

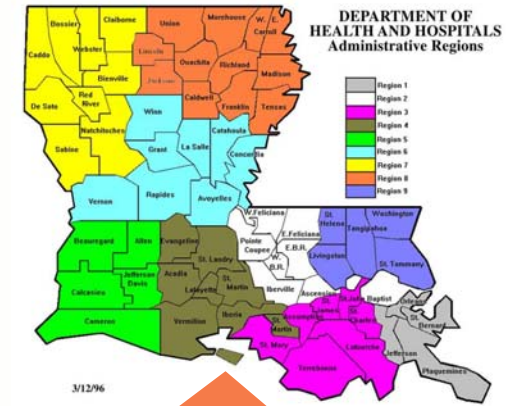
MedInfo 2007
Informing
Health Policymaking
in Post-Katrina/Rita
Louisiana



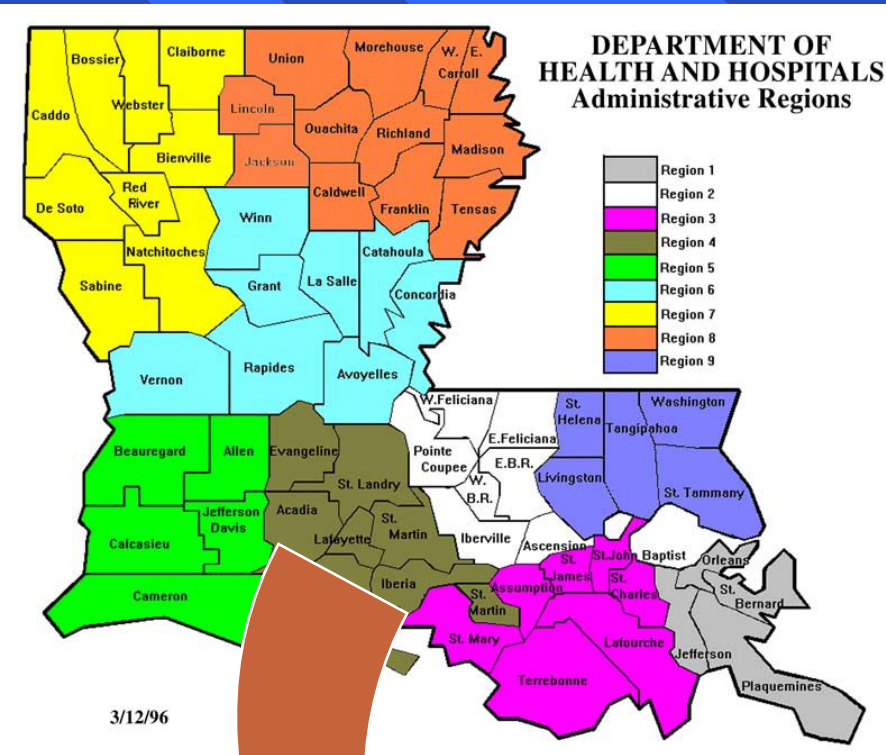
L. Philip Caillouet PhD
Health Informatics Center of Acadiana
The University of Louisiana at Lafayette
August 22, 2007



Geographic Perspective



*Louisiana, in the
South Central U.S.*

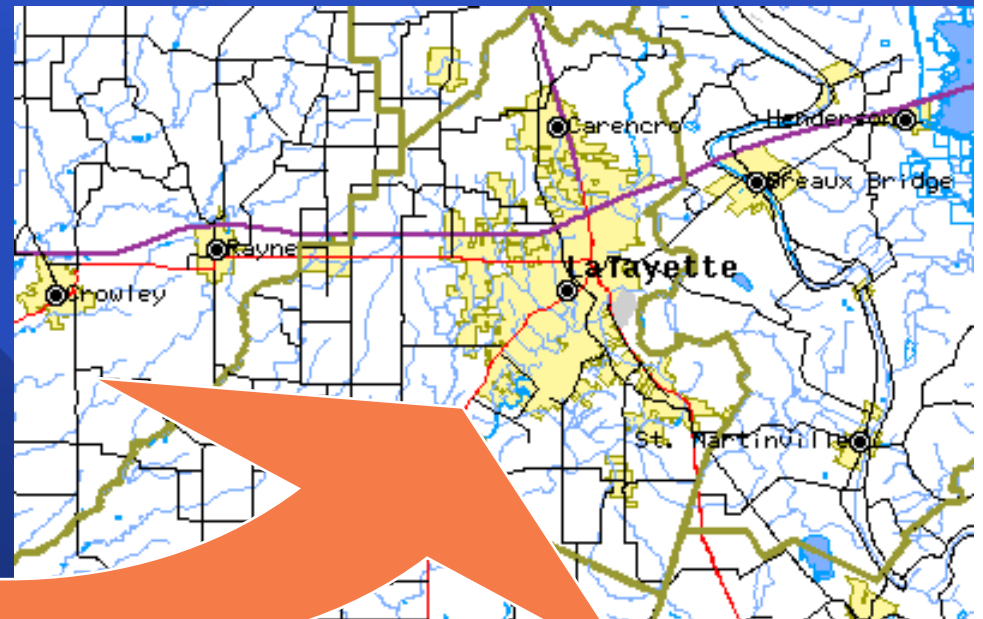


Lafayette: *Hub City of Acadiana,* *Louisiana's "Cajun Country"*

City Population ~ 125,000

Parish Population ~ 220,000

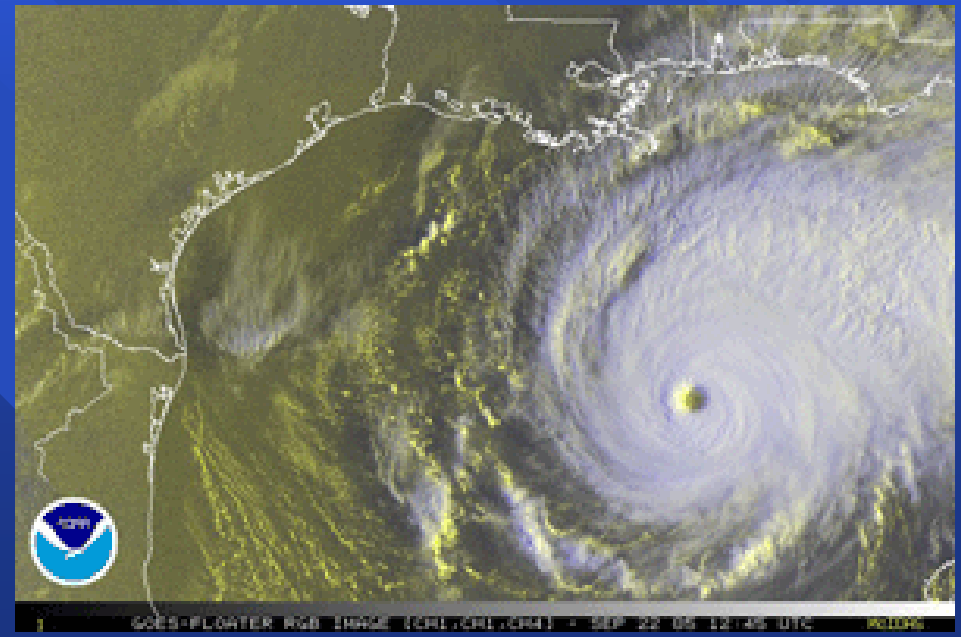
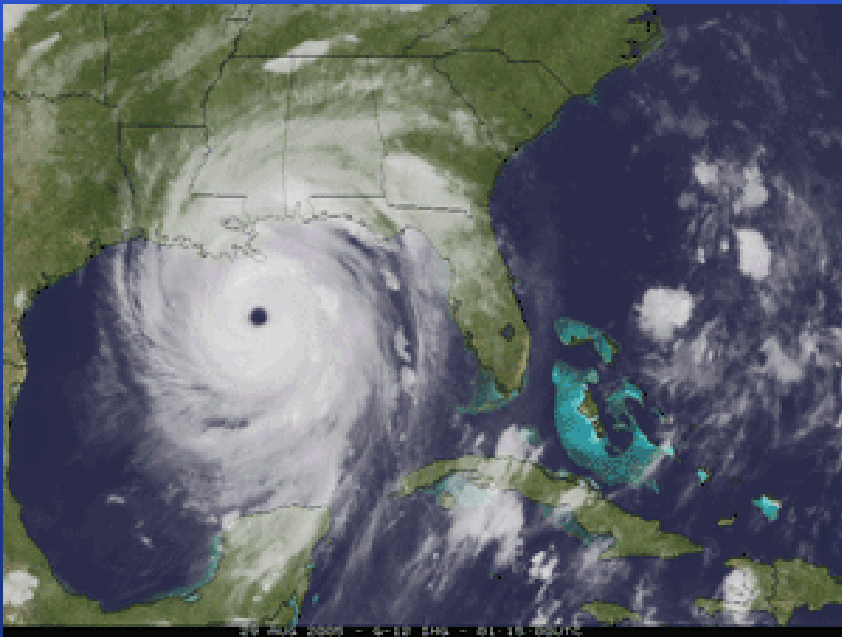
MSA Population ~ 600,000



