership between UIUC and Carle Health System (CHS), one of the state's largest providers of clinical care. It is being established *without* any new state general funds or redistribution of existing funds. CHS has committed $100m over ten years to the new school. An additional $135m is being assembled from private donors and industry. Student tuition and fees, and clinical revenues will also contribute to the annual operating budget of the new school.

For further information, see:

Carle Illinois College of Medicine. http://www.medicine.illinois.edu/

The proximity of the LSUHSC-BR branch campus to LSU and PBRC also offers immediate opportunities for growth with combined-degrees in medicine. (See page 100 for details).

Medical School Location Options

The Health District planning process has identified two potential locations for a four-year medical school in Baton Rouge, which are illustrated on the long-term Vision Plan in Figure 30, and described below.

Option 1: Expanded Academic Campus

An expanded academic campus could be built around the newly completed LSU Medical Innovation and Education Center on Brittany Avenue, in partnership with Our Lady of the Lake College, which is seeking to transform its car-oriented campus.

Benefits of this location include proximity to potential clinical partners—OLOL Regional Medical Center, Baton Rouge General Medical Center at Bluebonnet, and the new OLOL Children's Hospital. Opportunity exists to develop Brittany Drive into a campus gateway street with a signature district park, and a new underpass connection to Perkins Road.

Option 2: PBRC Campus Expansion

The 688,000 sq. ft., 234-acre PBRC campus is located in the BRHD and houses state-of-the art laboratories, clinics, conference facilities and office space. In the aftermath of Hurricane Katrina, classes for all six schools of LSUHSCNew Orleans including the School of Medicine were temporarily hosted at the Pennington campus.[7]

PBRC has some facilities that are currently vacant or underutilized, and could initially be used for medical school expansion in Baton Rouge. The campus grounds can also host a future medical school campus, which can share existing facilities such as the conference center with the PBRC. The location of a four-year medical school at PBRC would facilitate sharing of faculty and resources, and research collaborations between the two institutions.

Economic and Community Benefits

In addition to helping address the state's current and likely future need for physicians, a medical school in Baton Rouge would also be a strong economic engine. Medical schools generate government revenue through tax revenues associated with employees, physicians, medical residents, and businesses serving the institution.

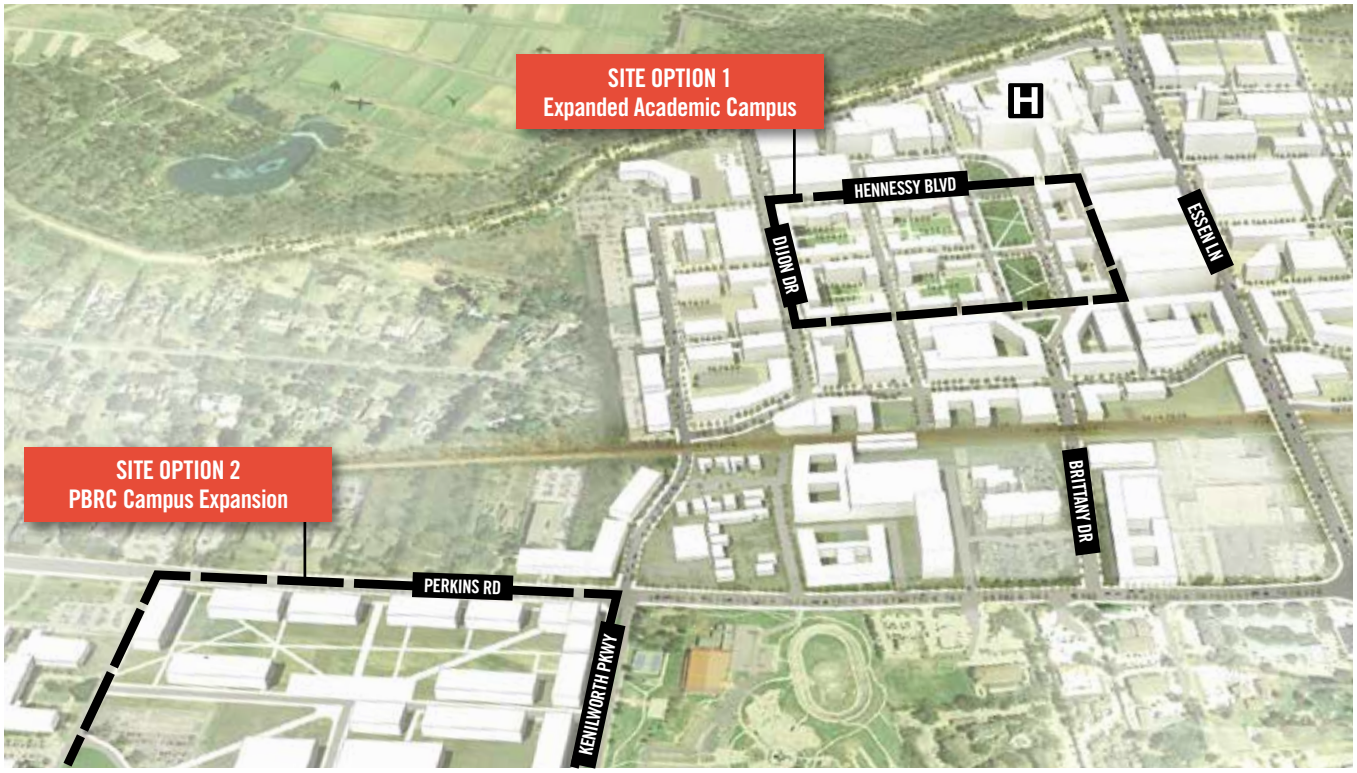
In a 2012 study by the AAMC, Louisiana ranked 23rd in economic ($7,593,762,705), employment (42,602 jobs), and government revenue ($383,823,662) impact of medical education among the 25 states with AAMC-member institutions. Other measures showed the State as 10th in out-of-state patient spending and 20th in visitor spending. Comparatively, these numbers increase with the footprint of medical education in a given state.[8]

Medical schools contribute to local economies through jobs growth, health industry growth, research commercialization, and improved health outcomes.

7 Hollier, S. "The Impact of Hurricane Katrina on Louisiana State University Health Sciences Center New Orleans: Testimony for the United States Senate." The schools' more than 1,000 students, faculty and staff were housed in a ferry boat docked on the Mississippi River. The school was able to move back to its New Orleans campus nine months after the disaster.

8 AAMC. 2012. "The Economic Impact of AAMC-Member Medical Schools and Teaching Hospitals 2012." https://www.aamc.org/download/326478/data/trippumbachcorrected.pdf.

30 Health District Vision: Medical School Location Options



GRADUATE MEDICAL EDUCATION: RETURN ON INVESTMENT

$200,000
estimated annual economic contribution of a medical resident to the community

$3 MILLION
estimated cost of uncompensated care delivered by a resident in Internal Medicine each year

$75,000
saved on average in recruitment costs by hospitals for each resident they hire

1 IN 2 RESIDENTS
practice in the state where they have received their residency training

$1.5 MILLION
estimated annual economic contribution of a physician to the community

6 JOBS
created in the community for each practicing physician

Sources: "Expanding Graduate Medical Education in Indiana." May 12, 2014. Report by Tripp Umbach. http://evansville.medicine.iu.edu/files/9314/3215/2212/State_of_Indiana_GME_Expansion_Approach_with_Southwest_IN_as_Pilot.pdf. Retention information from AAMC at https://www.aamc.org/data/420840/tablec6.html.

Rx PRESCRIPTION

Baton Rouge has the academic, research and healthcare assets to support the growth of the 2-year branch campus into a forward-looking medical school that supports Health District goals.

1. Engage Partners in Medical Education Expansion in Baton Rouge

1.1. Formalize advocacy for Baton Rouge Medical School.
1.2. Investigate local and private funding sources for medical education and training.
1.3. Add combined degrees in medicine to the LSUHSC-BR.

1.1. Formalize advocacy for Baton Rouge Medical School.

Development of a full four-year medical school in Baton Rouge requires a shared vision, commitment, and leadership from academic, clinical, governmental, and business entities. Formation of a champion group will be necessary to guide preparation of a Feasibility and Economic Impact Assessment. This study would consider funding models and sources, curriculum alternatives, and the role of education and clinical partners among other aspects of the initiative. This study should include estimates for start-up capital costs and ongoing annual operational costs that rely on new and alternative non-state funding sources.

UACOM-Phoenix, a four-year medical school established in 2007, provides a valuable precedent. Arizona Commission of Medical Education and Research (ACMER), a champion group assembled by the Governor to guide the implementation plan for an independent, four-year medical school in Phoenix, was instrumental in the realization of the plan in just three years. (See case study on page 99). The group included the future academic and healthcare partners for the medical school, as well as the Mayor and the Governor.

The BRHD planning process has identified key institutional partners who can contribute to the planning, implementation, and/or operation of a four-year medical school in Baton Rouge. These partners are identified below along with their potential role and benefits for involvement:

- Louisiana State University
- Pennington Biomedical Research Center
- Baton Rouge healthcare anchors
- Baton Rouge allied health institutions

The champion group is expected to be formed from the leadership of the above-listed organizations, in addition to political and business leaders invested in the medical school vision (i.e. Baton Rouge Area Chamber and the Mayor-President). Leading academic physicians in the community should also be engaged as key experts and stakeholders in the planning process.

Louisiana State University

The LSU flagship campus is located less than 6 miles, or within 15 minutes driving distance, of the LSUHSC Baton Rouge branch located in the Health District. It has an enrollment of 30,000 students in nationally-ranked programs in science, engineering and technology, including programs such as computer science and biology, which have direct applications in medicine.

LSU is recognized by Carnegie Foundation as one of 108 universities nationwide with the highest level of research activity.[1] Research partnerships

1 LSU Office of Research and Economic Development. https://sites01.lsu.edu/wp/ored/.

31 Partnership in Medical Education Expansion: Potential Roles and Benefits

Partners	Potential Role(s)	Potential Benefits
LOUISIANA STATE UNIVERSITY Flagship campus of the LSU System located in Baton Rouge.	• Basic sciences education of first and second year medical students • Partnership in the delivery of dual-degree programs in medicine • Expansion of early admission to medical school to other high-achieving LSU students, regardless of major • Joint industry partnerships in emerging fields in medicine, such as digital media	• Retention of top LSU graduates within the LSU system for medical education • Ability to attract faculty to teach and conduct research in joint programs • Support for new undergraduate degree programs in health sciences • Greater potential for aligning LSU basic science research with the growing healthcare market, including opportunities for industry grants and commercialization • Expanded economic impact of LSU research and education
PENNINGTON BIOMEDICAL RESEARCH CENTER LSU-affiliated research center with a focus on chronic disease and nutrition	• Faculty assistance in delivery of dual degree programs in medicine • Partnership in chronic disease research and population health initiatives • Partnership in clinical research, including research dedicated to improvements in healthcare delivery and outcomes • Shared development of facilities and educational resources	• Enhancement of existing research programs • Improved ability to recruit top talent to existing PBRC programs • Improved access to patients for clinical trials • Improved utilization and potential growth of campus facilities
BATON ROUGE HEALTHCARE INSTITUTIONS	• Partnership in clinical research, including research dedicated to improvements in healthcare delivery and outcomes • Shared development of facilities and educational resources • Access to patients for clinical research recruitment	• Ability to attract more patients with faculty practitioners • Potential improvements to healthcare delivery • Potential revenue and patient benefits from clinical research by students and faculty • Creation of an environment of continuous learning and innovation
BATON ROUGE NURSING AND ALLIED HEALTH PROGRAMS	• Partnership in team-based training of medical students and allied health professionals • Shared development of facilities and educational resources	• Enhancement of teaching programs through co-education • Cost-savings from shared facilities and educational resources
GOVERNMENT, BUSINESS AND COMMUNITY PARTNERS	A four-year medical school in Baton Rouge will need the support of key government, business and community partners for its eventual realization in addition to the above-listed institutions, which are identified as key operational partners. These include but are not limited to the Governor's Office, elected officials, Mayor-President for Baton Rouge, Baton Rouge Area Foundation (BRAF), Baton Rouge Area Chamber, local foundations, and members of the business community.	

with industry are becoming more significant for LSU in light of dwindling state contributions to its educational enterprise. LSU's growing partnership with Electronic Arts, Inc., for example, has supported the development of a state-of-the-art testing facility on campus that also includes space for LSU's digital media degree programs.[2] The partnership, which was sponsored by Louisiana Economic Development (LED)'s Digital Interactive Media and Software Development Incentive,[3] can be a template for future industry partnerships on digital healthcare technologies at the LSUHSC-BR.

LSU already has a significant impact on medical education in the state. Its College of Science has a large pre-med program that ranks eighth in the nation in the number of students who apply to medical school, and provides about half the incoming class at LSU medical schools each year.[4] The recent addition of the LSU/LSUHSC MD/PhD program in biomedical engineering has strengthened the ties between the two institutions. (See box below). The program, which will allow LSU to attract talent from around the nation, is only one of many synergistic linkages that can be built between LSU and LSUHSC. The BRHD should explore opportunities to expand this program into an engineering-based medical school with supporting partners.

Pennington Biomedical Research Center (PBRC)

The PBRC has been a national destination for cutting-edge research on diabetes, obesity and nutrition since it opened in 1988. Part of the LSU system, in 2013-2014 the research center employed 529 employees, including 80 faculty and 20 post-doctoral fellows who secured $34.7M in research grants. The PBRC facilities and campus can potentially be used for medical school expansion in Baton Rouge. (See Figure 30 on page 95).

2 Chowdhary, S. "Electronic Arts brings the game to LSU main campus." The Advocate. March 14, 2013. http://theadvocate.com/entertainment/5356518-84/electronic-arts-brings-the-game.

3 LED Website. "Digital Interactive Media and Software Development Incentive." http://www.opportunitylouisiana.com/page/digital-interactive-media-and-software-development-incentive.

4 LSU College of Science. http://science.lsu.edu/Student-Resources/Prospective-Students/Pre-Med-Dental-High-School-Information/item39893.html

LSU / LSUHSC TRIPLE DEGREE PROGRAM IN BIOMEDICAL ENGINEERING (2015)

MD-PhD programs train medical scientist-practitioners in research areas of their interest within medicine. While a majority of MD-PhD candidates conduct lab-based research in disciplines such as cell biology or genetics, MD-PhD programs can combine any kind of research with medicine, ranging from history of medicine to epidemiology.

LSUHSC in New Orleans has a well-established MD-PhD program with seven areas of graduate study. These programs accept students through a regular admissions process. In January 2015, LSU / LSUHSC announced the addition of a triple degree program in biomedical engineering that enables students to fast-track LSU undergraduate, medical school and PhD degrees in one to three years less than the traditional path. The program is expected to admit 10 undergraduates per year, and to eventually grow into a Biomedical Engineering Research Institute.

The programs and facilities needed to support this degree at LSU are already in place in Baton Rouge. Labs dedicated to biomedical research, including tissue engineering and regenerative medicine, cellular and molecular engineering, and nanoparticle targeted delivery are located within the Department of Biological and Agricultural Engineering on the main campus. Medical education is located at the newly completed LSU Medical Education and Innovation Center in the Health District where third- and fourth-year medical students are receiving their clinical training. LSU School of Engineering is also currently expanding its facilities to accommodate a planned 30% enrollment increase by 2017.

This promising new degree program enables LSU to join the ranks of the nation's top research institutions including Harvard-MIT (joint program), Duke, UPenn, Johns Hopkins, UCSD, and Emory-Georgia Tech (joint program). It also stands to support the projected growth of the College of Engineering, with potential new discoveries that can be commercialized to improve healthcare around the globe.