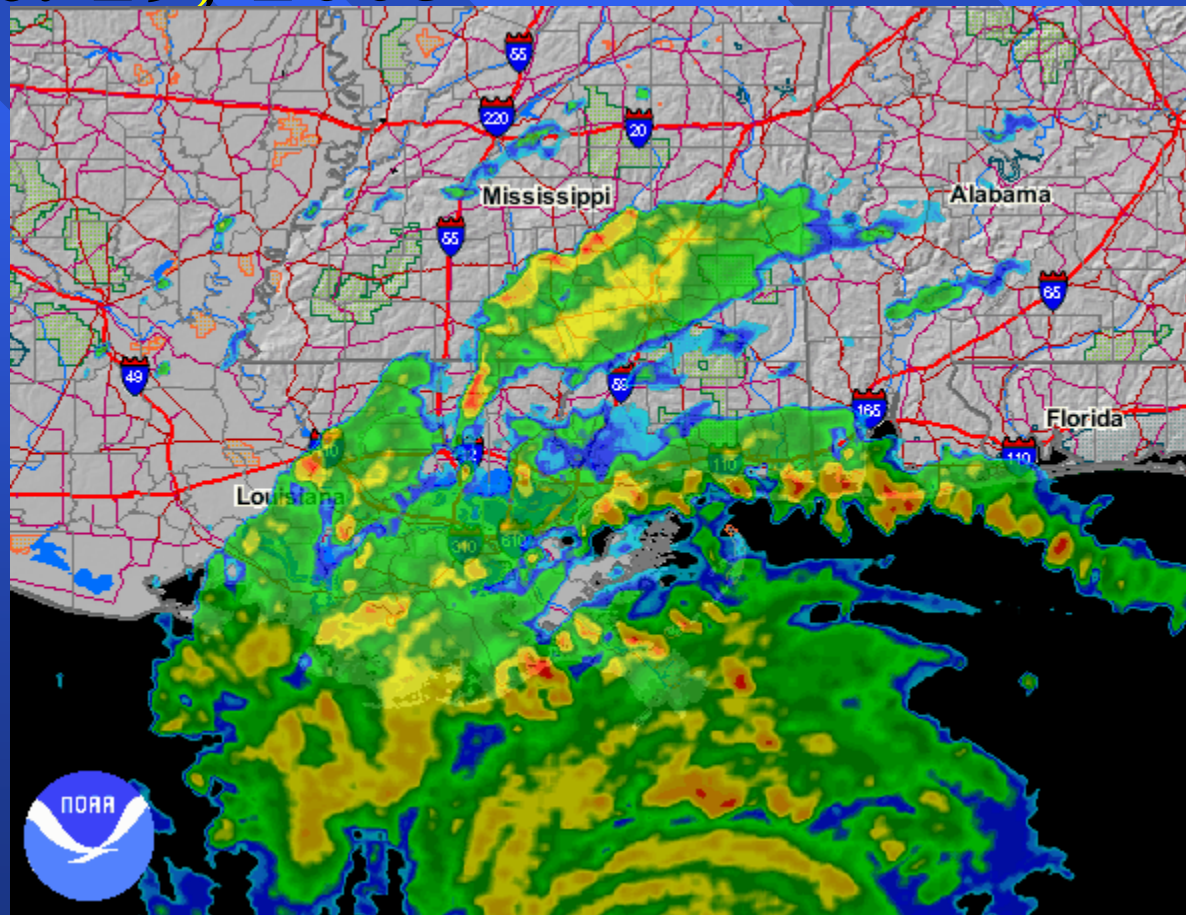
Outline of This Presentation

- *In the Wake of Katrina & Rita*
- *The Long-Standing Problem of Louisiana's Health Status*
- *Leveraging Health Informatics toward a Solution*
- *Public Health Informatics Activities at UL-HICA*
 - *Surveillance*
 - *Evaluation*
 - *Consultation*
 - *Design & Development*

In the Wake of Katrina & Rita



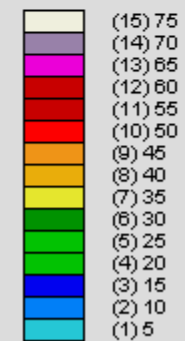
Hurricane Katrina Louisiana Landfall August 29, 2005



BASE REFLECTIVITY
KLIX - NEW ORLEANS, LA
08/29/2005 00:02:28 GMT
LAT: 30/20/13 N
LON: 89/49/30 W
ELEV: 138.0 FT
MODE/VCP: A / 11

ELEV ANGLE: 0.50 °
MAX: 56 dBZ
RANGE 248 NM

Legend: (Category) dBZ



<http://www.cnn.com/SPECIALS/2005/hurricanes/interactive/fullpage.nola.flood/katrina.html>

Katrina Levee-Break Flooding

New Orleans ...
September 15, 2005



New Orleans ...
September 7, 2005



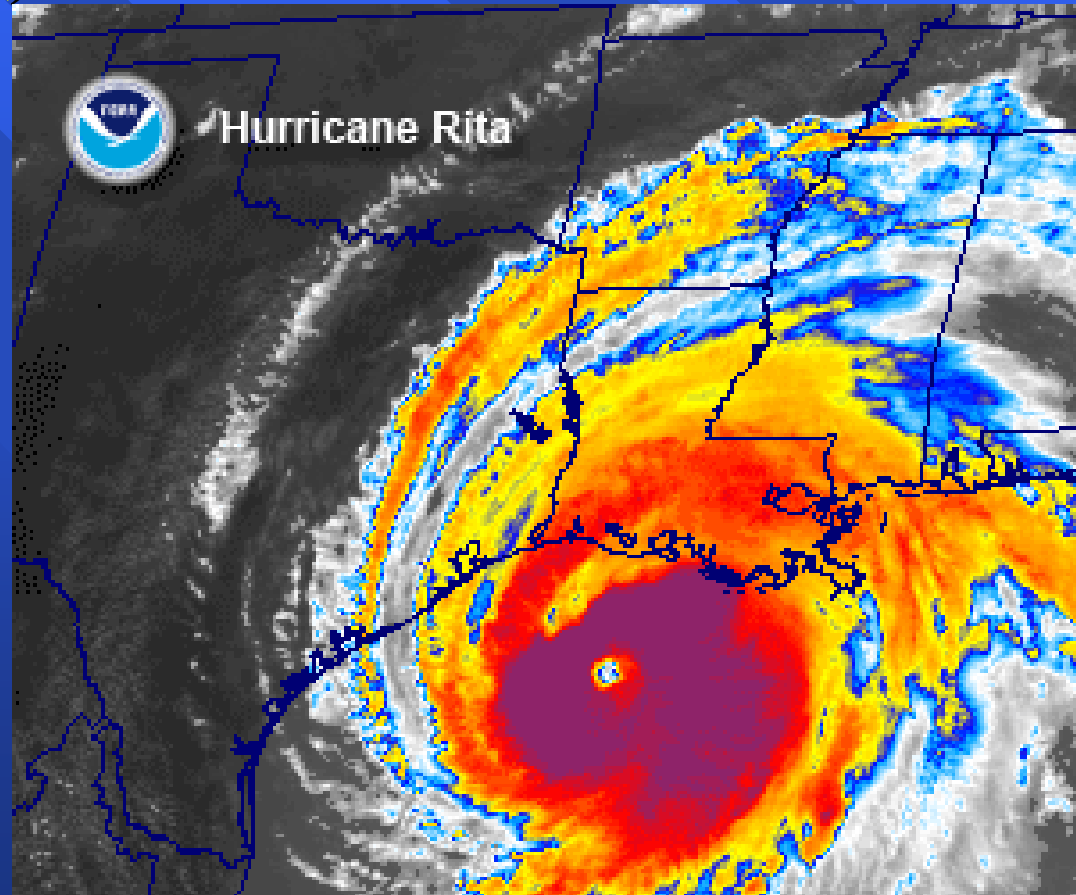
September 15, 2005



September 7, 2005

http://www.nasa.gov/vision/earth/lookingatearth/h2005_katrina.html

Hurricane Rita
Louisiana Landfall
September 24, 2005



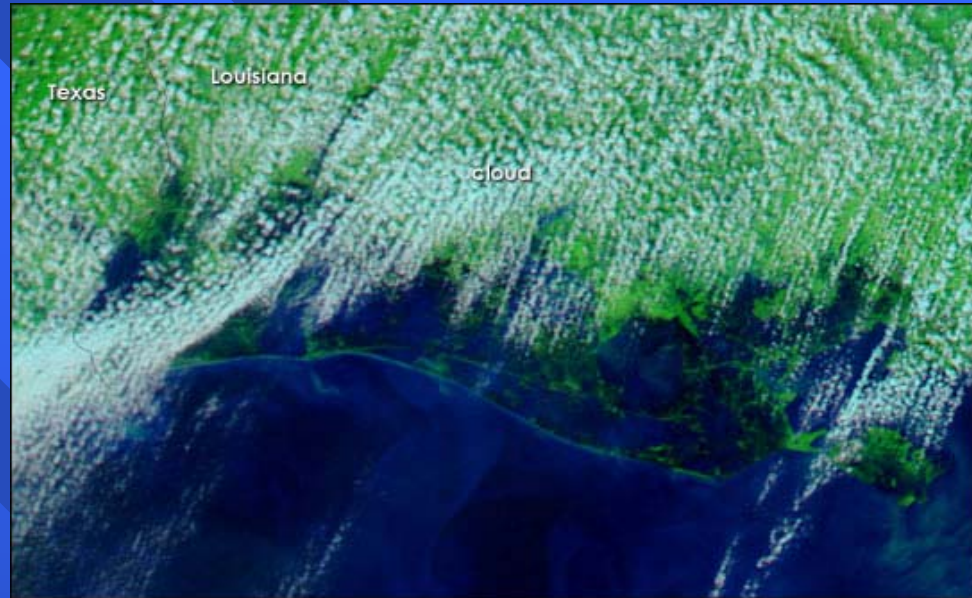
<http://www.ncdc.noaa.gov/oa/climate/research/2005/rita.html>

Rita *Storm Surge* *Flooding*

SW Louisiana ...
September 25, 2005



SW Louisiana ...
September 21, 2005



September 25, 2005



September 21, 2005

http://earthobservatory.nasa.gov/Newsroom/NewImages/images.php3?img_id=17045

Hasty Evacuations, Long-Term Population Displacements



<http://www.photolibrary.fema.gov/photodata/original/15801.jpg>

Storms Exposed Vulnerabilities; Recovery Focuses on Resilient Infrastructure

- Louisiana Recovery Authority
 - Rebuilding New Orleans’ neighborhoods
 - Revitalizing local economies
- Louisiana Healthcare Redesign Collaborative
 - Restoring services in devastated areas
 - Renovating an already “broken” healthcare system
- Louisiana Legislature’s Senate Bill 1
 - the Louisiana Health Care Reform Act of 2007*
 - “Medical Home” concept
 - Applications of Health Information Technology
 - Goal of Quality Management and Improvement

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The Long-Standing Problem of Louisiana's Health Status

18 Health Status Indicators

■ Determinants (Risk Factors)

- Personal Behaviors

- Prevalence of Smoking
(% of population)
- Motor Vehicle Deaths
(per 100,000,000 miles driven)
- Prevalence of Obesity
(% of population)
- High School Graduation
(% of incoming 9th graders)

■ Determinants (Risk Factors)

- Community Environment

- Violent Crime
(per 100,000 population)
- Occupational Fatalities
(deaths per 100,000 workers)
- Infectious Disease
(cases per 100,000 population)
- Children in Poverty
(% of < 18 poverty population)

■ Determinants (Risk Factors)

- Health Policies

- Lack of Health Insurance
(% without health insurance)
- Per Capita Public Health Spending
(\$ per person)
- Immunization Coverage
(% of children ages 19 to 35 months)
- Adequacy of Prenatal Care
(% of pregnant women receiving)

■ Outcomes

- Poor Mental Health Days
(days in last 30 days)
- Poor Physical Health Days
(days in last 30 days)
- Infant Mortality
(deaths per 1,000 live births)
- Cardiovascular Deaths
(deaths per 100,000 population)
- Cancer Deaths
(deaths per 100,000 population)
- Premature Deaths
(years lost per 100,000 population)

<http://www.unitedhealthfoundation.org/ahr2006/states/Louisiana.html>

Louisiana	2006	
DETERMINANTS - PERSONAL BEHAVIORS	Value	Rank
Prevalence of Smoking (Percent of population)	22.6	37
Motor Vehicle Deaths (Deaths per 100,000,000 miles driven)	2	41
Prevalence of Obesity (Percent of population)	30.8↑	48
High School Graduation (Percent of incoming ninth graders)	64.1	44
DETERMINANTS - COMMUNITY ENVIRONMENT		
Violent Crime (Offenses per 100,000 population)	594	42
Occupational Fatalities (Deaths per 100,000 workers)	11.7↑	46
Infectious Disease (Cases per 100,000 population)	28↓	44
Children in Poverty (Percent of persons under age 18)	24.7↑	47
DETERMINANTS - PUBLIC & HEALTH POLICY		
Lack of Health Insurance (Percent without health insurance)	18.8↑	44
Per Capita Public Health Spending (\$ per person)	\$121	33
Immunization Coverage (Percent of children ages 19 to 35 months)	76	43
Adequacy of Prenatal Care (Percent of pregnant women)	82.8	6

<http://www.unitedhealthfoundation.org/ahr2006/states/Louisiana.html>

Louisiana	2006	
HEALTH OUTCOMES	Value	Rank
Poor Mental Health Days (Days in previous 30 days)	2.7	4
Poor Physical Health Days (Days in previous 30 days)	3.8↑	40
Infant Mortality (Deaths per 1,000 live births)	9.9	49
Cardiovascular Deaths (Deaths per 100,000 population)	355.4	42
Cancer Deaths (Deaths per 100,000 population)	223.3	48
Premature Death (Years lost per 100,000 population)	10,530	49

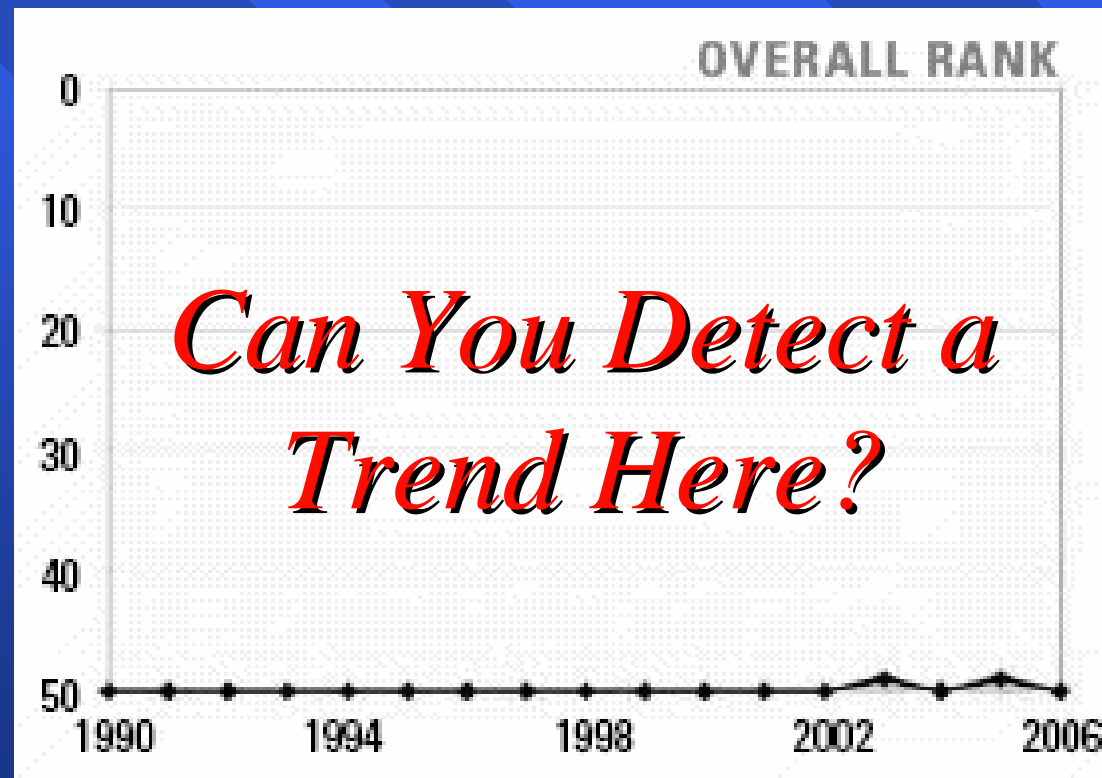
<http://www.unitedhealthfoundation.org/ahr2006/states/Louisiana.html>

Louisiana was 49th in 2005

From the United Health Foundation State Health Rankings - 2005 Edition ...