For further information, see:

"Triple Degree Program At LSU Serves The Growing Biomedical Industry In Louisiana". WWNO. January 9, 2015. http://wwno.org/post/triple-degree-program-lsu-serves-growing-biomedical-industry-louisiana

"LSU's College of Engineering $110 million Expansion Set to Meet an Estimated 30 Percent Enrollment Increase In Fall 2017." The Times-Picayoune. November 17, 2014. http://www.nola.com/news/baton-rouge/index.ssf/2014/11/lsus_college_of_engineering_11.html

Baton Rouge Healthcare Institutions

Baton Rouge healthcare institutions are already providing a variety of teaching venues and physician support to medical students and residents in Baton Rouge. The expansion of medical education and training programs can provide greater support for healthcare delivery at these institutions, facilitating recruitment of faculty practitioners to provide advanced care. The presence of faculty and students can lead to an increase in clinical trials and associated benefits.

Baton Rouge Nursing and Allied Health Programs

The relationship between nurses and allied health professionals, and the physicians they support is quickly changing in today's cost- and performance-driven healthcare economy. Nurse practitioners and physician assistants increasingly serve as "physician extenders," undertaking tasks previously completed by physicians. Allied health professionals are now seen as valuable partners in physician-led teams delivering personalized care to patients.

Baton Rouge nursing and allied health programs are already partnering with LSUHSC and Tulane branch campuses to provide team-based training. With the expansion of medical education, opportunities exists for joint curriculum development and partnership investments in shared educational and student facilities.

1.2 Investigate local and private funding sources for medical education and training.

Following the successful completion of the Feasibility and Economic Impact Assessment, medical school advocates should create an implementation plan that will study various funding strategies for a four-year medical school located in the Health District.

Given the current shortage of funds for public education in Louisiana and the national shortage of funds for graduate medical education in particular, the Implementation Plan should investigate potential local and private funding sources such as philanthropic grants and industry sponsorships that can be

CASE STUDY: UNIVERSITY OF ARIZONA COLLEGE OF MEDICINE, PHOENIX (2007)

UACOM Branch Campus in Phoenix

University of Arizona's College of Medicine (UACOM) opened in 1967 on the UA's main campus in Tucson and grew into the Arizona Health Sciences Center. In 1983, UACOM added third- and fourth-year clinical rotations at hospitals in Phoenix, located about 120 miles from Tucson. A branch campus was established to centralize these programs in 1992: the campus expanded to include 40% of UACOM's clinical rotations by the 2000s.

UACOM-Phoenix (4-Year Medical School)

In August 2004, Arizona Board of Regents, University of Arizona (UA) and Arizona State University (ASU)—signed a Memorandum of Understanding to partner in the expansion of UA's newly built Phoenix Biomedical campus. The expansion would include the growth of the UACOM branch campus into a four-year Medical School, co-located with ASU's College of Nursing and jointly operated research centers—all supporting biomedical education, research and technology in conjunction with existing teaching hospitals with a specific focus on the healthcare needs of the Phoenix area.

The eventual realization of the UACOM-Phoenix is owed in large part to the Arizona Commission of Medical Education and Research (ACMER), which was set up by the Governor's Office in October 2004 to create an Implementation Plan for the Phoenix medical school. The Commission consisted of the Governor (chair), the Mayor of Phoenix, Presidents of the three academic partners, CEOs of three partner hospitals, President of the Translational Genomics Research Institute—a non-profit research institute located in the District—and President of the Flinn Foundation, a private, non-profit philanthropy focused on expanding biosciences in Arizona.

300+
medical students

7,185
direct and indirect jobs

$961 MILLION
economic impact in 2013

$2.5 BILLION
economic impact in 2025

Source:"Economic Impact: the UACOM-Phoenix/Health Sciences." The University of Arizona. http://uanews.org/sites/default/files/UA_COMP_EIR_Infographic.pdf

used to jumpstart a four-year medical school and build new facilities. The Carle Illinois College of Medicine, which is introduced as a case study on page 91, is a recent example of a medical school established within a state university system without the use of any state funding.

As part of the fundraising effort for a medical school in Baton Rouge, the champion group should also investigate local sources of funding for post-graduate training of physicians, with the primary goal of increasing the number of ACGME-accredited residency or GME spots available in Baton Rouge. Expanded GME funding could also be used to make existing GME spots in Baton Rouge more desirable and competitive in the nationwide pool.

Regional GME consortia—formed between medical schools, teaching hospitals, and other organizations involved in the training of medical residents and interns in a given area—are successful platforms for the coordination and funding of GME programs.[5] The Implementation Plan should assess the feasibility of a GME consortium in Baton Rouge.

Training a medical resident or intern, while resource intensive, is a great investment for any community. A 2012 survey of eight core residency programs at an academic medical center has found non-reimbursed costs for resident education to be between $1,500 to $9,417 per resident, per year.[6] By comparison, each resident in a community-based program is estimated to generate $200,000 in annual economic benefits, and $1.5m for each year that they practice as a physician in the community.[7]

1.3. Add combined degrees in medicine to the LSUHSC-BR.

The LSUHSC-BR branch campus has immediate growth opportunities that are made possible by its physical proximity to the LSU main campus and the Pennington Biomedical Research Center (PBRC). The campus can host a series of new combined or dual-degree programs in medicine that build on existing degrees or research opportunities offered at either or both institutions. The existence of all three institutions under the LSU system umbrella makes such combinations not only feasible, but mutually supportive.

Combined programs often attract high-achieving and creative students who are interested in exploring more than a single field or career path in medicine. They also create opportunities for practicing physicians and other healthcare professionals to come to Baton Rouge to receive further education. The integration of curricula found in combined programs enables participating students to graduate faster than they would if they were pursuing each degree separately. Dual degree programs typically combine study of medicine with public health (MD-MPH), law (MD-JD), business administration (MD-MBA) and science (MD-PhD). A 2011 survey found that enrollment in dual-degree programs in medicine increased 36% between 2002 and 2011 to over 5,000 students. More than 90% of the enrollment in dual-degrees is in MD-PhD programs.[8] The Health District planning process has facilitated the creation of the LSUHSC MD/PhD program in biomedical engineering. This promising new program is one of many potential combinations of degrees that can be offered to increase the impact of LSU and LSUHSC-BR.

Biomedical engineering is just one of a number of interdisciplinary fields of research that is changing the face of medicine today. Additional areas of focus that build on LSU-specific strengths for dual-degree programs include:

- Biomedical Informatics
- Biosciences and Genomics
- Computational Biology
- Epidemiology
- Healthcare Management
- Law
- Public Health and Biostatistics

When identifying combined degrees, LSU and LSUHSC-BR should consider the following criteria:

- Alignment with trending research areas in healthcare. (Figure 32 on page 101 illustrates great alignment between LSU's program strengths and current trends in healthcare)
- Synergies with ongoing research at PBRC
- National Institutes of Health (NIH) funding priorities
- Availability of state grants, such as the Digital Interactive Media and Software Development Incentive that can facilitate partnerships with industry[9]
- Potential partnerships with national corporations that have a presence in the Baton Rouge area

5 "Expanding Medical Education in Southwestern Indiana." Report by Tripp Umbach. Jan 5, 2015.
6 "Hidden Costs of Graduate Medical Education in the United States." June 2012. Journal of Graduate Medical Education, 4 (2), 267-268. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3399629/pdf/i1949-8357-4-2-267.pdf. The cost was covered by physician practice plans (70%), hospital funds (25%), and special funds (5%).
7 "Expanding Graduate Medical Education in Indiana." May 12, 2014. Report by Tripp Umbach.
8 Includes dual-degrees for MDs only. Krupa, C. "Health System Changes Inspire More Med Students to Pursue Dual Degrees." American Medical News. April 23, 2012. http://www.amednews.com/article/20120423/profession/304239962/2/.
9 Louisiana Economic Development (LED). "Louisiana Incentives." http://www.opportunitylouisiana.com/index/incentives.

32 Matrix of Research Trends in Medicine and Potential for Related Dual Degrees in Baton Rouge

Trending Research Area	Potential Combined Degrees for LSU / LSUHSC-BR	Relevant Combined Degrees Offered at LSUHSC New Orleans and LSUHSC Shreveport
DATA-RICH WEARABLE DEVICES Wearable sensors that send data to care providers can help prevent, diagnose and treat disease.	• MD-MS or PhD in Computational Biology • MD-MS or PhD in Biomedical Informatics • MD-MFA in Digital Arts	• MD-PhD in Medicine and Engineering (with Louisiana Tech)
CANCER IMMUNOTHERAPY A person's own immune system can be used to eliminate tumors much more safely than using chemotherapy.	• MD-PhD in Biosciences	• LSUHSC-NO MD-PhD in Microbiology, Immunology & Parasitology • LSUHSC-Shreveport MD-PhD Microbiology and Immunology
GENOME EDITING Precise surgical editing of genes can provide cures for many harmful genetic conditions.	• MD-PhD in Biosciences	• LSUHSC-NO MD-PhD in Human Genetics • LSUHSC-NO MD-PhD in Pharmacology and Experimental Therapeutics • LSUHSC-Shreveport MD-PhD in Pharmacology, Toxicology & Neuroscience
THE HUMAN MICROBIOME The study of bacteria in our guts is leading to new therapies for diseases such as ulcerative colitis.	• MD-PhD in Biosciences	• LSUHSC-NO MD-PhD in Microbiology, Immunology & Parasitology • LSUHSC-Shreveport MD-PhD in Microbiology and Immunology
CELL THERAPY Mutations leading to disease can be cured by injecting a patient with their own repaired cells.	• MD-PhD in Biosciences	• LSUHSC-NO MD-PhD in Cell Biology • LSUHSC-Shreveport MD-PhD in Cellular Biology and Anatomy
PATIENT-CENTERED MEDICAL HOMES Health outcomes can be improved through primary and preventative care that is integrated and accessible.	• MD-MBA in Healthcare Management	----
HEALTHCARE VALUE Quality and efficiency depend on collaboration and streamlined processes in healthcare delivery.	• MD-MBA in Healthcare Management • MD-JD (Law)	----

Source: Recent trends from UCSF. Top Trends in Health and Science for 2014." http://www.ucsf.edu/news/2013/12/110666/top-trends-health-sciences-2014
For LSUHSC-NO dual degree programs, see "Programs." https://www.medschool.lsuhsc.edu/admissions/programs.aspx. For LSUHSC-Shreveport dual-degree programs, see: "Combined Degrees." http://www.lsuhscshreveport.edu/Admissions/CombinedDegrees.aspx.

Rx PRESCRIPTION

The BRHD can support inter-institutional collaborations that advance and expand the education and training of health professionals in the Health District.

2. Build research and education networks to support innovation and workforce growth.

2.1 Continue Task Force on health education and research.
2.2 Catalog and expand professional and education assets.
2.3 Catalog and expand training and CME programs.
2.4 Create a consortium for shared electronic resources.

One of the main themes of the new healthcare economy is seamless exchange of information and knowledge —across sectors, disciplines and practices—towards the common goal of improved patient and community health, delivered at lower costs. The core asset that is needed for this exchange is people: a community of talented and passionate change agents.

The BRHD should aim to build an active community of research practitioners and students that help attract young talent and private funding into the city. This goal cannot be achieved by a single institution alone: it requires input and resources from all partners invested in building a stronger healthcare and research destination.

Today, the traditional boundaries between academic, research and clinical organizations are blurring as community healthcare anchors actively engage in the education and training of future healthcare professionals. The rapid growth in "bench-to-bedside," or translational research, is building new bridges between the lab and the growing number of care settings. With healthcare reform and the transformation of healthcare payment models, the insurance industry will also be a significant partner in fostering partnerships for innovation.

2.1. Continue Task Force on Health Education and Research.

The BRHD planning process has been instrumental in bringing leadership and experts together from all aspects of healthcare to align shared efforts and increase collaboration. The District Task Force was comprised of five specific committees, including the Health Education and Research Committee, which was particularly valuable in fostering inter-institutional dialogue among peers.

The District Task Force was instrumental in the formation of the LSU / LSUHSC partnership around biomedical engineering. (See box on page 98). This dialogue must continue at multiple levels to help District partners identify and act upon similar opportunities in the future. To this end, we recommend that the BRHD continue its support of the District Task Forces as committees reporting to the District Board.

2.2 Catalog and expand professional and educational assets in allied health and other healthcare professions.

Five million allied healthcare providers in the United States work in more than 80 different professions and represent approximately 60% of all healthcare providers. The allied health professions

fall into two broad categories: technicians (assistants) and therapists/technologists. Technicians are trained to assist in procedures and perform various tests using medical devices. Their education typically lasts less than two years. The educational process for therapists or technologists is more intensive and advanced and may include acquiring procedural skills involving sophisticated medical technologies.

A highly-skilled allied health workforce is critical to the day-to-day operations of a successful healthcare cluster. The last decade has seen tremendous growth in demand for allied health professionals, creating a shortage of staff, especially in areas such as nursing. The above-average rates for job growth are expected to continue into the next decade.[1]

With the new spirit of collaboration brought forth by the Health District partners, a real opportunity for coordination around healthcare workforce development exists. The BRHD should survey providers and educators on a regular, ongoing basis to help identify gaps in workforce development for District providers. In addition to direct care providers (such as nurse practitioners), the District should also catalog professionals critical to achieving the District's health goals (such as financial, IT and administrative personnel). The catalog should include:

- Health professionals in the District work force (current demand), and
- Health professionals needed in the District work force (future demand).

The information collected would be beneficial in determining current and future employment requirements and in stimulating development of educational programs for unmet needs. Ongoing coordination will also enable Baton Rouge educational facilities to adapt their curricula and grow their student bodies to match changing nationwide trends in these professions.

2.3 Catalog and expand training and continued medical education (CME) programs.

In addition to surveying educational programs, the BRHD should survey all healthcare providers (e.g., hospitals, clinics, physician offices, retail pharmacies) and training programs to identify the full range of health-related workforce training opportunities available in Baton Rouge.

In addition to identifying workforce gaps and future needs, the information would serve as career guidance and educational resources for individuals coming to Baton Rouge to pursue training or advanced study. The breadth of the District educational and employment opportunities hopefully would encourage professionals to stay in Baton Rouge.

2.4 Create a consortium for shared electronic resources.

Academic and research institutions located in the Health District can create a consortium for shared acquisition and use of electronic resources such as academic databases, electronic journals, videos, and other media.

JOBS GROWTH 2002-2012

46.0%
DIAGNOSTIC MEDICAL SONOGRAPHER

38.4%
PHYSICIAN ASSISTANT

33.7%
NURSE PRACTITIONER

33.3%
DENTAL HYGIENIST

30.3%
MEDICAL EQUIPMENT REPAIRER

A majority of the nation's fastest growing jobs are in allied health.

Source: Bureau of Labor Statistics.

1 "Occupational Employment Projections." Bureau of Labor Statistics. January 2012. http://www.amnhealthcare.com/latest-healthcare-news/workforce-trends-allied-healthcare/.

PRESCRIPTION

Clinical trials growth in Baton Rouge will lead to significant financial benefit for the BRHD partners and support economic development goals of the broader community.

3. Expand clinical trials in Baton Rouge.

3.1 Create a clinical trials consortium.
3.2 Host industry-sponsored clinical trials at the Baton Rouge Diabetes and Obesity Center.

3.1 Create a clinical trials consortium.

A clinical trial consortium (CTC) is a group of organizations devoted to conducting clinical trials in a more streamlined, efficient manner. The level of integration within a CTC varies, depending on the preference of consortium affiliates. Consortium models can consist of low-integration, coordinated efforts (joint committees focus on protocol review, Sharepoint site to share best practices, etc.) to a more integrated, centralized network (single standard for initiating multi-center trials, efforts led by a consortium-funded Executive Director to advocate for consortium goals and lead activities).

Depending on the level of integration, a CTC provides organizations with more seamless interactions, enhances the flow of scientific information across the consortium, and expands capacity to perform more clinical trials. With a CTC, a single point of contact acts as the primary contracting agent for all third-party contracts on behalf of the consortium affiliates. The simplicity it adds to the trial initiation process is particularly attractive to sponsors. Furthermore, a single research informatics database can be used for patient registry, scheduling, and patient record sharing across the affiliate consortium. The projected benefits of having a CTC in Baton Rouge will demonstrate commitment to researching and investigating community-based, patient population specific issues. Our recommendation is to move forward with a coordinated model and progress to a more integrated model with a dedicated Executive Director.