■ Ranking:

- Good news? Louisiana was 49th in 2005 and 2003.
- It was 50th in 2006 and in every other year of the ranking – 1990-2006.



<http://www.unitedhealthfoundation.org/ahr2006/states/Louisiana.html>

Louisiana's Strengths & Challenges

From the United Health Foundation State Health Rankings - 2005 Edition ...

■ Strengths:

- Few poor mental health days at 2.7 days in the previous 30 days.
- **Ready access to adequate prenatal care with 82.8 percent of pregnant women receiving adequate prenatal care.**

■ Challenges:

- High prevalence of obesity at 30.8 percent of the population.
- High percentage of children in poverty at 24.7 percent of persons under age 18.
- High rate of cancer deaths at 223.3 deaths per 100,000 population.
- High premature death rate with 10,530 years of potential life lost before age 75 per 100,000 population.
- **High infant mortality rate at 9.9 deaths per 1,000 live births.**

<http://www.unitedhealthfoundation.org/ahr2006/states/Louisiana.html>

Louisiana's Significant Changes

From the United Health Foundation State Health Rankings - 2006 Edition ...

■ **Bad Signs:**

- ↑ In the past year, the rate of uninsured population increased from 17.2 percent to 18.8 percent of the population.
- ↑ Since 1990, the prevalence of obesity increased from 12.3 percent to 30.8 percent of the population.

■ **And Good:**

- ↓ In the past year, the incidence of infectious disease decreased from 32.3 to 28.0 cases per 100,000 population.
- ↓ Since 1990, the percentage of children in poverty declined from 38.5 percent to 24.7 percent of persons under age 18.

<http://www.unitedhealthfoundation.org/ahr2006/states/Louisiana.html>

Louisiana's Health Disparities

From the United Health Foundation State Health Rankings - 2005 Edition ...

■ Louisiana's infant mortality rate varies

from a low of ...

» 6.9 deaths per 1,000 live births for whites (non-Hispanic),

to a high of ...

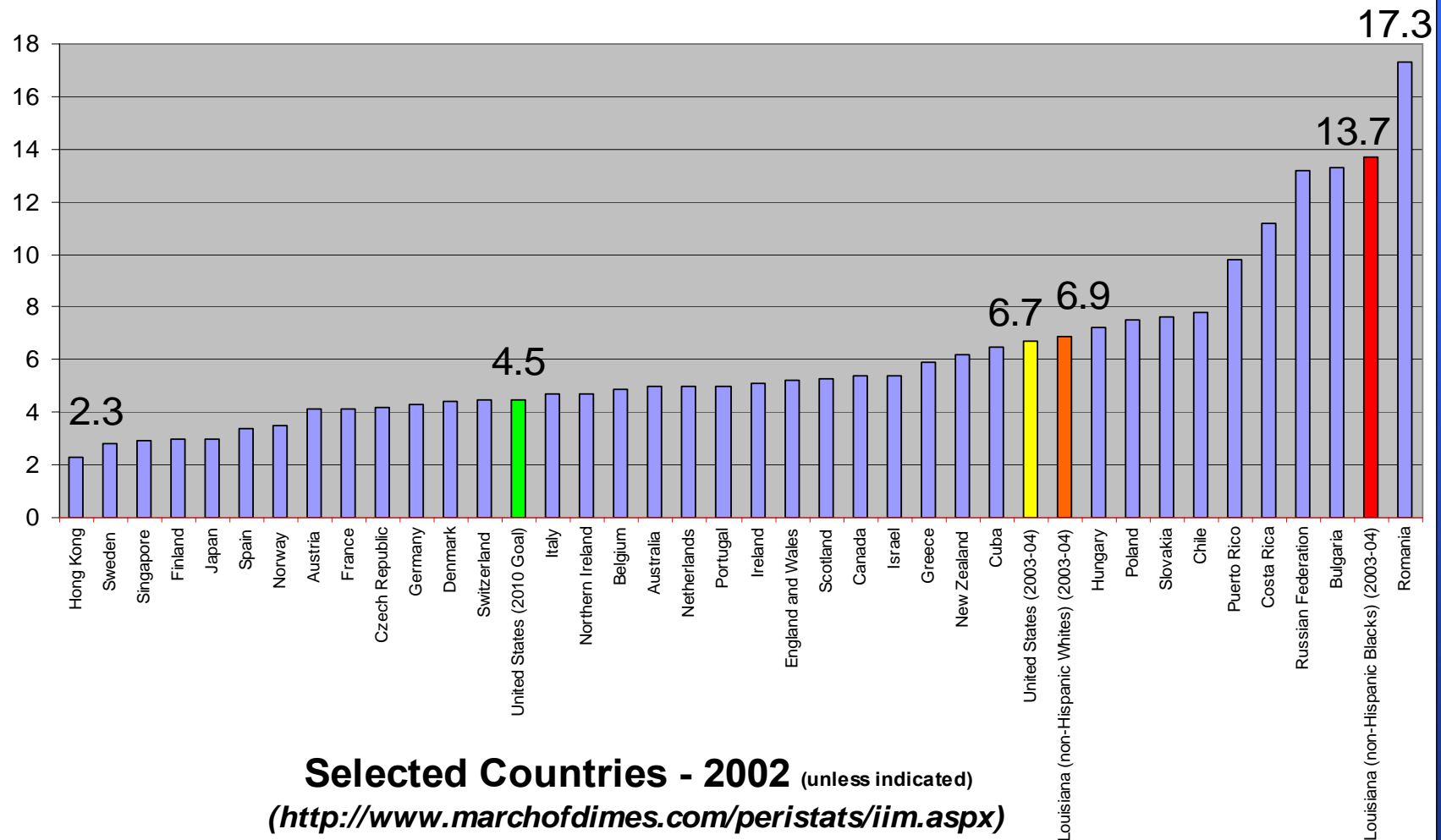
» 13.7 deaths per 1,000 live births for blacks (non-Hispanic).

The goal for the United States is 4.5 deaths per 1,000 live births, as established by Healthy People 2010, an aggressive target that requires substantial improvement from current rates in the next four years.

<http://www.unitedhealthfoundation.org/shr2005/states/Louisiana.html>

Comparing Infant Mortality Disparities

Deaths within 12 months of birth, per 1,000 live births



“All that is necessary for the triumph of evil is that good men do nothing.”

Attributed in various forms to Edmund Burke (1729-1797)

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Leveraging Health Informatics toward a Solution

HICA –Name, Origins, & Constituency

- **“Health Informatics”** is the discipline which uses computer and communications technology to gather and analyze data, and to disseminate information to health-related decision makers.

(“Health” in keeping with the broad definition from the World Health Organization:
*Health is a state of complete physical, mental, and social well-being
and not merely the absence of disease.*)

- **HICA’s Genesis and Early Work**

- Partnership for a Healthier Lafayette (1996-1998)
- Louisiana Turning Point Partnership (1998-2000)
- Healthy People 2010 (2000-)
- HICA’s *Louisiana HABITS* (July 2000-)

- **HICA** has become a focal point for health educators, statisticians, medical records administrators, and information scientists at UL Lafayette – and works closely with various external public and private agencies.

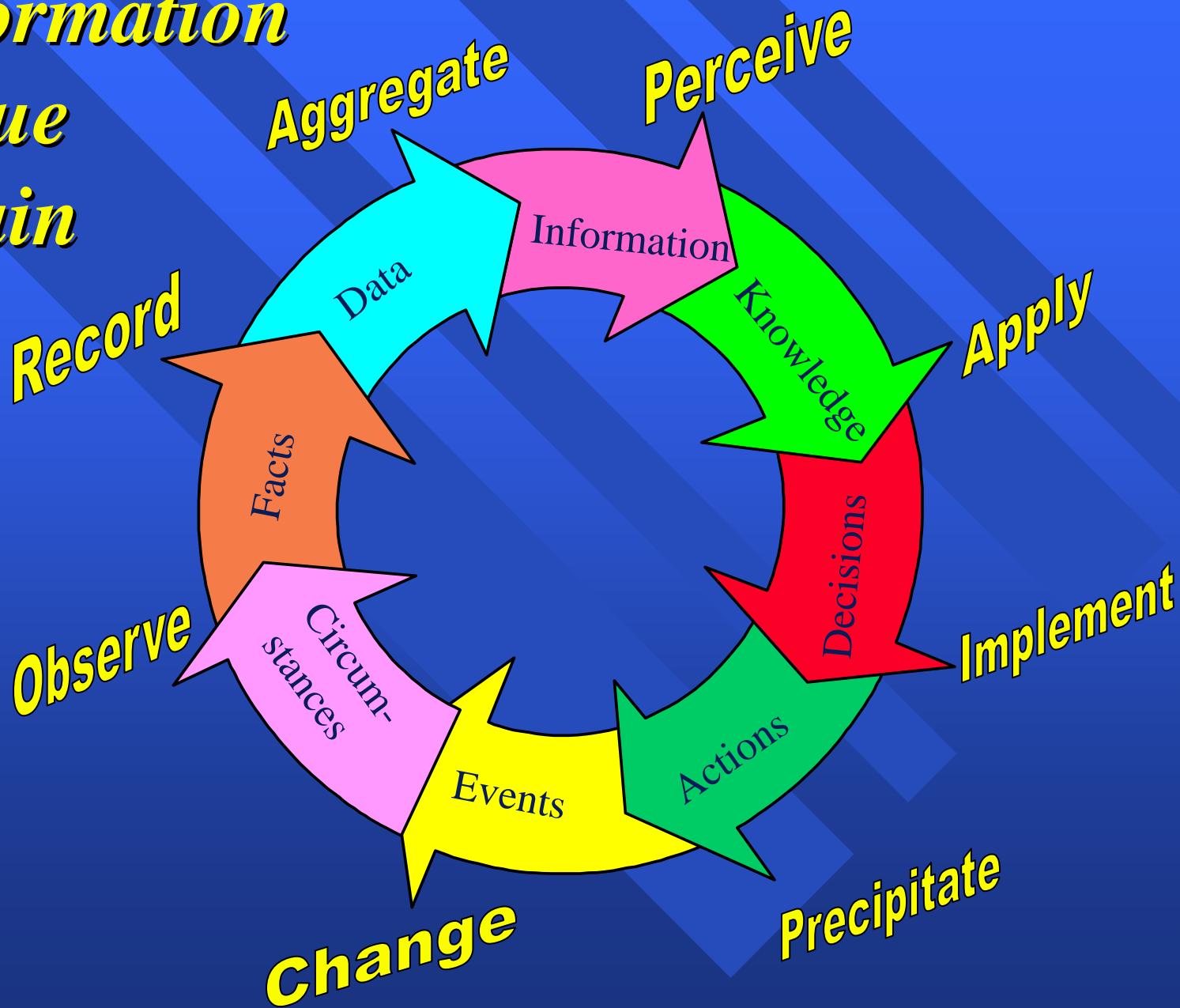
HICA – Mission

1. **Education** – to augment the education of health professionals and healthcare administrators at the undergraduate, graduate, and continuing education levels in the area of health informatics.
2. **Research** – to provide an avenue for scholarly research into community health needs and into the effectiveness of the healthcare community's response to those needs.
3. **Health Status Enhancement** – to serve the goals of Lafayette and Acadiana in access to healthcare and in improving public health generally, and to serve as a vital resource to “healthy communities” initiatives throughout the State of Louisiana.
4. **Decision-Maker Empowerment** – to fulfill community-information requirements of healthcare providers, and to aid policymakers and statewide professional and trade associations in matters relating to healthcare delivery and financing.

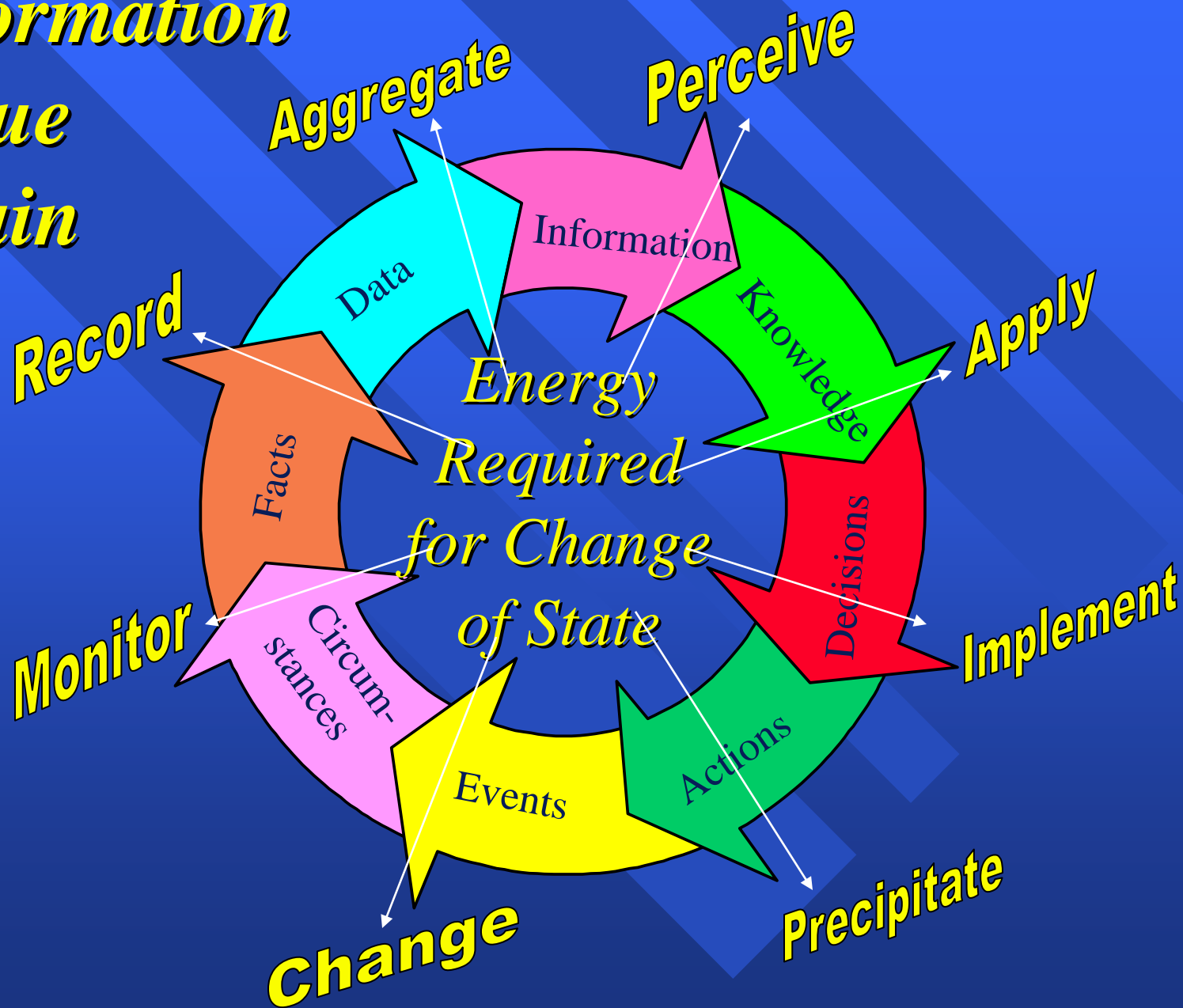
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Concept of Informed Decision Making