Recommended steps leading to the formation of a CTC in Baton Rouge are as follows:

Step 1: Collectively build infrastructure and coordinate efforts among community-based research entities, university researchers, and industry sponsors to advance clinical research in Louisiana.

In order to attract industry sponsors that offer novel, cutting edge trials, a comprehensive process for initiating and launching trials is imperative. Improving the speed, cost, and delivery of industry studies is the primary goal. Additionally, relationships and alliances that foster a climate of inter-disciplinary collaboration, innovation, and entrepreneurship will lead to significant research growth.

Step 2: Design and launch a searchable directory of clinical research and create other enhanced communication vehicles.

In order to increase awareness and participation in research, inter-organizational and inter-disciplinary communication must be enhanced. This collaboration allows for sharing of specific study information as well as research best practices, operational templates, and tools.

33 Projected Benefits of a Clinical Trials Consortium in Baton Rouge

PROJECTED BENEFIT	DESCRIPTION OF SCENARIO	ASSUMPTIONS	EXPECTED IMPACT ($M, net present value)
Basic science research / NIH grants	New interest in publications makes Baton Rouge more attractive as a basic science research community, increasing outside funding of research in basic science	• Additional $2m in NIH grants in years 2-5, increasing to $5M annually in years 6+ • Margin on basic science ~10% of funds coming in	**$5-10 M**
Growth in patient population	Patients outside Baton Rouge become aware of the opportunities available and seek treatment at local hospitals for all treatments (not just clinical trials)	• 1% increase in total number of patients coming to Baton Rouge across all treatments • Operating margin of hospital ~3%	**$10-20 M**
Attracting top physician talent	Increasing ability to attract physician talent to Baton Rouge (academic and medical students completing program)	• 2 new clinical researchers per year come to Baton Rouge and generate additional revenue (~$1.5M / yr) by seeing new patients	**$15-25 M**

Step 3: Increase physician and patient education and awareness related to clinical trials.

To encourage patient and physician participation, appropriate organizational and operational infrastructures are needed. A formal education, training, and outreach/awareness program for physicians and patients should be created by the future CTC.

3.2 Host industry-sponsored clinical trials at the Baton Rouge Diabetes and Obesity Center (BRDOC).

Pennington Biomedical Research Center, Woman's Hospital, and others are conducting cutting-edge research in diabetes and obesity; however, even with the scale of the problem in the area, finding sufficient patient volume to enroll in trials has been difficult.

The proposed BRDOC (see page 117) provides an opportunity for providers to engage a greater number of patients who can benefit from clinical trials focused on diabetes and obesity. Recommended strategies for increasing clinical trial participation at the BRDOC include:

- Locate the BRDOC at Pennington Biomedical Research Center campus to enable ease of access by PBRC researchers
- Integrate researchers into the BRDOC through targeted programming and facility planning
- Engage technology companies to test digital monitoring and treatment devices at the BRDOC. Opportunities likely exist to form partnerships with these technology companies given the alternative reimbursement models that will be utilized at the BRDOC, and incentives and tax credits that could be provided by Louisiana Economic Development, including the Digital interactive media and software development incentive and the research and development tax credit.[1]

1 "Louisiana Incentives." Louisiana Economic Development website. http://www.opportunitylouisiana.com/index/incentives.

HEALTH CARE INNOVATION

The Baton Rouge Health District will provide a platform for innovation and partnerships that improve health outcomes and quality of life.

HEALTHCARE INNOVATION

DIAGNOSIS

CHIEF COMPLAINT	Healthcare Delivery Focused on Acute Care Rather Than Population Health Management
KEY SYMPTOMS OBSERVED	1. Barriers to Addressing Preventable Chronic Disease in the Community 2. Lack of Coordination in the Delivery of Patient Care
VITAL SIGNS	1 in 3 Medicare Patients in Baton Rouge Have Diabetes Louisiana Ranks 37th among All States in Supply of Primary Care Physicians (PCPs) Diabetes and Obesity in Baton Rouge Amount to $1.5 Billion in Healthcare Costs Annually
ASSESSMENT	Healthcare providers need new tools and greater coordination to address the chronic disease burden in Baton Rouge.

TREATMENT PLAN

PRIORITY INTERVENTIONS	Establish the Baton Rouge Diabetes and Obesity Center (BRDOC).
PRESCRIPTIONS	1. Incorporate the BRDOC into a Medical Home model. 2. Integrate and coordinate services to improve care.
FOLLOW-UP TESTS (ANNUAL CHECK UP)	Emergency Room and Inpatient Utilization Prevalence of Diabetes and Obesity in the Community Number of People Reached Through Health Education and Wellness Services
EXPECTED OUTCOME	Improved Capacity for Chronic Disease Prevention and Promoting Health in the Community

HEALTH CARE INNOVATION

Diagnosis

CHIEF COMPLAINT

Healthcare Delivery Focused on Acute Care Rather Than Population Health Management

The lack of focus on population health management is an outcome of the following symptoms observed in the Health District:

1. Barriers to Addressing Preventable Chronic Disease in the Community
2. Lack of Coordination in the Delivery of Patient Care

Photo: Project Fit America Kickoff Event. HealthyBR.com.

KEY SYMPTOMS OBSERVED

Diabetes and obesity in Baton Rouge have significant human, societal, and economic impacts, and must be addressed through innovative, community-scale solutions to healthcare delivery.

1. Barriers to Addressing Preventable Chronic Diseases in the Community

The U.S. healthcare industry is undergoing the transformation of a century to better align its services to the health needs of our communities, and to improve the quality and cost of care. Preventable chronic diseases, which constitute 86% of nationwide healthcare spending and account for seven out of ten deaths,[1] are in the crosshairs of the healthcare reform movement. Individual choices such as poor diet and sedentary lifestyle are increasingly targeted by healthcare providers and payors seeking to curb the rise of chronic disease in communities that they serve.

High Prevalence of Preventable Chronic Disease in Baton Rouge and Louisiana

In Louisiana, as elsewhere across the nation, the slow pace of change does not reflect the urgency of the health needs in the broader population. The prevalence of obesity—a root cause for many preventable chronic diseases—has doubled since 1990 in Louisiana and currently stands at 33.1%: one of the highest rates in the nation (Figure 34).[2] At current rates of increase, Louisiana is expected to double the number of obese adults by the year 2030.[3]

The prevalence of diabetes in Louisiana has also increased steadily from 6.6% in 2000 to 10.3% in 2010. Lower socio-economic status is correlated with a significant increase in disease risk: close to 20% of residents in the lowest tier of income had diabetes as opposed to 6% among the highest tier. In 2013, 11.6% of Louisianans had diabetes, with only Alabama, Mississippi, and West Virginia having higher percentages.[4] East Baton Rouge is one of 644 counties located in the CDC-identified "Diabetes Belt", which extends from Louisiana towards the East Coast (Figure 35).[5]

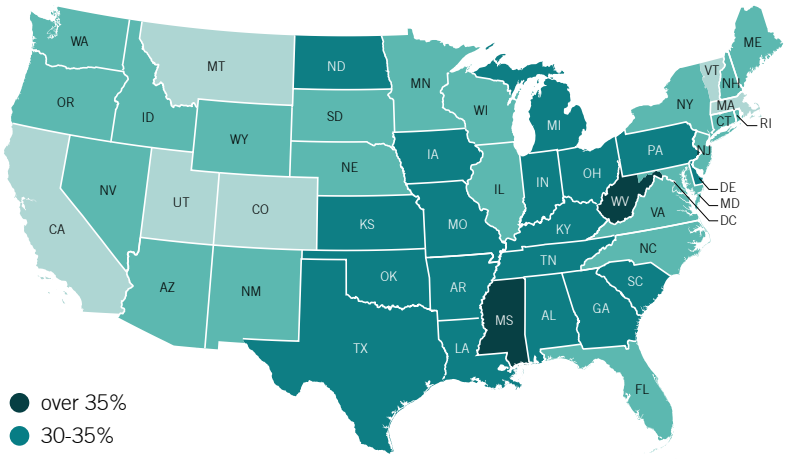
The 2015 East Baton Rouge Community Health Needs Assessment, completed by Healthy BR in partnership with healthcare anchor institutions, identifies negative lifestyle/behaviors, obesity, and obesity-related chronic diseases including diabetes, heart disease/stroke, and cancer among the top ten community health needs. Obesity was listed as one of the top four priorities to be addressed by Healthy BR along with overuse of emergency departments, HIV and other STDs, and mental health and substance abuse.[6]

Economic Impacts of Chronic Disease

In addition to significant human and societal costs, epidemics of chronic disease also have wide-ranging economic impacts for the local community. In Baton Rouge, the annual healthcare cost attributed to obesity and diabetes alone is estimated at $1.5

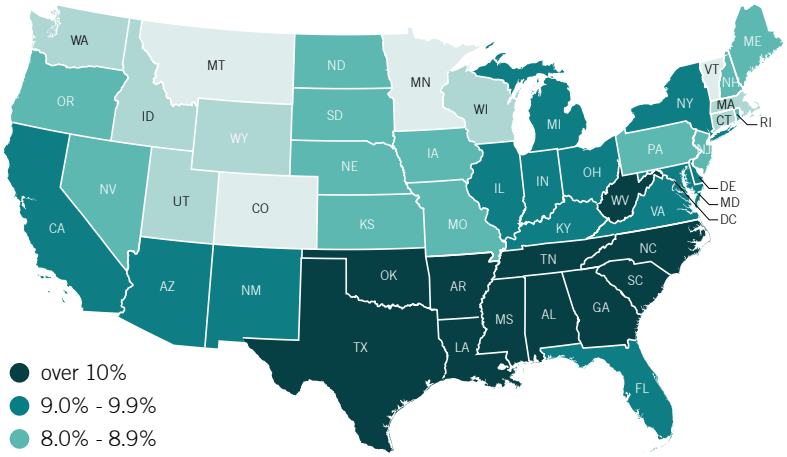
1 "Chronic Disease Prevention and Health Promotion." CDC. http://www.cdc.gov/chronicdisease/index.htm.
2 "Obesity Prevalence Maps." CDC. http://www.cdc.gov/obesity/data/prevalence-maps.html.
3 "The State of Obesity in Louisiana". http://stateofobesity.org/states/la/.
4 "2012 Louisiana Diabetes Factsheet". Louisiana Department of Health and Human Services. http://new.dhh.louisiana.gov/assets/oph/pcrh/diabetes/2012_Louisiana_Diabetes_Factsheet.pdf.
5 "CDC Identifies Diabetes Belt." CDC. http://www.cdc.gov/diabetes/pdfs/data/diabetesbelt.pdf.
6 2015 Community Health Needs Assessment, East Baton Rouge Parish. 2015. Healthy BR. http://healthybr.com/community-health-needs-assessment.aspx. Healthy BR, also known the Mayor's Healthy City Initiative, is a collaboration of over 40 health organizations working to improve the health of Baton Rouge citizens.

34 Prevalence of Self-reported Obesity Among Adults, by State, 2013



Source: U.S. Centers for Disease Control and Prevention (CDC).

35 Prevalence of Diagnosed Diabetes Among Adults, by State, 2013



Source: CDC. http://www.cdc.gov/diabetes/atlas/obesityrisk/atlas.html

LOUISIANA RANKS #6

among all states in prevalence of adult obesity.

1 IN 3 ADULTS

in Louisiana are obese, or have a self-reported BMI of 30 or higher.

1 IN 10 ADULTS

in Louisiana have been diagnosed with diabetes.

19.5%

the prevalence of obesity among Louisiana residents making less than $15,000 per year.

$1.5 BILLION/YR

estimated cost of treating diabetes and obesity in the Baton Rouge area.

billion.[7] This exorbitant cost has adverse effects on individuals, employers, healthcare providers and payors. Even small reductions in the prevalence of these chronic conditions can create the potential for significant savings that can be shifted towards health and wellness programs.

Best Practices in Chronic Disease Prevention

The U.S. Centers for Disease Control and Prevention has identified the following four domains for chronic disease prevention:[8]

1. Epidemiology and surveillance to monitor trends and track progress;
2. Environmental approaches to promote health and support healthy behaviors;

7 For Baton Rouge metropolitan area. Obesity estimated based on Cawley, J et al. 2012. "The Medical Care Costs of Obesity: An instrumental Variables Approach." Journal of Health Economics. http://www.nber.org/papers/w16467. Diabetes estimated based on "Economic Costs of Diabetes in the US." 2012. American Diabetes Association. http://www.diabetes.org/advocacy/news-events/cost-of-diabetes.html.

8 "The Four Domains of Chronic Disease Prevention." CDC. http://www.cdc.gov/chronicdisease/pdf/four-domains-factsheet-2015.pdf.

3. Healthcare system interventions to improve the effective delivery and use of clinical and other high-value preventive services; and
4. Community programs linked to clinical services to improve and sustain management of chronic conditions.

Challenges in Successful Population Health Management

In Baton Rouge, public health, healthcare, and community partners engaged in the Mayor's Healthy City Initiative have advanced initiatives largely focused on the second domain described above. The BRHD provides an opportunity to expand these efforts into healthcare through data sharing and partnership initiatives in population health management. The inefficiency of primary care networks, lack of financial alignment, and challenges in access to care pose barriers to successful implementation of such initiatives in the near term. These challenges are described in detail on the following pages.

Inefficient Primary Care Networks

The shortage of primary care physicians and the inefficiency of primary care networks is one of the key challenges to population health management in Louisiana and Baton Rouge.

Louisiana ranks 37th among all states in primary care physician (PCP) supply (Figure 36). Most primary care providers (PCPs) in the state do not have the resources or bandwidth to effectively manage the care of patients suffering from obesity and/or diabetes.

A community-integrated primary and preventative care network can provide cost-effective and convenient approaches for the diagnosis, prevention, and management of preventable chronic diseases in comparison to office visits. The high rates of inpatient utilization (hospital use) recorded in Louisiana indicate that the state lacks an efficient primary and preventative care network that can keep patients out of the hospital (Figure 367). The Commonwealth Fund has ranked Louisiana last among all states in potentially avoidable hospital use and cost.[9]

Lack of Financial Alignment

Under today's fee-for-service business model, financial incentives perversely promote focus on sick care: hospitals and specialists financially benefit when patients get worse and interventions are required. Few financial incentives support innovative delivery methods such as virtual consultations. While some U.S. payors and providers are taking steps to advance alternative delivery models, investment in primary and preventative care programs significantly lags spending in acute care across the US.[10]

Barriers to Healthcare Access

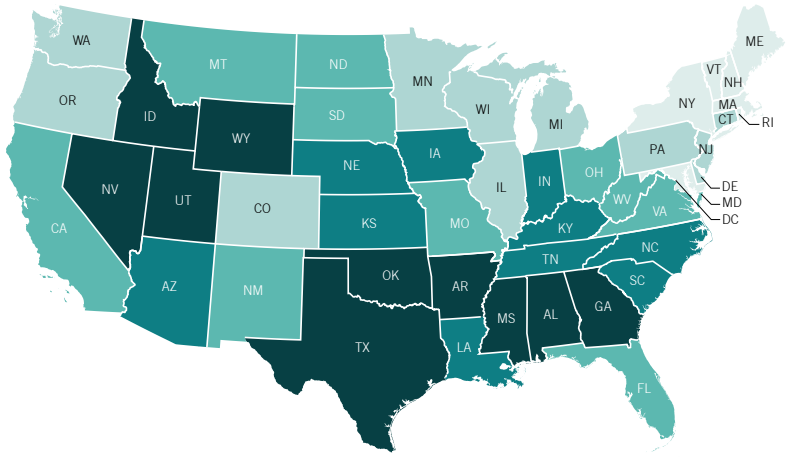
Beyond systemic factors related to healthcare in Louisiana, Baton Rouge residents also face barriers to accessing care due to lack of insurance coverage and transportation options.

In 2013, Louisiana had a slightly lower percentage of uninsured residents (12%) than the nationwide median (13%).[11] Based on these statewide percentages, up to 100,000 residents are currently uninsured in the Baton Rouge metropolitan area.[12] At this time, the state has opted out of Medicaid expansion, which would provide coverage to over 190,000 uninsured Louisiana residents who are currently in a coverage gap.[13] Uninsured patients are more likely than those with private health insurance or a public health plan to use costly emergency room services in place of primary care, creating undue financial burden for healthcare providers.[14]

For much of the low-income and at-risk population in Baton Rouge, appropriate care can also be physically difficult to access. Traffic issues, lack of transportation options, and appointment availability during non-work hours can become barriers to access that disproportionately impact those residents who do not have access to a car.

9 Commonwealth Fund Scorecard on Local Health System Performance, 2014. http://datacenter.commonwealthfund.org/scorecard/state/20/louisiana/.
10 "U.S. Health System Ranks Last Among Eleven Countries on Measures of Access, Equity, Quality, Efficiency, and Healthy Lives." The Commonwealth Fund. http://www.commonwealthfund.org/publications/press-releases/2014/jun/us-health-system-ranks-last.
11 Kaiser Family Foundation State Health Facts. http://kff.org/other/state-indicator/total-population/
12 Calculated from 2013 population estimate of 820,000 residents for the Baton Rouge Metropolitan area, U.S. Census Bureau.
13 Alpert, Bruce. "1 in 3 of Louisiana's uninsured in Obamacare 'coverage gap'." October 13, 2015. http://www.nola.com/politics/index.ssf/2015/10/13_of_louisianas_uninsured_in.html.
14 Gindi, R. et al. "Emergency Room Use Among Adults Aged 18–64." Centers for Disease Control and Prevention. http://www.cdc.gov/nchs/data/nhis/earlyrelease/emergency_room_use_january-june_2011.pdf.

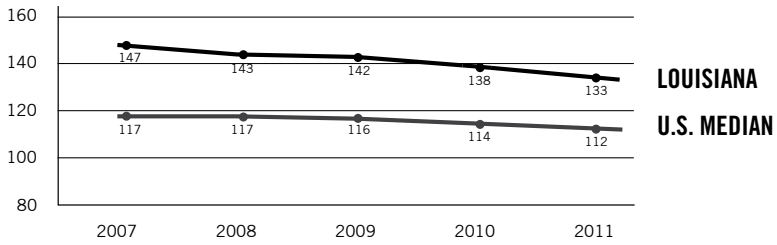
36 Primary Care Physician (PCP) Supply per 100,000 Population, 2013



63.3 - 77.4 | 77.5 - 84.7 | 84.8 - 94.3 | 94.4 - 105.9 | 106 - 245.8

Source: AAMC. 2013 State Physician Workforce Data Book.

37 Inpatient Utilization Rates per 1,000 Medicare Beneficiaries



Source: Kaiser Family Foundation State Health Facts. 2007-2011.

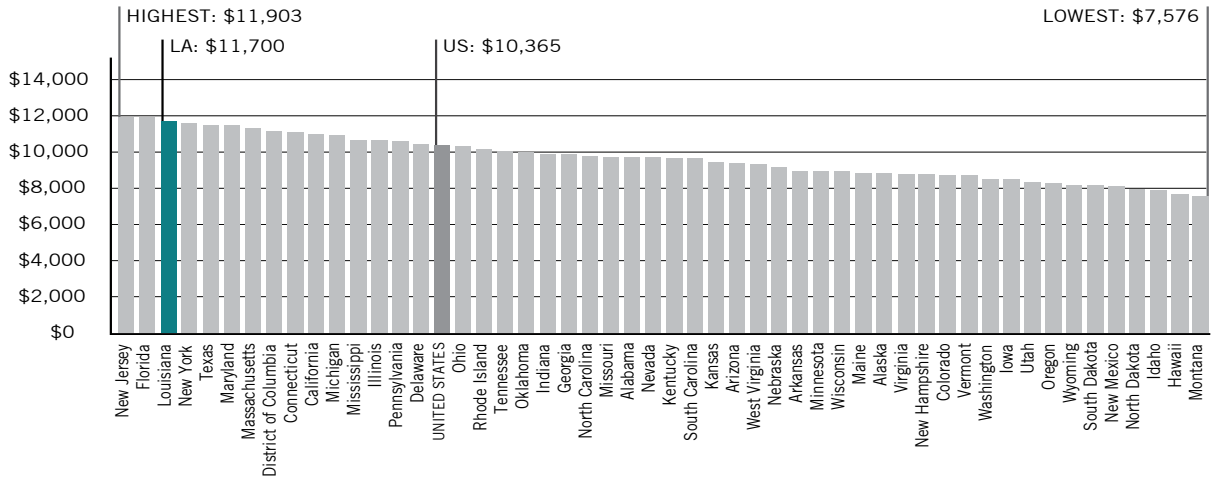
LOUISIANA RANKS 37TH
among all states in primary care physician supply.

LOUISIANA RANKS LAST
among all states in hospital use and costs that are avoidable through primary and preventative care.

100,000
residents are uninsured in the Baton Rouge metropolitan area.

LOUISIANA IS 3RD HIGHEST
in per enrollee Medicare spending among all states.

38 Per Enrollee Medicare Spending, 2009



Source: Kaiser Family Foundation State Health Facts. 2007-2011.

KEY SYMPTOMS OBSERVED

Baton Rouge healthcare providers have unique opportunities for coordination in preventative and post-acute care to improve quality and cost outcomes.

2. Lack of Coordination in the Delivery of Healthcare

The Shift Towards Care Coordination and Integration

Economic, demographic, and regulatory pressures are driving a paradigm shift that will fundamentally change the way healthcare is delivered in the future. The change will result from insurers in the U.S. changing the payment structure for healthcare. The current fee-for-service, volume-based payment model is being gradually abandoned in favor of value-based payment models, which promote coordination and integration of care to improve quality and cost outcomes.

The Institute of Medicine defines integrative care as "a healthcare system that focuses on efficient, evidence-based prevention, wellness, and patient-centered care that is personalized, predictive, preventive and participatory."[1] In 2010, the Patient Protection and Affordable Care Act ("Affordable Care Act," or "ACA") brought forth regulatory mandates and incentives to address inefficiencies in the U.S. healthcare industry, starting with the lack of coordination and information-sharing among healthcare providers serving the same patient.

Under the ACA, Medicare is currently testing the Accountable Care Organization (ACO) model of healthcare delivery, which incentivizes groups of providers to coordinate patient care across the care continuum. (See Figure 39 on page 115). ACOs that demonstrate improved patient outcomes are rewarded, while those that fail to achieve this goal are penalized. First year results from early adopters show promise: 32 pioneer groups who piloted the ACO model were, as a collective, able to hamper cost increases and generate $33M in savings for Medicare.[2]

Value-based payment models are expected to fundamentally transform the current fee-for-service environment in healthcare, with more payors focusing on quality and outcomes in the following decades.[3] Market forces are already changing the face of healthcare with a growing number of mergers and consolidations driven by a quest for greater efficiency and financial stability.[4]

Opportunities for Coordinated Healthcare Delivery in Baton Rouge

Baton Rouge has strong healthcare anchors with significant competition for the growing patient base in the metropolitan area. This competition, however, is largely focused on the delivery of acute care services. Opportunity exists for coordination and, where desired, integration of less competitive services within the sub-acute (preventive care) and post-acute segments of the healthcare market.

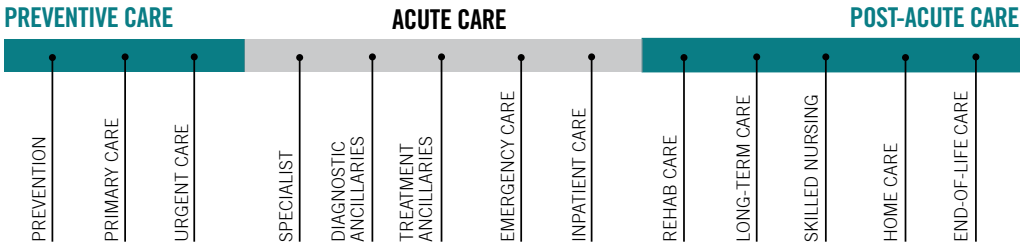
1 "Integrative Medicine and the Health of the Public: A Summary of the February 2009 Summit." Institute of Medicine. http://www.iom.edu/Reports/2009/Integrative-Medicine-Health-Public.aspx.

2 Bunis, D. "Pioneer Accountable Care Organization First-Year Results Include Savings and Losses." CQ HealthBeat, July 22, 2013. http://www.commonwealthfund.org/publications/newsletters/washington-health-policy-in-review/2013/jul/july-22-2013/pioneer-aco-first-year-results.

3 The National Commission on Physician Payment Reform, a bipartisan senate organization, has prepared a plan to phase out of the fee-for-service model by 2020. See: "Commission advocates ending fee-for-service system." Politico. March 4, 2013. http://www.politico.com/story/2013/03/commission-advocates-ending-fee-for-service-88348.html#ixzz39YPn79z2.

4 Evans, M. "Consolidation creating giant hospital systems." Modern Healthcare. June 21, 2014. http://www.modernhealthcare.com/article/20140621/MAGAZINE/306219980.

39 Healthcare Services Across the Continuum of Care



Opportunity for Increased Clinical Data Sharing to Optimize Care and Advance Research

The high levels of inpatient and emergency room utilization recorded in the state of Louisiana point to a weak sub-acute care network that is not efficient in the prevention and management of chronic disease in the population (Figure 37). The BRHD healthcare anchors have an opportunity to improve on the local preventive care network, not only to reduce unnecessary utilization but to also help improve overall health. To do so, however, requires a "big picture" view of specific conditions that are being targeted for prevention.

The sharing of clinical data for population health benchmarking and analysis is a prerequisite to the coordination of preventive care in Baton Rouge. Successful population health initiatives depend on the availability of baseline data that provide a snapshot of health indicators across different age and demographic groups. The adoption of electronic health records by Health District partners has created a significant repository of information on the health of Baton Rouge patients that could be compiled for research and analysis.

LSUHSC and Louisiana Health Care Quality Forum are leading two separate efforts to warehouse clinical data submitted by participating Louisiana healthcare providers. With more data transparency and sharing, providers can align their services to community health needs, and initiate partnerships to advance healthcare access and delivery.

Opportunity for More Efficient Post-Acute Care Delivery

Post-acute care includes the range of continued medical services that patients receive at home or in a specialized facility following a hospitalization for injury or illness. Quality post-acute care can significantly improve patient outcomes and prevent costly rehospitalizations (readmissions). The cost of readmissions is compounded by financial penalties imposed on providers through Medicare's Hospital Readmissions Reduction Program, which have been escalating.

Nationwide, costs for post-acute services have grown to almost 19% of Medicare's total spend ($62 Billion).[5] Louisiana is one of the highest utilizers of post-acute services in the country. The high levels of utilization, however, are not correlated with desired outcomes: Baton Rouge currently ranks in the bottom quartile in the country for readmission rates, which imposes a significant financial burden on Health District providers.[6]

The high level of fragmentation observed in the Baton Rouge post-acute care market is a barrier to care coordination between providers, making it difficult to keep track of patients' progress once they leave the hospital. A recent analysis by the Institute of Medicine (IOM) shows that almost three quarters of the variation in total Medicare spending is due to utilization of post-acute care services,[7] and that hospital referral regions with high spending in post-acute care tend to have high spending overall.[8] Health District providers have an opportunity to coordinate their post-acute referrals and services to ensure consistent, high-quality care is delivered to their patients.

5 Chandra, et al. " Large increases in spending on post-acute care in Medicare point to the potential for cost savings in these settings." Health Affairs. May 2013. http://www.ncbi.nlm.nih.gov/pubmed/23650319.

6 Commonwealth Fund. 2012. Scorecard on Local Health System Performance. http://www.commonwealthfund.org/publications/fund-reports/2012/mar/local-scorecard.

7 Institute of Medicine. 2013. "Variation in Health Care Spending: Target Decision Making, Not Geography." http://iom.nationalacademies.org/Reports/2013/Variation-in-Health-Care-Spending-Target-Decision-Making-Not-Geography.aspx.

8 Institute of Medicine. 2013."Geographic Variation in Spending, Utilization and Quality: Medicare and Medicaid Beneficiaries." http://iom.nationalacademies.org/~/media/Files/Report%20Files/2013/Geographic-Variation/Sub-Contractor/Acumen-Medicare-Medicaid.pdf.

HEALTH CARE INNOVATION

Treatment Plan

PRIORITY INTERVENTION

Establish the Baton Rouge Diabetes and Obesity Center (BRDOC).

TIMEFRAME
2-5 Years

LEADS
Blue Cross Blue Shield of LA
Pennington Biomedical Research Center
Key Anchor Institutions

KEY FUNDING SOURCES
Anchor Institution Contributions
Grants
Private Sector Support

FUNDING NEEDED
Short-term: $500,000 for the business plan
Long-term: TBD

DISTRICT ROLE
Coordination
Advocacy

NEXT STEPS
Complete the BRDOC Business Plan to determine: current market dynamics; mission, vision, and goals for the organization; DOC's social and economic impact within the District and/or in southeastern Louisiana; estimated ROI for owners; and, implementation plan

The BRHD has an opportunity to reduce diabetes and obesity in Baton Rouge through a collaborative center that can become a national model.

The BRHD has identified the opportunity for collaboration between the area payors, hospitals, clinics, public health organizations, and Pennington Biomedical Research Center to provide a cutting-edge center for patients with or at risk of developing diabetes and obesity. The mission of the Baton Rouge Diabetes and Obesity Center (BRDOC) is "to enhance the wellness and quality of life of our region through promoting healthy behavior, education, and research, providing holistic care, and empowering people that have or are at risk of developing diabetes and obesity to take control of their health."

Integration with primary care and specialty care clinics is critical so as not to compete with services they provide but to incorporate behavioral and preventative practices into their patients' treatment regimen. As such, proposed components of the BRDOC include:

- Medical home services
- Integration with primary care providers
- Telehealth for consults, treatment, and patient education
- Utilization of new, innovative technology
- One-stop-shop for specialty care
- Wellness and prevention programs
- Integration of data analysis
- Public health initiatives
- Active policy advocacy
- Clinical trials and research

Due to the innovative nature of this facility, changes in current reimbursement models will be necessary. One of the largest payors in the state has committed to evolving the payment mechanisms away from a fee-for-service model toward value-based reimbursement. This process will take time and resources; the BRHD leadership should continue collaborating with payors to advocate for this new payment methodology. The BRDOC will need to continue to engage other state and national insurers to collaborate in the care of this population, including the managed Medicaid organizations.

The BRDOC will offer innovative, holistic care while encouraging strong collaboration from institutions typically seen as competitors. Progress will be measured by decreases in the incidence and prevalence of diabetes and obesity, over-utilization of inpatient services, unnecessary emergency room visits, and readmission rates.

The BRDOC can also have a significant financial impact that supports the long-term sustainability of the area's healthcare providers. Currently, an estimated $1.5B is spent annually in Baton Rouge in healthcare costs related to diabetes and obesity. A 2% reduction in the prevalence of these preventable conditions across the population would result in $30M cost savings annually.[1] Capturing some of the value from these cost reductions could likely fund much of the ongoing operations of the BRDOC.

1 Calculated based on the methodology described in Cawley, J. and Meyerhoefer, C. "The Medical Care Costs of Obesity: An Instrumental Variables Approach." The National Bureau of Economic Research. No. 16467, October 2010.

VISION

THE BATON ROUGE DIABETES AND OBESITY CENTER (BRDOC)

40 Precedent Images Illustrating Planned BRDOC Services

Precedent images from Juanita J. Craft Recreation Center / Diabetes Health and Wellness Institute in Dallas, Texas. (See box on page 122 for details).

The BRDOC will be a community resource center supported by the healthcare and academic community to reduce the prevalence of obesity, and advance the management and treatment of diabetes.

mobile farmstand

collaboration with community health programs

personalized plans for health improvement

cooking and nutrition workshops

Rx PRESCRIPTION

The BRDOC can implement emerging best practices in primary and preventative care to reduce the prevalence of diabetes and obesity in Baton Rouge.