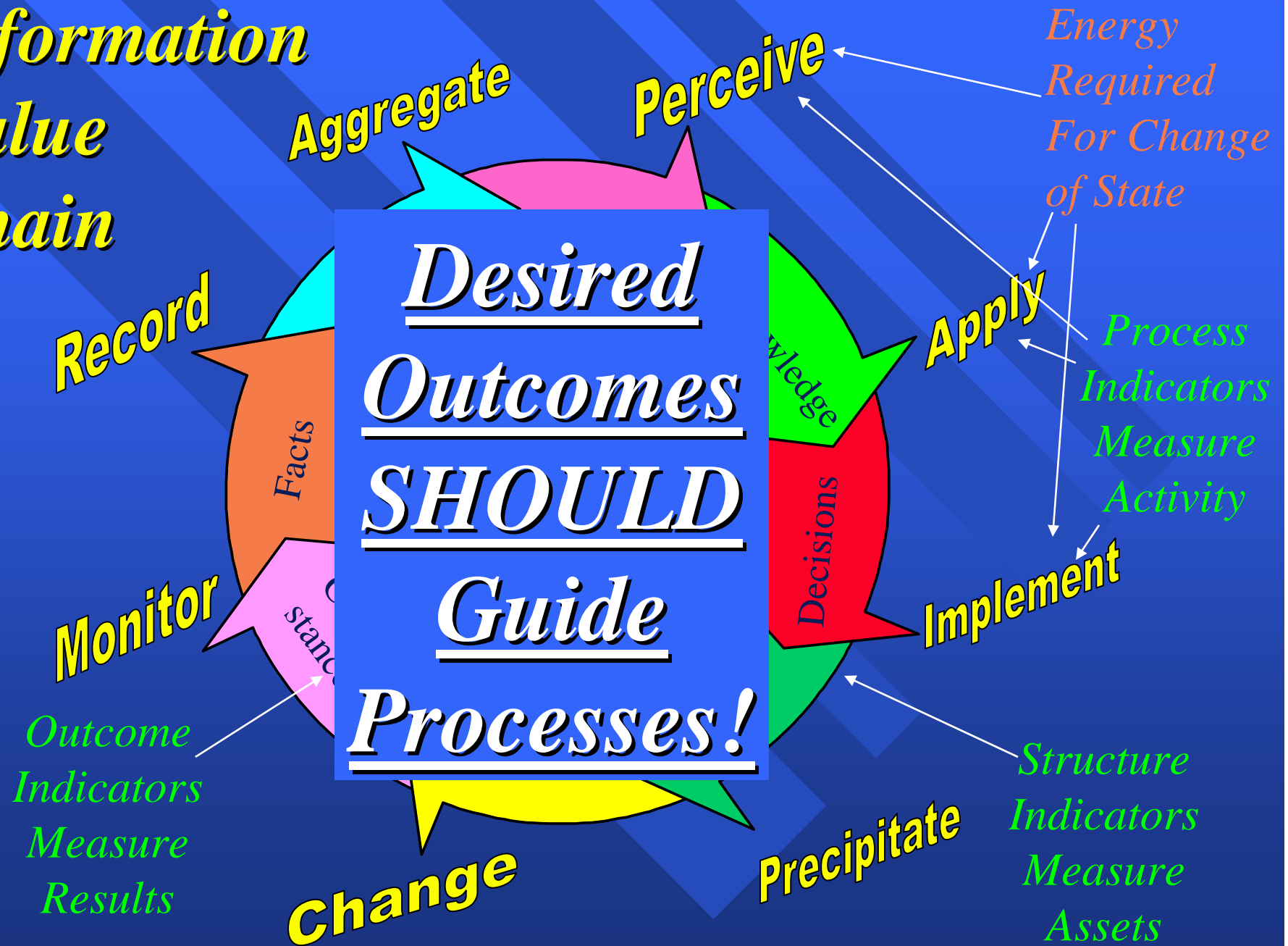
Information Value Chain



Information Value Chain

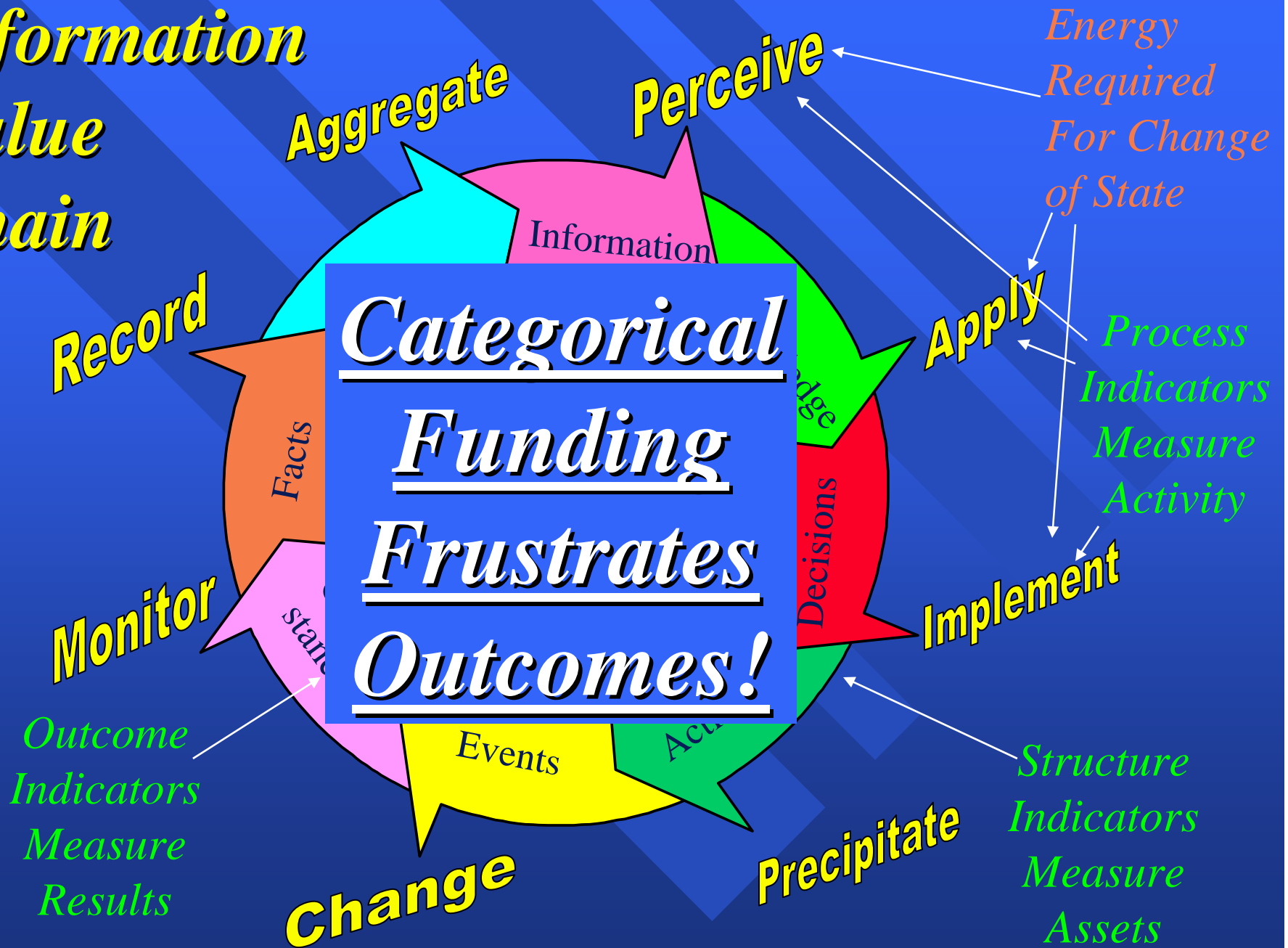


Information Value Chain



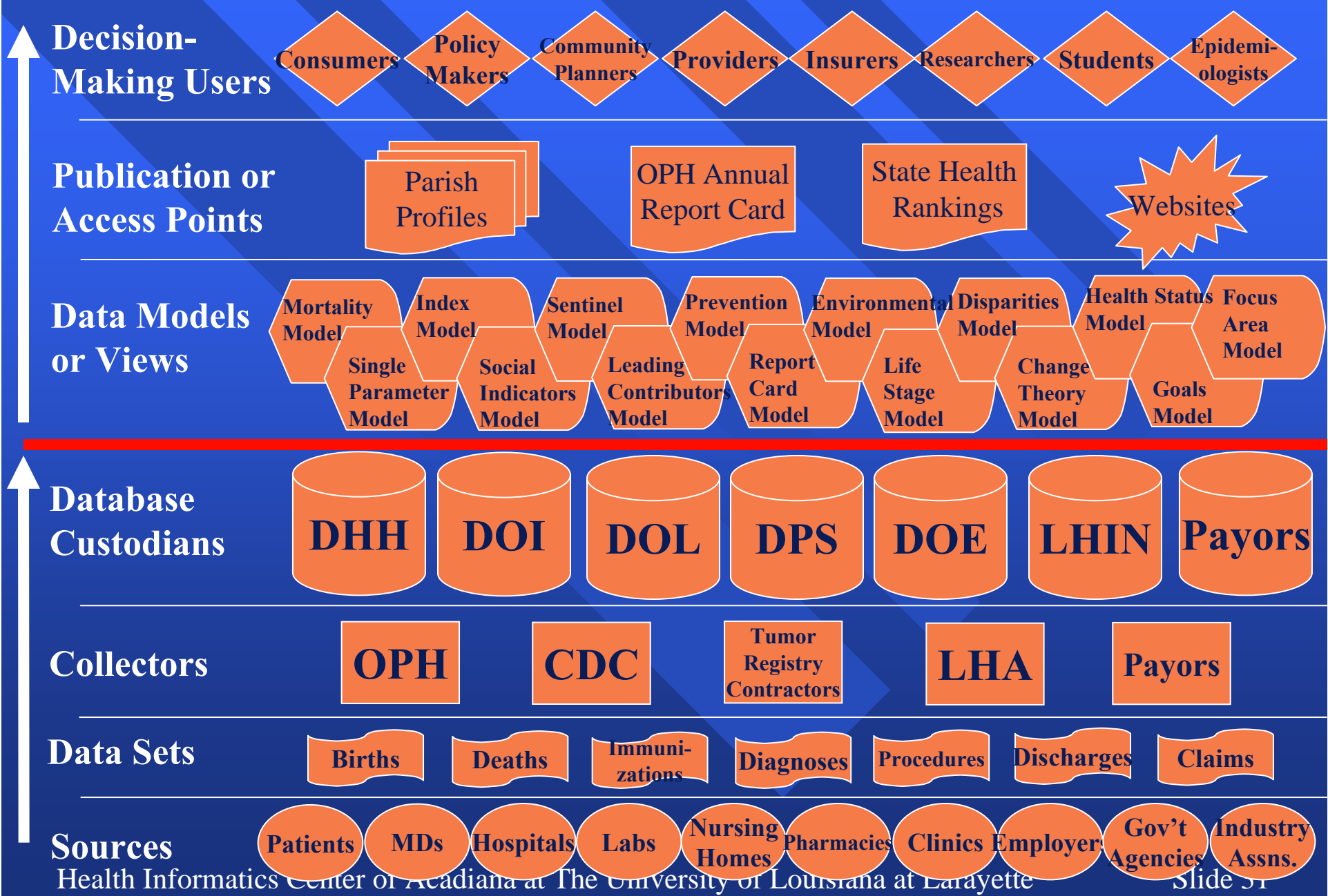
*Reality & Potential
of Informed
Health Decision Making
in Louisiana*

Information Value Chain



Caillouet 2000

Decision-Making Users



Health Assessment: Gathering, Analyzing, & Disseminating Health Information

Decision-Making Users

Community Providers Insurers Researchers Students Epidemiologists

Indexes or Access Points

Parish Profiles OPH Annual Report Card State Rankings



Data Models or Views

Mortality Model Index Model Sentinel Model Prevention Model Enviro Model Health Status Model Focus Area Model
 Single Parameter Model Social Indicators Model Leading Contributors Model Report Card Model Change Theory Model Goals Model

Data Base Custodians

DHH DOI DPS DOE LHIN Payors

Collectors

CDC Tumor Registry Contractors LHA Payors

Data Sets

Births Deaths Immunizations Diagnoses Procedures Discharges Claims

Sources

Patients MDs Hospitals Labs Nursing Homes Pharmacies Clinics Employer Gov't Agencies Industry Assns.

*Public Health Informatics Activities
at UL-HICA*

Health Informatics Center of Acadiana

■ Surveillance

- *Louisiana HABITS*
- CDC's Behavioral Risk Factor Surveillance System
 - » Statewide
 - » "Steps to a Healthier New Orleans"
- CDC's Adult Tobacco Survey

■ Evaluation

- Healthy Start
- Safe Schools / Healthy Students
- Lafayette Jail Diversion Program

■ Consultation

- IS/IT Assessment for Louisiana Department of Health & Hospitals

■ Design & Development

- "Medical Home" Electronic Health Record (EHR)

HICA Surveillance Project:

- *Louisiana HABITS* –
“Healthcare Access Barriers In The State”