1. Incorporate the BRDOC into a Medical Home model.

1.1 Facilitate patient access to services.
1.2 Provide wellness services.
1.3 Work with payors and employers to expand access.
1.4 Provide resources for Primary Care Physicians.
1.5 Share clinical data to advance population health initiatives and track outcomes.

The Baton Rouge Diabetes and Obesity Center (BRDOC) is an opportunity for Health District partners to jointly address shortcomings in primary and preventative care in the Baton Rouge area. The BRDOC should adopt the Medical Home model that has been advanced by the U.S. medical community during the last decade. (See box below).

While these services currently exist in the community, their coordination can significantly improve patient experience and outcomes. Specific elements of the Medical Home model for the BRDOC are described below.

1.1 Facilitate patient access to services.

One of the goals of the Medical Home model is to provide a high standard of care and ensure access to all patients. The BRDOC can facilitate patient access by offering extended hours and providing enhanced transportation opportunities for patients. Childcare can be provided at the Center to enable patients with children flexibility in using the services. Opportunities to locate select key services closer to patient populations can also be investigated. Another key strategy is to implement telemedicine for consult and follow-up care and to use digital monitoring technologies to increase convenience.

THE MEDICAL HOME MODEL

A "Patient-Centered Medical Home" (PCMH or "Medical Home") is not simply a place, but a coordinated network that delivers the core functions of primary healthcare. It is intended to provide convenient patient access to a large majority of the patient's physical and mental healthcare needs ranging from prevention to chronic disease management in a coordinated and personalized manner.

"*Today's medical home is a cultivated partnership between the patient, family, and primary provider in cooperation with specialists and support from the community. The patient/family is the focal point of this model, and care must be accessible, family-centered, continuous, comprehensive, coordinated, compassionate, and culturally effective.*"

—U.S. Department of Health and Human Services, Health IT and Quality Improvement Toolbox

41 Four Service Components of the Proposed Baton Rouge Diabetes and Obesity Center (BRDOC)

1.2 Provide wellness services.

Health District partners can advance primary and preventative care in the community by jointly providing wellness-related services at the BRDOC that are not currently co-located with or provided in coordination with acute care or disease management services for patients with diabetes and obesity. The facilities and programs offered at the BRDOC should include, but are not limited to:

- fitness area where physiologists can demonstrate personalized training regimens and hold fitness classes;
- demonstration kitchen where patients can learn about healthy eating and cooking;
- premade meal station where patients can pick up healthy meals; and
- child education and play area where kids can learn about healthy lifestyles while their parents are attending appointments.

A leading example of such a facility comes from Dallas, where Baylor Health Care System Foundation partnered with the City of Dallas Parks and Recreation Department to renovate an aging recreation center to include a Diabetes Health and Wellness Institute (DHWI). The DHWI takes diabetes care, diagnosis, and prevention programs to the heart of the Frazier community in South Dallas where high rates of diabetes and lack of access to diabetes care were manifest in the state's highest rates for diabetes-related hospitalization. The co-location of the DHWI with the Juanita J. Craft Recreation Center enables coordination of patient care with multi-generational wellness programming including fitness, health education, healthy cooking classes, after school programs, and youth camps.[1]

A BRDOC pilot facility located within the District can likewise take advantage of existing health and wellness programming provided by BREC and community groups at the adjacent Perkins Road Community Park. Wellness programming can be expanded to the Health Loop trails, which will be connected to both PBRC and Perkins Road Community Park. Health and wellness support can also be delivered to patients with the use of customized mobile apps that communicate with the patient's tracking devices.

1.3 Provide resources for Primary Care Physicians (PCPs).

The BRDOC is not intended to compete with existing providers of primary and preventative care. The goal is to provide complimentary resources to PCPs, obstetricians, and endocrinologists in the community and work with them to integrate wellness support services to the care they provide for patients with diabetes and obesity and those at risk.

The BRDOC will house behavioral therapists, dieticians, health coaches, patient navigators/care coordinators, social workers, physiologists, trainers, and technicians to assist patients in achieving their health goals.

Physician extenders will also be made available to PCPs who do not have the bandwidth to provide follow-up care for patients with diabetes and obesity. Incentives will be developed for PCPs to engage in the Center's programs and enroll their population at risk for obesity and/or diabetes.

With its connections to academic and research assets at the PBRC and LSUHSC, the BRDOC is also expected to function as a center of excellence that educates providers on new research and evidence-based best practices in the treatment of patients.

1 The DHWI is part of Baylor's Diabetes Equity Project, which was made possible with funding from the Merck Company Foundation. "Diabetes Health and Wellness Institute." Baylor Healthcare System Website. http://www.baylorhealth.edu/CommunityOutreach/Pages/DiabetesHealthandWellnessInstitute.aspx.

1.4 Work with payors and employers to expand access.

It is expected that the future Baton Rouge Diabetes and Obesity Center will be supported by insurers, state and federal government (Medicaid & Medicare), private foundations and Health District providers. To be effective as a population health initiative, the BRDOC will need to expand its services to a broader base of patients. This can be accomplished by working with other payors (non-patient entities that finance or reimburse the cost of health services) and large employers. Recommended strategies to expand access include:

- actively engaging employers who have employees that could benefit from the Center's services;
- working with payors to enroll patients who would benefit from the Center's services and to identify locations where community efforts should be focused;
- accessing and utilizing claims data for enrolled members to ensure they are receiving proper care; and
- determining payment arrangements that encourage wellness, prevention, and alternative treatments such as telemedicine.

1.5 Share clinical data to advance population health initiatives and track outcomes.

The BRHD can lead the effort to promote increased collection, sharing, and use of clinical data from participating partners to provide baseline information for population health research and initiatives implemented or coordinated by the BRDOC.

All major health systems in Baton Rouge must participate with robust data streams over multiple years for this initiative to have a meaningful impact. In the long-term, electronically warehoused clinical data can be used to measure the effectiveness of the BRDOC and specific initiatives aimed at reducing the prevalence of diabetes and obesity in the population. Data collected over time can also be used in longitudinal analyses that can inform the design and implementation of future programs and initiatives.

CASE STUDY: DIABETES HEALTH AND WELLNESS INSTITUTE / JUANITA J. CRAFT RECREATION CENTER, DALLAS, TX

The innovative Diabetes Health and Wellness Institute (DHWI) is the cornerstone of Baylor Healthcare System's Southern Sector Health Initiative, which seeks to improve care for people with diabetes in South Dallas by creating a "family-centric" model that focuses on healthcare, education and research.

DHWI is located at the Juanita J. Craft Recreation Center in the Frazier neighborhood in South Dallas, which has the highest rates of diabetes, cardiovascular disease, cancer and stroke in the city. Baylor renovated the Center in partnership with the City in 2010. The 25,000 sq. ft. facility includes a gymnasium, fitness room, aerobics rooms, and a game room, as well as classrooms, administrative offices, exam rooms, and a teaching kitchen used primarily by the Institute.

DHWI's goal is to "improve the lives of those at risk for developing diabetes or who have been diagnosed with the disease." Towards this goal, the Institute offers registered members programs in diabetes education, screening, disease management, and nutrition counseling. There are 2,100 patients enrolled at the Institute, which has reached 12,000 people with its free lifestyle classes (cooking, exercise) and community events. The Institute operates on four fundamental principles:

- collaborative financial support and governance;
- integration of social, cultural, political, and economic initiatives;
- clinical care in the neighborhood;
- and community-based, multidisciplinary research.

The outcome is not only improved health in a medically underserved population but also long-term cost and capacity savings for the Baylor Health Care System, where close to a third of hospital admissions system-wide are linked to diabetes. Baylor's diabetes initiatives are partially funded by the Merck Company Foundation's Alliance to Reduce Disparities in Diabetes Healthcare.

For further information, see:

Diabetes Health and Wellness Institute Website. http://www.dhwidallas.com/

"Diabetes Health and Wellness Institute." Baylor Online Newsroom. http://media.baylorhealth.com/pages/diabetes-health-wellness-institute. See also http://www.baylorhealth.edu/CommunityOutreach/Pages/DiabetesHealthandWellnessInstitute.aspx

Rx PRESCRIPTION

Integration of clinical data and post-acute care can advance healthcare delivery, efficiency and quality in the BRHD.

2. Integrate and coordinate services to improve care.

2.1 Advance clinical data sharing and warehousing at the community scale.
2.2 Integrate post-acute care services in the community.

Competition among healthcare providers in Baton Rouge is healthy for the market, but for some areas outside of the providers' core business, collaboration may be a better strategy. Reasons for collaboration include:

- achieving economies of scale to have a meaningful impact on population health while reducing per-unit costs;
- sharing of information to give a more complete picture of how patients utilize the healthcare system and to reduce the potential for patients to slip through the cracks;
- addressing underserved need that is too significant for a single provider to address; and
- increasing competitiveness of local clusters against regional competition.

2.1 Advance clinical data sharing and warehousing at the community scale.

"Big Data" is one of the buzz-words of the 21st century: it refers to routinely collected or generated digital data that can be analyzed computationally to reveal patterns, trends and associations, leading to improved processes or products. In healthcare, Big Data primarily refers to the wealth of patient data that is compiled on Electronic Health Records (EHRs), although wearable devices are quickly becoming significant sources of patient health information.

There are two levels at which Big Data is expected to transform healthcare in the near future. The first is the sharing of patient data among a network of providers that treat the same patient, which results in improved diagnostics and treatment, with less room for errors and duplication of services. In the patient-centered future of healthcare, this collaborative is also expected to include the patient, enabling blood sugar monitors, fitness trackers, and other medical devices to upload data onto medical records via a secure internet connection, with the possibility of real-time interventions to prevent negative health episodes.[1]

The second is the collection and warehousing of patient data from a multitude of providers in a given community. Stripped of individual identifiers in order to protect patient privacy, warehoused clinical data can be mined computationally to identify areas for improvement in healthcare delivery, disease management and prevention. Data collected at this level can be used in conjunction with socio-economic and built environment data to help providers predict and prevent disease outbreaks.

The BRHD as a platform has opportunities to advance both types of data sharing—across networks and at the community scale—to align

1 Marr, B. "How Big Data is Changing Healthcare." Forbes. April 21, 2015. http://www.forbes.com/sites/bernardmarr/2015/04/21/how-big-data-is-changing-healthcare/.

healthcare services with the needs of individual patients and populations. The proposed BRDOC can serve as a pilot study for community-wide data sharing on select indicators, paving the way for higher levels of data integration. (See Section 1.5 on page 118.)

2.2 Integrate post-acute care services in the community.

Strong drivers for collaboration exist among District partners to develop an integrated network for post-acute delivery:

- Costs for post-acute services have grown to almost 11% of Medicare outlays at $62 Billion nationally.[2]
- Baton Rouge is in the bottom quartile in the country for high readmission rates.[3]
- Louisiana is one of the highest utilizers of post-acute services in the country and there is significant variation in use of post-acute services.[4]
- 73% of variation in total Medicare spending is due to utilization of post-acute care services. Hospital referral regions with high spending in post-acute care tend to have high spending overall.[5]

Planning for integrating post-acute care is still at a nascent state. Three governance models need to be explored with the first providing the least resource commitment and level of integration and the third requiring the most. These options are illustrated in Figure 43 on page 125.

Much like in diabetes and obesity care, incentives are misaligned in post-acute care services. The model is largely fee-for-service, but that is changing as insurance companies try to manage expenses. Medicare is looking to move payments toward a bundled payments model "which links payments for multiple services beneficiaries receive during an episode of care."[6] While the healthcare business is moving towards greater integration, there are currently no precedents for post-acute care integration at the community scale. The BRHD can serve as a model for innovation that other communities can adopt.

2 " Medicare Seeks To Curb Spending On Post-Hospital Care." Kaiser Health News. December 1, 2013. http://khn.org/news/post-acute-care-medicare-cost-quality/.

3 See readmission rates for Baton Rouge Hospital Referral Region at http://www.whynotthebest.org/.

4 Kutscher, Beth. "Latest CMS data drop shows regional variation in spending on inpatient, post-acute care." Modern Healthcare. June 3, 2014. http://www.modernhealthcare.com/article/20140603/NEWS/306039939

5 "Variation in Health Care Spending: Target Decision Making, Not Geography." 2013. Institute of Medicine. https://iom.nationalacademies.org/Reports/2013/Variation-in-Health-Care-Spending-Target-Decision-Making-Not-Geography.aspx.

6 Centers for Medicare and Medicaid Services. "Bundled Payments for Care Improvement (BPCI) Initiative: General Information." http://innovation.cms.gov/initiatives/Bundled-Payments/index.html.

CASE STUDY: PITTSBURGH HEALTH DATA ALLIANCE

University of Pittsburgh Medical Center (UPMC), the University of Pittsburgh (Pitt), and Carnegie Mellon University (CMU) have recently formalized an alliance to use health data to advance new technologies, products and services that transform healthcare.

The collaboration aims to build on the strengths of each institution—UPMC's clinical data and commercialization expertise, CMU's computer science programs, and Pitt's health science research programs—at new research centers at CMU and Pitt that will be funded by UPMC. For further information, see:

"Pitt, CMU, UPMC Form Alliance to Transform Health Care through Big Data." Pittsburg Health Data Alliance Press Release. March 16, 2015. http://healthdataalliance.com/docs/Health_Data_Alliance_Press_Release_FINAL.pdf

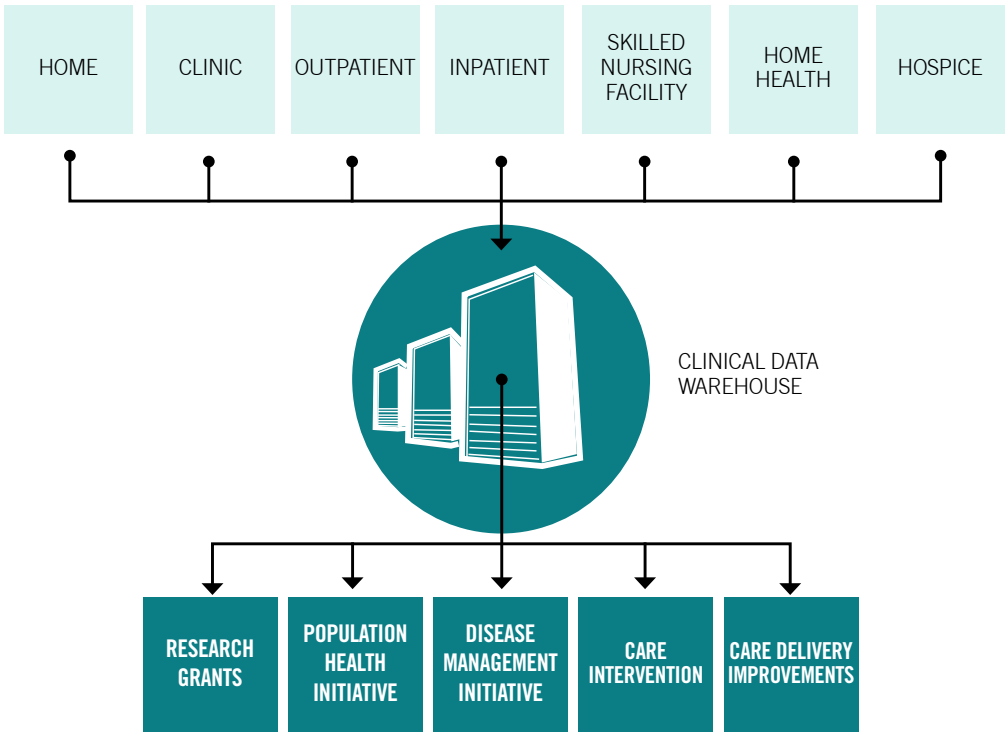
CASE STUDY: DALLAS-FORT WORTH HEALTHCARE VALUE COLLABORATION IN POST-ACUTE CARE

In June 2011, two competing health systems serving the Dallas-Fort Worth (DFW) area—Methodist Health System and Texas Health Resources—signed a collaborative agreement to improve quality and reduce the cost of healthcare within the framework of an Accountable Care Organization (ACO). The DFW post-acute care and home health markets, which saw levels of utilization 70% and 66% higher than their respective benchmarks, were identified as initial targets for improvement. To date, the collaboration has established DFW's first "Preferred Post-Acute Provider" network, formed a joint venture with a third-party provider for home health, and formed a joint venture with a third-party provider for a new rehabilitation hospital.