- Built on questions from widely used surveys:
 - CDC’s Behavioral Risk Factor Surveillance System (BRFSS)
 - Medical Expenditure Panel Survey (MEPS)
 - North Carolina Health Profile Survey (NCHP), and other studies
- Survey methodology to better address locally significant barriers through sufficiently dense sampling
- Administered in two phases:
 - Random telephone survey to measure general population, and
 - In-person interviews to profile vulnerable populations
- No personally identifiable data collected retained
- Tailored for use with “healthy communities” initiatives

Results Inform Local Leadership, not Washington!



Access Barriers -- Defined

- For the purposes of this study, a household is said to experience a “barrier to access to healthcare services” if any one or more of the following three situations exist:

One or more household members had some problem in the last 12 months ...

1. **Problem obtaining healthcare services**, including

a) **Difficulty** in obtaining care

b) **Delayed** seeking care

c) **Did not receive** the care they thought they should have ... “DDD”

2. **Problem obtaining prescribed medications**

or

One or more household members currently ...

3. **Lack of health insurance coverage** or a “medical card”.

Region IV Findings

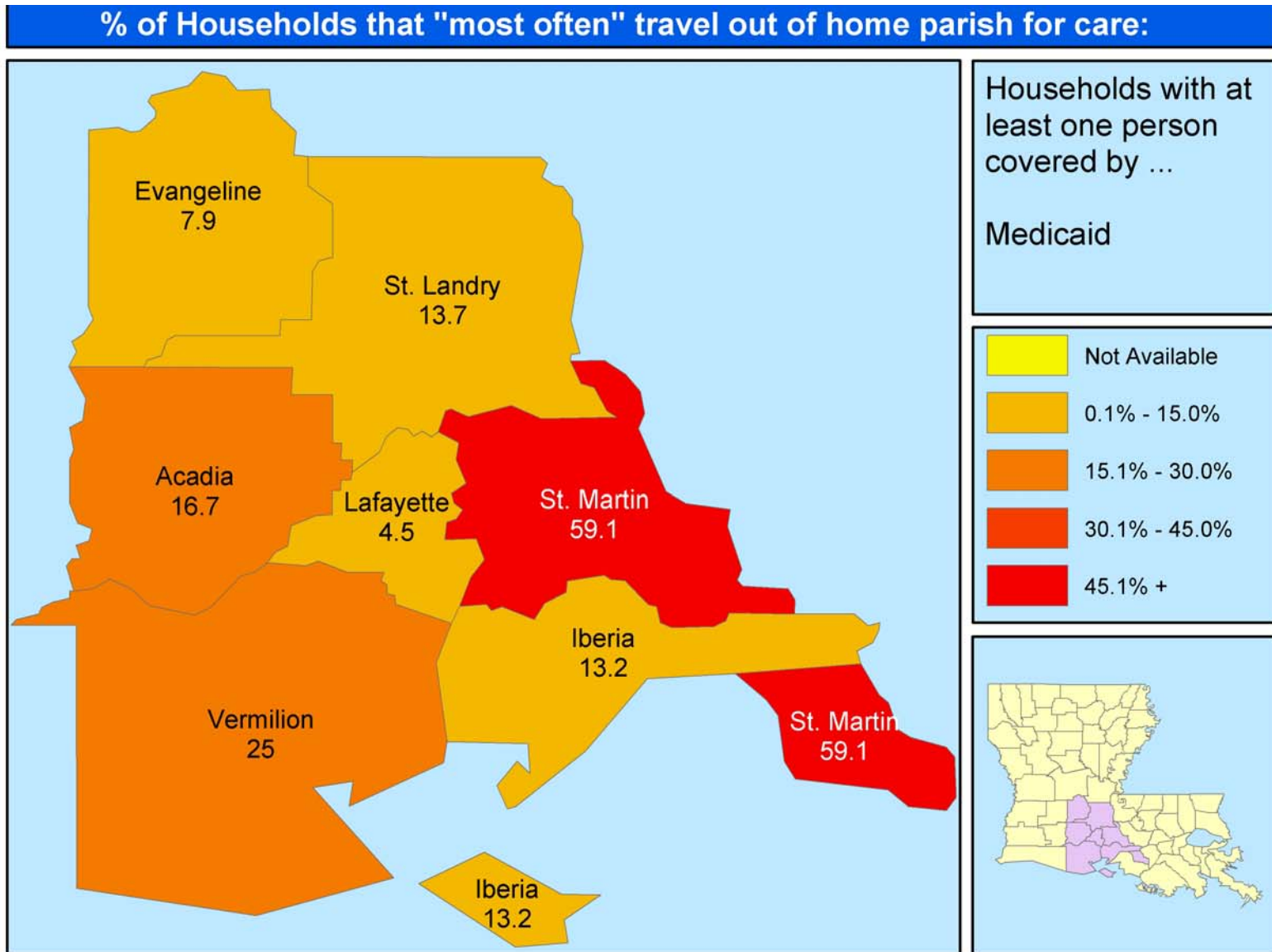
Region IV Healthcare Access Barriers*	“DDD”	Medications	Insurance	Overall
Acadia (2003)	15.2%	9.1%	28.3%	40.4%
Evangeline (2002)	29.2%	15.6%	29.2%	46.9%
Iberia (2002)	17.4%	10.0%	21.6%	33.2%
Lafayette (2002)	25.0%	7.3%	13.5%	32.3%
St. Landry (2002)	18.4%	14.7%	22.6%	36.8%
St. Martin (2001)	18.4%	14.3%	26.5%	42.9%
Vermilion (2001)	14.9%	10.9%	19.8%	33.7%
Region IV Average	19.8%	11.7%	23.1%	38.0%