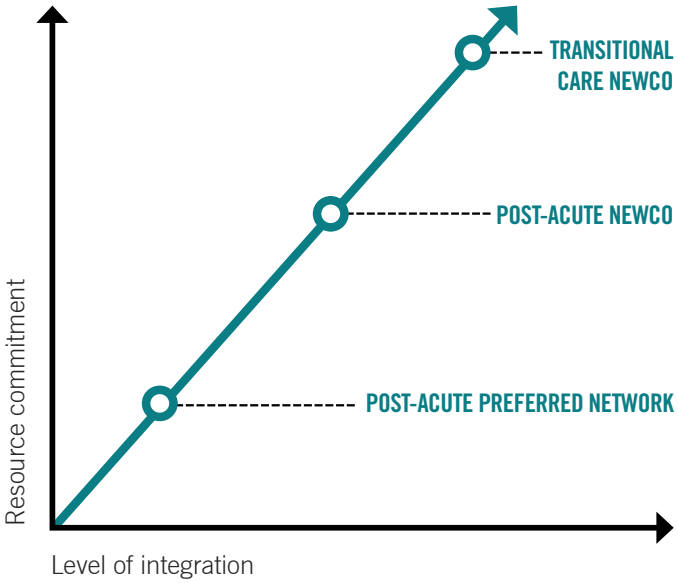
For further information, see:

"Texas Health Resources, Methodist team with Centerre for Rehab hospital." Modern Healthcare. January 17, 2014. http://www.modernhealthcare.com/article/20140117/NEWS/301179970

42 Diagram Illustrating Potential Sources and Uses of Patient Health Data Stored in Clinical Data Warehouses



43 Diagram Illustrating Post-Acute Care Integration Options.



The Health District providers develop a NewCo with a national post-acute provider. The NewCo owns the continuum of post-acute services and focuses on providing high-quality, cost-effective care as a transitional model for Health District post-acute patients.

Health District providers develop a New Company (NewCo) that consists of the tools and providers needed to manage Post-Acute Preferred Network patients (e.g., case management, medical directors, IT integration). The NewCo helps to standardize and integrate all post-acute care for the network. Bundled payment options should be explored.

Health District providers develop criteria for post-acute providers to be included in a selective post-acute network. The providers and Post-Acute Preferred Network providers conduct joint work sessions to create clinical guidelines for providing integrated and standardized care and potentially payment bundles.

RESILIENCY + DISASTER PREPAREDNESS

The Baton Rouge Health District will be a model for resiliency, emergency coordination and disaster response.

RESILIENCY + DISASTER PREPAREDNESS

DIAGNOSIS

CHIEF COMPLAINT

Post-Katrina Momentum for Public Health and Medical Disaster Preparedness is at Risk

KEY SYMPTOMS OBSERVED

1. Medical Preparedness Efforts Limited to Public Health Agencies and Hospitals
2. Decline in Federal Funds for Health and Medical Preparedness Efforts
3. Challenges to Road and Utilities Infrastructure in the Event of a Disaster

VITAL SIGNS

Louisiana Hospital Preparedness Program Grant Funding has decreased 56% since FY 2006

22 Hospitals Engaged in Region 2 Preparedness Planning

Only 4 Points of Access Into District Hospitals and Emergency Rooms

ASSESSMENT

The preparedness network needs long-term funding and expanded engagement to ensure district- and community-scale resilience against unforeseen events.

TREATMENT PLAN

PRIORITY INTERVENTIONS

Establish the BRHD Resiliency Officer and Emergency Coordinator position.

PRESCRIPTIONS

1. Adopt whole-community approach in emergency preparedness.
2. Identify sustained funding for preparedness planning and outreach.
3. Engage in district-scale resiliency planning linked to regional efforts.

FOLLOW-UP TESTS (ANNUAL CHECK UP)

Health District Preparedness Funding and Activity Levels

Number of Non-Hospital Healthcare and Service Providers Participating In Emergency Preparedness Efforts

Extent of Community Outreach Efforts

EXPECTED OUTCOME

A Culture of Preparedness Across the Whole Community

RESILIENCY + DISASTER PREPAREDNESS

Diagnosis

CHIEF COMPLAINT

Post-Katrina momentum for public health and medical disaster preparedness is at risk.

This condition is an outcome of the following key symptoms observed in the Health District:

1. Medical Preparedness Efforts Limited to Public Health Agencies and Hospitals
2. Federal Funds for Preparedness Planning Declining
3. Lack of Dependable Access and Utility Backup Options

Photo: Secretary Michael Leavitt, Department of Health and Human Service (HHS), visits with evacuees in the Medical Special Needs Shelter, located in the Pete Maravich Assembly Center, Louisiana State University, Baton Rouge, Louisiana, September 3, 2008. Barry Bahler/FEMA.

KEY SYMPTOMS OBSERVED

Louisiana has a robust emergency preparedness network that continues to save lives. Further gains can be made by bringing non-hospital providers to the table.

1. Medical Preparedness Efforts Limited to Public Health Agencies and Hospitals

In Louisiana, emergency preparedness and response partners are organized in 16 groups called emergency support functions (ESFs). Hospitals, public health agencies, and other healthcare providers work together under ESF 8: Public Health and Medical Services.

Led by the Department of Health and Hospitals (LA DHH), the ESF-8 Network in Louisiana effectively integrates the cooperation of the LA DHH, Louisiana Hospital Association (LHA), Louisiana State University Healthcare System (LSU Health), Bureau of Emergency Medical Services (EMS), Louisiana Emergency Response Network (LERN), Hospital and EMS Designated Regional Coordinators (DRCs), and Public Health Emergency Response Coordinators (Figure 44). The ESF 8 Network uses a range of state and federally-funded tools every day and during disasters to effectively coordinate the sharing of critical healthcare resources.

The Louisiana ESF-8 Network organizes the state into nine administrative regions. Region 2 includes East Baton Rouge Parish and six neighboring parishes: West Baton Rouge, Iberville, Ascension, Pointe Coupee, West Feliciana and East Feliciana. Of the thirty licensed hospitals in Region 2, twenty-two regularly participate in planning meetings. Region 2 has two DRCs, housed at Our Lady of the Lake Regional Medical Center and Baton Rouge General Medical Center.

ESF-8 Successes During Gustav

When hospitals need to evacuate patients, the DRCs coordinate to find placement for patient transfers. For example, for Hurricane Gustav in 2008, about 1,000 patients were evacuated from 38 hospitals pre-storm, and approximately 225 patients were evacuated from 10 hospitals post-storm. Through DRC coordination efforts, about 55% of those evacuated patients were placed within Louisiana; the rest were transported to other states.[1]

The American College of Emergency Physicians (ACEP) continues to rank Louisiana third best among all states for its disaster preparedness.[2]

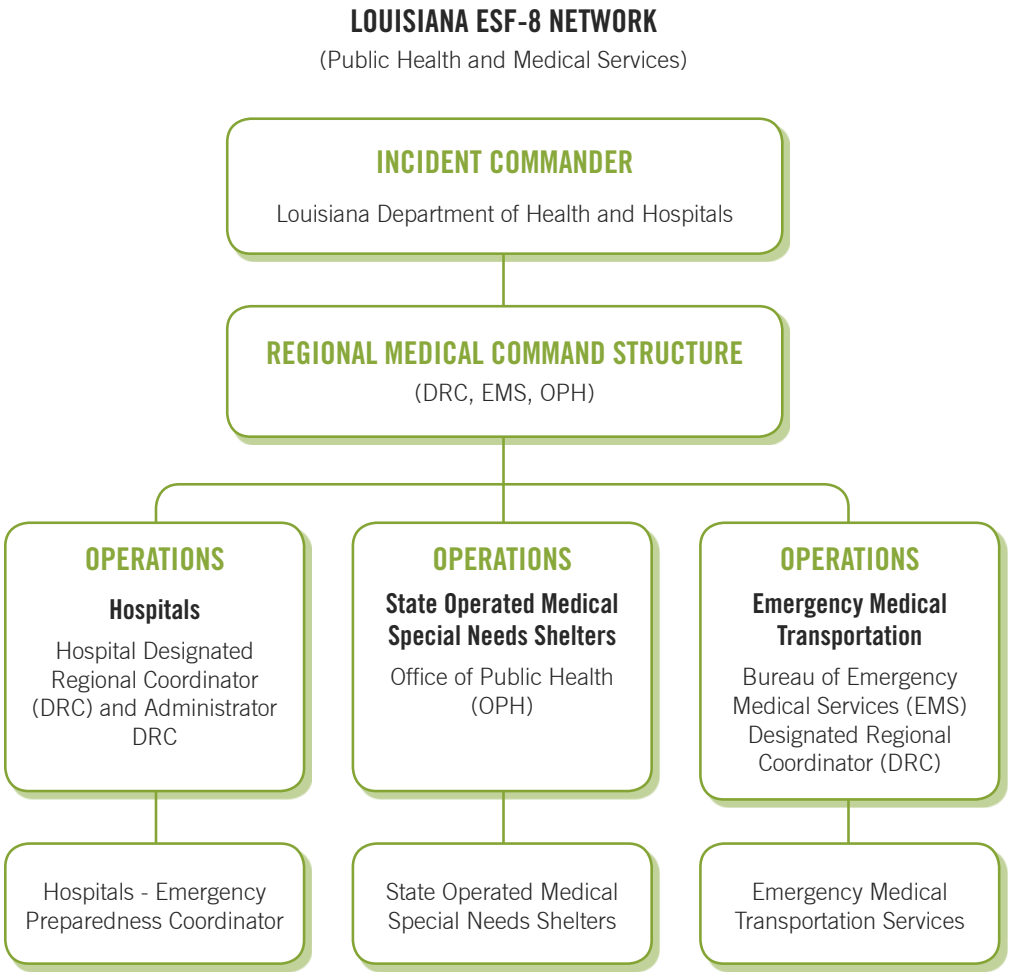
Limitations of the ESF-8 Network

Region 2 hospitals and state agencies communicate better than ever before under the Louisiana ESF-8 Network. However, getting non-hospital entities and coordinators (nursing homes, home health, etc.) engaged in collaborative emergency preparedness efforts has been difficult. Although associations are becoming more engaged, they are not funded with federal Hospital Preparedness Program grant funding that has sustained most ESF 8 Network efforts to date. The lack of funding limits the extent to which they can participate in preparedness activities.

1 Andress, Knox. "Louisiana Hospital Responses to Hurricanes Katrina and Gustav," presented at the National Emergency Management Summit. http://www.ehcca.com/presentations/emsummit3/andress_3.pdf

2 Washington, D.C. and North Dakota are ranked first and second. ACEP 2014 Emergency Reportcard. http://www.emreportcard.org/louisiana. Louisiana ranks poorly in other aspects of emergency care measured by the reportcard including access to emergency care, quality/patient safety, medical liability, and public health/ injury prevention.

44 Organizational diagram of the Louisiana Emergency Support Function (ESF) 8 Network



Source: Louisiana ESF-8 Health & Medical Preparedness and Response Network Coalition, Feb 2013. http://c.ymcdn.com/sites/www.lhaonline.org/resource/resmgr/imported/FINAL%20LA%20ESF-8%20Emergency%20Response%20Network%20Coalition%202013.pdf.

LOUISIANA RANKS #3
in the nation for disaster preparedness

22 HOSPITALS
are part of Region 2 preparedness planning

1,000 PATIENTS
were evacuated from 38 hospitals before Hurricane Gustav

KEY SYMPTOMS OBSERVED

Cuts to the Hospital Preparedness Program threaten the continuation of existing preparedness levels.

2. Decline in Federal Funds for Health and Medical Preparedness Efforts

The Louisiana ESF-8 Network has benefitted from the almost $73 million it has received through the Hospital Preparedness Program (HPP)[1] grant funding provided by the U.S. Department of Health and Human Services Office of the Assistant Secretary for Preparedness and Response since 2002. These HPP grant funds have provided a mechanism for Louisiana hospitals to collaborate with the state and other entities to develop a robust ESF-8 response system.

Some of the key communication and coordination tools used by the ESF-8 Network are HPP-funded. These include the ESF-8 Portal and LERN platforms which enable hospitals and supporting agencies to share service capacity and status information (e.g., bed and service availability, generator status) every day and during disasters.

Region 2 hospitals have executed their plans a number of times and validated what works and what does not. Existing hospital emergency plans will need to be adjusted as the Health District develops. Other care providers will need to develop and/or adjust their emergency plans, ensuring they are coordinated with the hospitals' plans. All of these maintenance and outreach efforts require funds for planning and execution.

HPP funding to Louisiana has declined since the 2004-2005 grant year. Grant year 2014-2015 funding is almost 60% less than the 2004-2005 high and 35% less than the previous year.[2] The availability of funding in future years is uncertain.

All of the advances in planning and response that have been realized to date need to be sustained for the BRHD to be a part of effective preparedness and response practices, even after HPP funding declines. It is unclear how the regional preparedness construct supporting the BRHD can sustain or expand collaborative preparedness activities and tools when facing dwindling HPP funding.

1 HPP grants were introduced after the attacks of 9/11/2001 to assist states in dealing with large-scale public health emergencies. http://www.phe.gov/preparedness/planning/hpp/pages/default.aspx

2 http://www.lha-foundation.org/Emergency_Preparedness/Emergency-Preparedness-Home-Page.aspx.

KEY SYMPTOMS OBSERVED

There is insufficient redundancy in infrastructure to ensure continuity of operations during unforeseen events.

3. Challenges to Road and Utilities Infrastructure in the Event of a Disaster

Access In and Out of the District

Limited access points into the District, and the disconnected District street network are impediments to timely evacuation of hospitals and threaten hospital access during mass casualty incidents.

If one or more of the hospitals in the Health District needs to evacuate rapidly, the most pressing challenge in the current environment would be insufficient vehicles to transport patients. Not enough ambulances, helicopters, or other suitably-equipped transport vehicles are available locally or nearby for such a situation. State and federal assets would be required, which would increase time (likely by days) and cost.

If plans are developed to speed the expansion of the vehicle fleet more rapidly, in most scenarios, anticipated congestion of nearby roads would still impede ambulance access to and from hospitals.

Beyond hospital evacuations, the single points of ingress and egress on Essen Lane for the Our Lady of the Lake Emergency Center and on Bluebonnet Avenue for the Baton Rouge General Medical Center limits the ability to efficiently move large numbers of patients into the Emergency Center during a mass casualty incident. It also increases the time necessary for a vehicle to return to service to support the next patient in need.

Utility Infrastructure

Power, water/sewage, and telecommunications outages that affect business and hospital operations also increase the community's demands on hospitals following a disaster.

The general public in Baton Rouge is not well prepared for extended power outages, which increases the need for outpatient pharmaceuticals and oxygen (oxygen concentrators rely on electricity to function). These individuals place an additional demand on hospital resources and admissions when they decompensate and require hospitalization for lack of medication or oxygen. Greater coordination at the District, regional and state level is needed to address this avoidable demand on hospitals during disasters.

RESILIENCY + DISASTER PREPAREDNESS

Treatment Plan

PRIORITY INTERVENTION

TIMEFRAME
1-2 Years

ESTIMATED COST
$90,000 / Year (Salary Only) or $240,000 / Year Including Overhead Costs

LEADS
BRHD
Louisiana Hospital Association
Louisiana DHH

KEY FUNDING SOURCES
BRHD
Louisiana Hospital Association

DISTRICT ROLE
Funding
Coordination

NEXT STEPS
Work with Louisiana DHH and Louisiana Hospital Association to establish the position.

Establish the BRHD Resiliency Officer and Emergency Coordinator position.

Coordination of District-wide resiliency and emergency preparedness initiatives should be one of the key functions of the BRHD.

The Health District is the nucleus of regional preparedness and response efforts. As an organization, the BRHD has a significant role to play in local, regional, and state emergency preparedness activities and in identifying opportunities for increased collaboration and coordination between District healthcare anchors and community stakeholders for disaster response and resiliency. Towards this end, the BRHD should hire a dedicated District Resiliency Officer and Emergency Coordinator who could also serve as the Designated Regional Coordinator (DRC) for Region 2.[1]

The HPP grant, administered by the Louisiana Hospital Association (LHA), on behalf of the Louisiana Department of Health and Hospitals, may be considered a source of seed funding for the District Resiliency Officer and Emergency Coordinator position, with the understanding that the position would be funded fully by the BRHD in the long-term.

The District Resiliency Officer and Emergency Coordinator would establish and facilitate an emergency preparedness committee with diverse membership that would meet at least quarterly and at least monthly during hurricane season. Committee members would include Health District anchors and other key stakeholders. Together, the Coordinator and the Committee would implement the recommendations of the Treatment Plan and identify specific initiatives to improve preparedness and resiliency of the Health District.

1 Currently, the Region 2 Hospital DRC position is shared by two coordinators at Our Lady of the Lake Regional Medical Center and Baton Rouge General.

Rx PRESCRIPTION

The BRHD can promote and embody a culture of preparedness that successfully engages key non-healthcare partners for increased resilience.

1. Adopt whole-community approach to emergency preparedness.

1.1 Include non-hospital providers in healthcare preparedness efforts.

1.2 Engage private sector partners in District emergency planning.

1.3 Enlist all District providers to promote a culture of preparedness.

A key to making the BRHD a model for resilience is creating a culture of preparedness that permeates all aspects of its operations. Everyone who works in and uses the District should understand their multiple roles in preparing for, responding to, recovering from, and mitigating against disasters. When preparedness is a shared responsibility and the whole community understands how to contribute to it, the demands on the individual hospitals during an emergency are reduced, and needs are met more effectively and efficiently. As an added benefit, the act of interdisciplinary planning also enhances non-disaster operations.

1.1 Include non-hospital healthcare providers in preparedness efforts.

Health District preparedness efforts will be strengthened by including non-hospital healthcare providers and private practices in emergency preparedness efforts.

Suggested partners:

- Providers of durable medical equipment, and in particular, of oxygen
- Home health agencies
- Hospices and nursing homes
- Nursing schools
- Medical and nursing staffing agencies
- Urgent care centers
- Pharmacies

Methods:

- Determine the level of interest of community providers for engaging in healthcare emergency planning.
- Develop a business case for potential planning partners.
- Establish a common objective/goal to minimize competition.
- Work together to define success.
- Secure additional funding to include the whole community in healthcare emergency planning.
- Consider and address barriers to participation, including cost in staff time, equipment, business disruption, competing interests, business needs, lack of understanding of partners' processes, and other priorities.
- Partner with nursing and/or public health students to design, pilot, deliver, and compile results of a survey or focus group that would gauge the willingness of community healthcare providers to engage in sustained emergency preparedness planning efforts already underway with hospitals.

1.2 Engage private sector partners in District emergency planning.

District hospitals can strengthen their preparedness efforts by engaging non-healthcare private sector partners (including infrastructure, utility providers, and large chain stores) in emergency planning.

Better inclusion of critical infrastructure partners in emergency preparedness efforts would also help healthcare planners and partners anticipate and proactively address problems. Collaborative efforts are needed to reduce the potential consequences of disasters, such as hardening facilities so they are less likely to be damaged during an event. These joint efforts are needed to improve coordination and plans to reduce utility restoration timelines when disasters cause outages.

Suggested partners:

- Transportation and public works agencies
- Utility providers
- Large chain stores

Methods:

- Identify utility providers that play an important role in maintaining access to vital services and invite them to be planning partners.
- Ensure utility providers consider Health District emergency preparedness when planning cell coverage, water supply, sewage capacity, and primary and backup power systems.
- Explore opportunities for utility providers to contribute to solving the challenges presented by pharmaceutical and oxygen demands post-disaster.
- Engage the Local Emergency Planning Committee and Louisiana Chemical Association to increase understanding of potential hazards related to the chemical industry.
- Track utility providers' participation in future planning efforts.

1.3 Enlist all District providers to promote a culture of preparedness.

Methods

- Encourage all businesses in the Health District to develop and maintain emergency plans and continuity of operations plans so they can resume operations quickly if disrupted, especially pharmacies, dialysis clinics, and durable medical equipment providers. Developing, distributing, and helping partners use an emergency plan template would make it easier for these entities.
- Encourage providers to make recommendations to patients on how to prepare, such as having the prescription medications and oxygen they need in the event of extended power outages and other disaster consequences.
- Encourage outpatient-focused clinics that provide required regular services (e.g., dialysis) to partner with emergency providers and then instruct their patients where they would need to go to continue dialysis in the event of service disruption.
- Promote the pre-identification of staff who will report during and following a disaster, acknowledging that those with young children may be needed at home. Consider plans that include family members of healthcare personnel who may need to be sheltered at the hospital so personnel can work there. For example, knowing that the spouses of physicians and nurses are plumbers, construction workers, or electricians will enable the Health District to call on them to assist facilities personnel. If their children are American Red Cross-certified babysitters, then they might be able to help run a daycare for other providers' children to increase the amount of staff who report.
- Continue to train staff on disaster operation chains of command and resource-sharing plans to encourage staff to coordinate between facilities within the ESF-8 network.
- Identify community partners who are not currently part of the emergency preparedness education effort (e.g., schools, human resource departments of large employers, temporary employment agencies) and engage them in spreading the preparedness message.
- Hold Health District-wide exercises to test emergency plans at least every three years.
- Identify additional funding sources for public outreach and education.

Rx PRESCRIPTION

A well-funded, district-scale preparedness network is a necessary foundation for a successful response to local and regional disasters.

2. Identify sustained funding for preparedness planning and outreach.

45 Joint Operations Center (JOC) at Boston's Longwood Medical Area

The BRHD should leverage its resources to obtain sustained funding for continued operation of the Designated Regional Coordinators (DRC) for Region 2, the ESF-8 Portal for web-based reporting of data and coordination, and the LERN platform. These elements of the ESF-8 Network are critical to collaborative emergency preparedness within and beyond the Health District and are all currently funded by declining Hospital Preparedness Program (HPP) grants.

Sustained funding enables communications systems, situational awareness and decision-making tools to be continually maintained and updated to support the Health District, regional and statewide coordination for both day-to-day and disaster operations.

Funding for district-wide emergency preparedness efforts could come from membership dues, grants from the government and nonprofit foundations, and private industry contributions.

Precedent: MASCO (Boston, MA)

The Medical Academic and Scientific Community Organization (MASCO, est 1972), a member-based organization of 24 medical and academic institutions co-located in Boston's Longwood Medical Area, has been providing shared emergency planning and response services to its members since the creation of its first Business Continuity Contingency Plan in 1999. MASCO created a dedicated Emergency Preparedness and Security Manager position in 2003 and established a Joint Operations Center (JOC) and Press Briefing Center in 2004. District-wide emergency alerts (website, email, text message) and annual evacuation drills are also managed by MASCO staff. The majority of the funding for these operations comes from MASCO's assets and for-profit operations (parking deck, call center, childcare center, etc). MASCO has also been successful in securing grants from federal agencies, including FEMA and DOE, or its joint preparedness efforts.

Rx PRESCRIPTION

The BRHD should engage in resiliency planning to ensure the availability of backup options for key infrastructure and utilities.

3. Engage in district-scale resiliency planning.

3.1. Align transportation investments with preparedness needs.

3.2. Participate in rail system planning efforts.

The National Academies Committee on Increasing National Resilience to Hazards and Disasters defines resilience as "the ability to prepare and plan for, absorb, recover from and more successfully adapt to adverse events." The ability of the BRHD to respond to regional disasters is contingent on the resiliency of its infrastructure for access and energy. Access and energy will be key to a successful response to unforeseen emergencies that impact the Health District.

3.1. Align transportation investments with preparedness needs.

Health District partners should actively investigate opportunities to improve transportation infrastructure to better support emergency response operations.

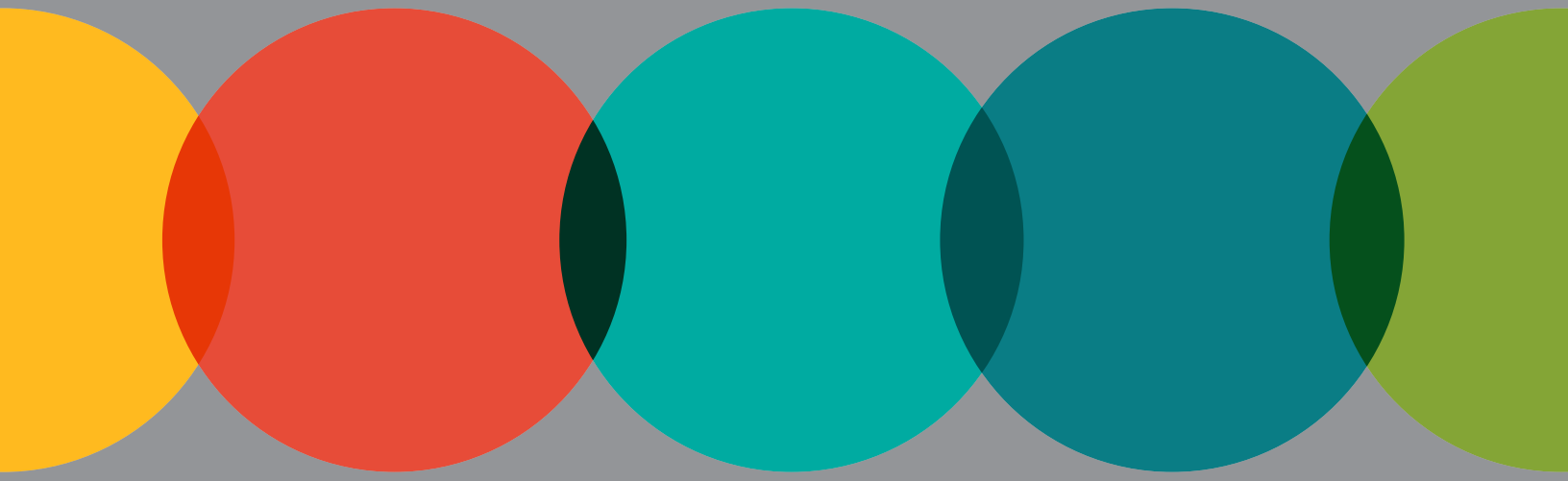
Transportation plans and projects should optimize and prioritize traffic flow around hospital emergency entrances to meet mass casualty incident response requirements. The BRHD should work with government partners to ensure that regional evacuation plans carefully incorporate and complement hospital evacuation plans. Scenarios requiring large-scale community evacuation should be addressed through whole-community planning efforts.

3.2. Participate in rail system planning efforts.

Medical evacuations require specialized equipment (i.e., ambulances, medevac helicopters, and other specially configured vehicles) and trained staff to monitor patients. As demonstrated before Hurricane Gustav, current plans are sufficient for evacuating medical patients from the southeast Louisiana parishes for events that occur with several days' notice. However, these current plans already exhaust Baton Rouge hospitals' capacity to absorb patients from out of the area prior to a hurricane. Any remaining acute care capacity is intentionally reserved for post-storm response needs.

A consortium of stakeholders in Southeast Louisiana is currently advocating for passenger rail service between Baton Rouge and New Orleans using existing KCS rail right-of-way that passes through the District. With proper planning and equipment, rail networks can be used for medical and general public evacuations. A future BRHD rail station could be used to evacuate the District, or to transfer evacuees from elsewhere to other modes of transportation.[1] Health District partners and key players involved in evacuation planning should be at the table during the planning of the regional rail system, to identify the benefits and challenges involved in the establishing of an evacuation transfer point near the District.

1 East Baton Rouge Parish does not currently shelter non-medical evacuees from other parishes prior to hurricanes.



Implementation

District Governance

Treatment Actions

Additional Diagnoses

District Governance

Many of our nation's leading medical districts are managed by charitable corporations that drive shared strategic, operational and programmatic initiatives for the benefit of their member institutions.

While each district governance entity is unique, most districts fall within one of five categories described in Figure 47. Based on its proposed mission and vision, the Traditional Anchor District model seen in Boston, Houston and Buffalo is recommended for the BRHD at this time (Figure 46). The District should consider a self-taxing or government district model in the near term.

The BRHD has been incorporated as a legal 501(c)(3) entity with a guiding vision and foundational plan. A district organization will be established in the form of a District Board supported by Foundation staff.

The BRHD is currently in its formative stage. Additional steps that must be taken include:

- Establishing Membership
- Finalizing Governance Structure
- Hiring an Executive Director
- Setting up Funding Mechanisms

46 Precedents for Traditional Anchor Districts

BUFFALO NIAGARA MEDICAL CAMPUS (BNMC)
Buffalo, New York
120 acres

BUFFALO NIAGARA MEDICAL CAMPUS, INC. (BNMC, INC.)
501(c)(3) with 9 member institutions
Established 2001
Matthew Enstice, President and CEO

LONGWOOD MEDICAL AND ACADEMIC AREA (LMA)
Boston, Massachusetts
213 acres

MEDICAL ACADEMIC AND SCIENTIFIC COMMUNITY ORGANIZATION (MASCO)
501(c)(3) with 23 member institutions
Established 1972
Marilyn Swartz-Lloyd, President and CEO

TEXAS MEDICAL CENTER (TMC)
Houston, Texas
1,345 acres

TEXAS MEDICAL CENTER CORP (TMCC)
501(c)(3) with 59 member institutions
Established 1945
Robert C Robbins, MD, President and CEO

47 District Governance Models

1. TRADITIONAL ANCHOR DISTRICTS

MEMBERSHIP
Contributing institutions

MANAGING ORGANIZATION
Non-profit organization with board of directors, executive staff and advisory committees.

Focused on improving core mission of academic health centers and the medical district.

EXAMPLES/PRECEDENTS
Texas Medical Center (Houston, TX)

Buffalo Niagara Medical Campus (Buffalo, NY)

Medical and Academic and Scientific Community (Boston, MA)

2. EXPANDED ANCHOR DISTRICT

MEMBERSHIP
Contributing institutions and key stakeholders/ partners

MANAGING ORGANIZATION
As above, plus key stakeholders such as private businesses, community organizations, or government partners who contribute financially in the execution of shared initiatives and projects.

Focused on improving core mission of the district but with emphasis on economic/ community development that leverages institutional assets.

EXAMPLES/PRECEDENTS
Phillips Partnership (Minneapolis, MN)

Detroit Midtown, Inc. (Detroit, MI)

Oakland Planning and Development Corporation (OPDC) (Oakland, PA)

3. SELF-TAXING IMPROVEMENT DISTRICT

MEMBERSHIP
Contributing property owners

MANAGING ORGANIZATION
Non-profit organization that manages funds collected through additional tax assessments from property owners located in an area designated by municipal or state legislation.

Focused on delivering public realm improvements and services above those provided by the City to attract and retain businesses, create jobs, and to enhance quality of life for district users.

EXAMPLES/PRECEDENTS
Medical Self-Supported Municipal Improvement District—SSMID (Cedar Rapids, IA)

Business Improvement Districts (BIDs), Community Improvement Districts (CIDs) or Community Benefit Districts (CBD)

4. GOVERNMENT DISTRICT

MEMBERSHIP
None

MANAGING ORGANIZATION
Non-profit organization enabled by state legislation to exercise authority such as economic incentives, joint powers, bonding authority and zoning that are typically associated with government entities. Board members appointed by agenc(ies) designated by the legislation.