* From HICA's *Louisiana HABITS* random telephone surveys of general population (in year noted)

Green => “better” than average

Red => “worse” than average

Where do Medicaid enrollees go for care?





HICA Surveillance Project:

- “Behavioral Risk Factor Surveillance System”

Project:

Telephone sampling of consumers’ health risks.

Funding & Partner:

Funds flow through Louisiana OPH – DHH from federal Centers for Disease Control and Prevention CDC.

HICA’s Purpose:

Represent Louisiana in Centers for Disease Control and Prevention’s (CDC’s) national BRFSS program, in collaboration with the Louisiana Office of Public Health / Dept. of Health & Hospitals.

HICA’s Innovation:

Advanced outgoing call center built in UL Lafayette Conference Center and employing graduate and undergraduate students and faculty.

HICA Surveillance Project:



- “Louisiana Adult Tobacco Survey (LA ATS)”

Project:

Telephone sampling of consumers’ tobacco use behaviors.

Funding & Partner:

Funds flow through Louisiana Public Health Institute (LPHI) from federal Centers for Disease Control and Prevention CDC.

HICA’s Purpose:

Represent Louisiana in Centers for Disease Control and Prevention’s (CDC’s) national ATS program, in collaboration with LPHI and with the Louisiana Office of Public Health / Dept. of Health & Hospitals.

HICA’s Innovation:

Advanced outgoing call center built in UL Lafayette Conference Center and employing graduate and undergraduate students and faculty.



HICA Surveillance Project:



- “Steps to a Healthier New Orleans BRFSS (STEPS NOLA BRFSS)”

Project:

Telephone sampling of New Orleans resident’s risk behaviors.

Funding & Partner:

Funds flow through Louisiana Public Health Institute (LPHI) from federal Centers for Disease Control and Prevention CDC.

HICA’s Purpose:

Assist LPHI in fact finding for the planning of interventions to improve behaviors and health resources in New Orleans.

HICA’s Innovation:

Advanced outgoing call center built in UL Lafayette Conference Center and employing graduate and undergraduate students and faculty.

HICA Evaluation Project:



■ “Healthy Start”

Project:

Provision of healthcare and health education services for medically indigent and at-risk mothers-to-be, with follow-up over two-year period following birth.

Funding & Partner:

Four-year funding committed by federal Health Resources & Services Administration (HRSA); contract with The Family Tree.

HICA’s Purpose:

Evaluation of effectiveness and efficiency of case and care management in nurse-family partnership program.

HICA’s Innovation:

Development of electronic health records and web-based data collection tools, coupled with geographic information systems use.

HICA Evaluation Project:

■ “Safe Schools / Healthy Students”

Project:

Ensuring safe and healthy school environments.

Funding & Partner:

Three-year funding committed from federal Department of Education, Department of Health and Human Services, and Department of Justice; contract with Lafayette Parish School System.

HICA’s Role:

Evaluation of effectiveness and efficiency of interventions in Lafayette Parish School System.

HICA’s Innovation:

Gathering of structure, process, and outcome indicator data via field interviewer support, web-based data collection tools, coupled with geographic information systems use.



HICA Evaluation Project:

- “Jail Diversion Program for Mental Health Disorders”

Project:

Diversion to appropriate services of persons with existing or new mental health and mental health/substance abuse diagnoses.

Funding & Partner:

Funds flow through Louisiana OMH – DHH from federal Substance Abuse and Mental Health Services Administration.

HICA’s Purpose:

Evaluation of effectiveness and efficiency of interventions, in collaboration with the Lafayette Parish Sheriff’s Office and the Louisiana Office of Mental Health / Dept. of Health & Hospitals.

HICA’s Innovation:

Gathering of structure, process, and outcome indicator data via field interviewer support and data collection tools, coupled with national research center.

HICA Consultation Project:



■ “Louisiana DHH IS/IT Assessment”

Project:

Review governance of Louisiana DHH information systems and technologies in support of mission-critical program offices.

Funding & Partner:

Funds committed from Louisiana DHH; contract with DHH.

HICA’s Role:

Assessment organizational, budget, and technology aspects of current Louisiana DHH IT and MIS functions; identification of a vision for the future governance of DHH IS/IT; and delineation of barriers to achieving and opportunities for realizing that vision.

HICA’s Innovation:

Application of business process review techniques, coupled with benchmarking of other states’ health agency IS/IT governance and best practices recommended by recognized sources.

HICA Design & Development Project:

- “Katrina-Rita Evacuee Medical Records Database”



Project:

Transcription of paper medical records taken at evacuation shelters by volunteers from Operation Minnesota Lifeline.

Funding & Partner:

Unfunded service project undertaken for Louisiana Office of Public Health / Dept. of Health & Hospitals – Region IV.

HICA's Role:

Design and implementation of medical records database, data entry, and data analysis of demographic and clinical factors.

HICA's Innovation:

Use of undergraduate and graduate students in Service Learning Project. Students were trained in Human Subjects Research Protections and cleared by UL Lafayette Institutional Review Board (IRB) for their involvement.

HICA - Looking Ahead

“It is very hard to make predictions, especially about the future.”

Yogi Berra

HICA Design & Development Project:

■ “Personal Electronic Health Records”

Project:

Design, development, and test deployment of a prototype portable data system that vests responsibility for management of personal health data in the healthcare consumer, not exclusively in the domain of healthcare providers and institutions.

Potential Funding and Partners:

Funds sought from Governor’s IT Initiative via competitive proposal; funds may also be sought from other sources.

HICA’s Role:

Develop and evaluate technologies, systems, and market penetration approaches to deploy PEHRs, and inform personal health choices, and aid interactions with healthcare providers.

HICA’s Innovation:

(Confidential at present.)

HICA Design & Development Project:

- “Louisiana Region IV Health Information Exchange”

Project:

Acquisition, analysis, and reporting of (electronic) data gathered in the course of care for the medically indigent.

Potential Funding and Partners:

Funds sought from Governor’s IT Initiative via competitive proposal; funds may also be sought from federal Health Resources & Services Administration (HRSA).

HICA’s Role:

Recognition of patterns of care, including matters of interest to to the Charity Hospital system, Public Health, Louisiana Medicaid program, and community / regional health planners.

HICA’s Innovation:

Personal Electronic Health Records for program participants coupled with data repository and data mining.

HICA Design & Development Project:

■ “Passive ER Surveillance”

Project:

Acquisition, analysis, and reporting of (electronic) data already gathered in the normal course of ER operations.

Potential Funding and Partners:

Funds sought from BORSF ITRS (and from Governor’s IT Initiative) via competitive proposal; funds may also be sought from federal Health Resources & Services Administration (HRSA).

HICA’s Role:

Recognition of patterns of ER utilization, including events of interest to Public Health and also non-emergency use of ER resources.

HICA’s Innovation:

Regional pooling of ER data coupled with data mining.

We can confidently predict a brighter future
for Louisiana, because ...

*“The best way to predict the
future is to invent it!”*

Alan Kay

*Questions, Comments,
or Suggestions?*

<caillouet@louisiana.edu>

*Learn more at
<http://hica.louisiana.edu>*