EXAMPLES/PRECEDENTS
Illinois Medical District Commission (Chicago, IL)

New Orleans BioDistrict (New Orleans, LA)

5. HYBRID FORM

Depending on the specific needs of an area, hybrid models can also be implemented in the form of multiple entities working in concert.

EXAMPLES/PRECEDENTS
Oakland Planning and Development Corporation (OPDC), a consortium of anchor institutions including the University of Pittsburgh Medical Center works closely with Oakland Business Improvement District (OBID), a self-taxing district entity, in jointly improving the area where the institutions and businesses are located.

48 Proposed governance structure for BRHD

Establishing Membership

In Traditional Anchor Districts, members contribute annually to a central fund to support joint initiatives. The annual contributions are often the only source of funding during a district's initial years. The greater the commitment and resources obtained from anchor participants, the more influential, persuasive and successful the collective voice can be at achieving its goals.

Establishing Governance Structure

To manage the range of various funding sources and implement the vision, the District will need to be governed by a Board of Directors. The Board will have fiduciary responsibility to the District and should hire the necessary staff to manage District initiatives on a day-to-day basis.

The District Board of Directors should include the leadership of the member institutions at the highest level (e.g. CEO, President, etc.). Assuming that all institutions involved to date in the District planning will participate as members, the founding board of the BRHD will include representatives of the following:

- Baton Rouge Clinic
- Baton Rouge Orthopaedic Clinic
- Baton Rouge General Health System
- Blue Cross Blue Shield of Louisiana
- Louisiana State University (LSU)
- LSU Health Sciences Center
- Mary Bird Perkins Cancer Center
- Ochsner Health System
- Our Lady of the Lake Regional Medical Center / Franciscan Missionaries of Our Lady Health System
- Pennington Biomedical Research Center
- Surgical Specialty Center of Baton Rouge
- The Neuromedical Center
- Woman's Hospital

Hiring an Executive Director

A Executive Director for the District will work closely with the Board chair and member institutions to advance the early initiatives that set the District on a long, successful course of development. The Executive Director will be responsible for:

- Developing a Strategic Implementation Plan that identifies and organizes funding sources, costs and/or finance strategies for the Health District that can deliver short, medium and long-term priorities.
- Maintaining momentum and focus, for example, managing the implementation of the BRHD Treatment Plan and ensuring its regular update.
- Securing seed funding (e.g. donations, grants) to cover the initial two years of operations costs for the District and advance further studies.

Setting Up Funding Mechanisms

There is not a single source of funding that can meet all of the District's needs: the BRHD Strategic Implementation Plan will identify a portfolio of funding sources that are best suited for the specific projects and timelines identified in the Treatment Plan. There are, however, two key opportunities that should be explored at the onset to set up a stable funding mechanism for the BRHD:

- Seeking East Baton Rouge Parish Metro Council approval for local tax-increment financing (TIF) for District infrastructure and public realm improvements that benefit the broader community; and,
- Seeking state legislative support for the establishment of an economic development district with taxing, bonding, and zoning authority.

49 Revenue Generation Model for Traditional Anchor Districts

REVENUE GENERATION (ASSET BUILDING)

TIF, land sale/lease, parking fees, program revenue (e.g., clinical trials, BRDOC), etc.

NON-REVENUE GENERATING PROJECTS

Sidewalks, bikeways, landscaping, art, security, etc.

50 Categories of Direct Funding for BRHD Projects and Initiatives

STATE OF LOUISIANA	FEDERAL AND STATE GRANTS	SUBSIDIZED LOANS	BONDS	TAXES	TAX CREDITS
DHH DOT Capital Outlay Homeland Security	FHWA FTA DOT EPA HUD	TIFIA BR RDA Gap Financing	General Obligation Revenue Performance Tax-Increment Supported Bonds	Property and Sales Tax Measures	New Market Tax Credits

SPECIAL TAX ASSESSMENTS	CAPITAL CAMPAIGNS	REVENUE	SPONSOR-SHIPS	STRATEGIC PUBLIC-PRIVATE PARTNERSHIPS	OTHERS
Tax-Increment Financing (TIF) Government Districts	Local Foundations	Parking Fees Real Estate Sales/ Leasing Demand Management Surcharges	Naming Rights Employer-Supported Transit		

Treatment Actions

The following is a summary of all actions and recommendations made in the Treatment Plan.

IMPLEMENTATION

- Determine the governance model for the Health District organization
- Continue to convene the Health District Leadership Group as the Health District board
- Elect a board chair
- Determine and pay membership dues
- Hire an executive director
- Pursue action steps outlined below
- Continue to partner/communicate with nearby neighborhoods
- Continue to partner/coordinate with elected officials (City-Parish, Metro Council, Planning Commission, State, etc.)
- Continue to convene the task forces created through the planning process

HEALTHY PLACE

Build the District Street Network

- Coordinate with the City-Parish / Planning Commission to adopt the proposed plan
- Extend Dijon Drive/Service Road to Bluebonnet Boulevard
- Connect Picardy Avenue to Mall of Louisiana Boulevard
- Complete the proposed and funded Picardy-Perkins Connector
- Insert local access streets to divide mega-blocks along Essen Lane
- Transfer Curb cuts to local access streets along Essen Lane and Bluebonnet Boulevard (and Midway, once completed)
- Improve the intersection of Kenilworth Avenue and Perkins Road
- Add rail crossings (as feasible): O'Donovan Drive OR Dijon Drive, Brittany Drive, Midway Boulevard
- Midway Boulevard
    - Acquire right-of-way for Midway (or encourage the City-Parish to do so)
    - Complete engineering study for design guidelines
    - Complete environmental assessment
    - Complete Midway from Perkins to Dijon Drive
    - Complete I-10 access for Midway
    - Incorporate a protected, multi-use sidewalk into Midway implementation
    - Connect Midway to future trails along Ward's Creek and Dawson's Creek

Build the Health Loop Trail

- Advocate for funding for the Health Loop trail
- Negotiate easements where necessary for the Health Loop Trail
- Restore the creeks along the trail into natural riparian corridors
- Create a connection to Burden Museum and Gardens
- Coordinate development along the creeks to incorporate mixed-use buildings and appropriate development
- Track utilization and health impacts of new trail

Adopt District Street Design Guidelines

- Create a pedestrian zone along streets (sidewalks with appropriate buffers)
- Create on-street parking for businesses located on local and major streets
- Implement bicycle lanes on priority bike-corridors
- Reduce lane widths to 10 feet on streets not designated for high speeds
- Incorporate medians on larger streets for access management and pedestrian refuge
- Implement coordinated way finding using the Health District brand

Increase Transportation Options

- Implement a bike share program
- Establish a circulator bus service
- Build a multi-modal transit center
- Promote commuter rail service between Baton Rouge and New Orleans
- Coordinate with CATS to improve transit options to, from and within the District

Adopt a Landscape Framework Plan

- Create signature parks
- Use appropriate native plants
- Prioritize lawn in areas for larger gatherings and recreational opportunities
- Implement public art

Promote balanced, diverse, and orderly development

- Adopt pedestrian-oriented zoning regulations
- Promote parcel consolidation
- Promote mixed-used developments by coordinating with developers

HEALTH EDUCATION + RESEARCH

Pursue Medical School in Baton Rouge Health District

- Develop a champion group to explore expanded medical education in Baton Rouge
- Complete a Feasibility and Economic Impact Assessment for the medical school
    - Determine potential partners and engage them
    - Determine business model
    - Determine ownership, governance and potential affiliations
    - Determine funding model
    - Determine potential dual degree programs and curriculum
- Determine economic impacts, direct and indirect, related to a new medical school (direct and indirect employment, expansion of regional economy, basic science and clinical research, workforce expansion, and generation of government revenue)
- Determine regional Graduate Medical Education expansion needs
- Pursue new sources of funding for medical education expansion
- Determine next steps for establishing medical school

Build Research and Education Networks to Support Innovation and Workforce Growth

- Catalog and expand professional and educational assets
    - Catalog direct care providers
    - Catalog other professionals (such as financial, IT and administrative personnel)
- Identify gaps in workforce and workforce development
- Promote solutions to the gaps in workforce demands
- Catalog and expand training and Continuing Medical Education programs
- Create a consortium for shared electronic resources
- Support the expansion of nursing and allied health programs within the District
- Promote collaboration and team-based approaches to clinical care between physicians, physician extenders, and allied health professionals

Expand Clinical Trials in Baton Rouge

- Create a Clinical Trials Consortium
    - Collectively build infrastructure and coordinate efforts among community-based research entities, university researchers, and industry sponsors
    - Determine a comprehensive process for initiating and launching trials within this network
    - Design and launch a searchable directory of clinical research and create other enhanced communication vehicles
    - Increase physician and patient education and awareness related to clinical trials

    - Increase collaboration between academic, research and healthcare institutions
- Host trials at the Baton Rouge Diabetes and Obesity Center (BRDOC)
    - Locate the BRDOC at Pennington Biomedical Research Center
    - Integrate researchers into the BRDOC through targeted programming and facility planning
    - Engage technology companies to test digital monitoring and treatment devices at the BRDOC

HEALTHCARE INNOVATION

Pursue a Diabetes and Obesity Center in the District

- Support the task force studying the BRDOC
- Complete a business plan for the Baton Rouge Diabetes and Obesity Center (BRDOC)
    - Determine current market dynamics
    - Determine the mission, vision and goals for the organization
    - Determine the business model
    - Determine ownership, governance, and potential affiliations
    - Determine the funding model
    - Determine the estimated return on investment
- Determine the economic impact within the District and southeast Louisiana
- Pursue incentives and tax credits provided by the Louisiana Economic Development
- Integrate primary care and specialty clinics with the BRDOC
- Pursue changes in reimbursement models away from fee for services toward value and outcomes-based reimbursements
- Engage employers with employees who could benefit from services
- Work with payors to enroll patients
- Access and utilize claims data for enrolled members to ensure proper care
- Implement a medical home model at the BRDOC
- Facilitate patient access to services
    - Offer extended hours
    - Provide patient transportation
    - Offer childcare on-site during patient visits
    - Implement telemedicine for consults and follow-up visits
- Provide wellness services, including
    - A fitness area with physiologists offering training and classes
    - A demonstration kitchen for healthy eating lessons

    - A premade meal station with healthy meals
    - A child education and play area where kids can learn about healthy lifestyles
- Provide resources for primary care and specialty physicians, including:
    - Physician extenders, behavioral therapists, dieticians, health coaches, patient navigators/care coordinators, social workers, physiologists, trainers, and technicians
    - Develop incentives to engage physicians to use the services of the BRDOC

Pursue Integrated Post-Acute Services in the Community

- Complete a feasibility study for integrated post-acute care
- Determine current market dynamics
- Explore governance models including a preferred network, a new company that integrates care, or an affiliation with a national post-acute care provider
- Explore funding models for the service

Pursue Clinical Data Integration

- Improve interoperability and adequate information exchange among healthcare facilities' electronic medical records (i.e. pursue a health information exchange)
- Track patient outcomes based on treatment regimens
- Track resource use for patients (i.e. clinic versus emergency room visits)
- Implement policies to use the data to improve population health

RESILIENCY + DISASTER PREPAREDNESS

Establish the Baton Rouge Health District Resiliency Officer and Emergency Coordinator Position

- Work with Louisiana DHH and Louisiana Hospital Association to establish this position
- Support the officer in establishing and facilitating an emergency preparedness committee
- Support the officer in identifying and implementing key initiatives
- Identify sustained funding for preparedness planning and outreach

Adopt a Whole Community Approach to Emergency Preparedness

- Include non-hospital partners in emergency preparedness efforts
    - Determine the level of interest of community providers
    - Develop a business case for potential planning partners
    - Establish a common objective to minimize competition
    - Secure additional funding to include the whole community in planning
    - Address barriers to participation
- Engage private sector partners (i.e. utility providers) in planning efforts

  - Ensure utility providers consider Health District emergency preparedness when planning cell coverage, water supply, sewage capacity, and primary and backup power systems
  - Explore opportunities for utility providers to contribute to solving the challenges presented by pharmaceutical and oxygen demands post-disaster
  - Engage the Local Emergency Planning Committee and the Louisiana Chemical Association to increase understanding of potential hazards related to the chemical industry
  - Track utility providers' participation in future planning efforts
- Enlist all District providers to promote a culture of preparedness
  - Encourage all businesses in the Health District to develop and maintain emergency plans and a continuity-of-operations plan so they can resume operations quickly if disrupted
  - Encourage providers to make recommendations to patients on how to prepare for an emergency
  - Encourage outpatient-focused clinics that provide required regular services (e.g., dialysis) to partner with emergency providers and then instruct their patients where to go in the event of service disruption
  - Promote the pre-identification of staff who will report to work during and following a disaster
  - Catalog family members of healthcare personnel who may need to be sheltered at the hospital so personnel can work during an emergency. This database should also include understanding the skillsets of spouses that may be able to assist in an emergency
  - Continue to train staff on disaster operation chains of command
  - Identify community partners who can spread the preparedness message
  - Hold Health District-wide exercises to test emergency plans at least every three years
  - Identify additional funding sources for public outreach and education

Engage in District-Scale Resiliency Planning

- Align transportation investments with preparedness needs
  - Investigate opportunities to improve infrastructure
  - Work with government partners to ensure that regional evacuation plans carefully incorporate and complement hospital evacuation plans
- Participate in rail system planning efforts to ensure that emergency evacuations are considered
- Consider creating a District-wide plan for an emergency within the District

Additional Diagnoses

The District is equipped to assess and treat other issues and opportunities that arise in the future.

This Treatment Plan deals with the diagnosis and treatment of items in four critical areas: Healthy Place, Health Education and Research, Healthcare Innovation, and Resiliency and Disaster Preparedness. While these areas are the most critical and require the most immediate attention for the Health District, they are far from the only issues.

The goal is to not only make the District a healthy place, but to make it a place that is proactive about health far into the future.

The following are other issues and opportunities to consider:

- **Parking:** conduct a District-wide inventory of parking assets. Implement District management of parking assets and programs to ensure supply and demand are balanced.
- **Childcare / Sick Child Care:** investigate the potential for making childcare opportunities available to employees within the District including in-home child care, in-District childcare centers, and special rates for employees at District-sponsored centers.
- **Energy / Utilities:** conduct an energy utilization study for the District. Consider the delivery of energy and other utilities at a District-wide level to increase more efficient production and consumption of resources.
- **Streetscapes:** design and detail specific improvements to existing streetscapes such as new sidewalks, park spaces, lighting fixtures, public art, bicycle racks, and other custom street furniture.
- **Call Center:** study the feasibility of constructing a facility that would filter all calls on behalf of participating institutions. Potential benefits include increased patient volume, increased appointment arrivals, and increased patient satisfaction.
- **Shuttle Service:** consider offering commuter shuttles, park-and-ride shuttles, and inter-office shuttles between member institutions. All shuttles would be equipped with GPS equipment to allow for real-time location updates.
- **Travel Contracts:** contract with a variety of travel-related agencies to offer discounted rates for business-related travel for employees of member institutions. These agencies include travel agencies, airlines, ground transportation, and hotels.
- **Emergency Preparedness:** investigate the possibility of establishing a facility to streamline communication between city, state, and federal emergency management agencies in the event of an emergency. Provide staff with the ability to deploy resources to the areas of greatest need.
- **Office Supplies / Services:** contract with office vendors on behalf of member institutions to reduce costs and improve efficiency. Potential contracts include office supply companies, courier companies, and office electronics.
- Other Shared Services: opportunities for consolidation and joint purchasing exist for the following services and products:
  - Laboratory Services
  - Medical Supplies/Devices/ Equipment/Pharmaceuticals
  - Elevator & Fire Alarm Maintenance
  - Waste Management & Recycling
  - Laundry
  - Blood Banks
  - Donor Breast Milk Bank
  - Corporate Charter School

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The Baton Rouge Area Foundation held two public meetings on September 24 and November 14, 2014. The Foundation thanks members of the community who provided input and feedback. Presentations from these meetings are available online at http://www.brhealthdistrict.org/reports.

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