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INTRODUCTION

In early 1980, Louisiana State University Medical Center, Shreveport installed a Siemens Medical Systems patient management application that was a front end to a billing application rather than a fully functional clinical information system. Applications included patient registration, order entry, outpatient scheduling and patient accounting. In 2006, the planning phase to upgrade the application was approved.

Lifetime Clinical Record, a clinical data repository system, was installed in August 1998. Web-based access to Lifetime Clinical Record and other patient registration information was made available in 2001. In 2004, the Physician Order Entry application was added and piloted on the inpatient psychiatry unit.

In 2008, a plan to migrate inpatient and outpatient care providers to the web-based application, Net Access, was implemented. This application provided users with access to clinical information and functions based on their role in providing care and also equipped the university to plan for electronic Medication Reconciliation to enhance patient safety.

An information management needs assessment is distributed electronically to all levels of personnel within the organization. The assessment results are utilized in strategic planning and in improvement in the performance of the current information management functions. Staff may also submit a written request (Appendix A) to address system improvements for clinical data entry, storage and retrieval of information.

OVERVIEW OF ORGANIZATION

Louisiana State University Health Sciences Center, Shreveport (LSUHSC-S) is licensed for 459 inpatient beds (not including 40 neonatal intensive care and 25 newborn nursery bassinets). There are approximately 21,000 patient admissions to the hospital each year and more than 450,000 outpatient clinic visits annually. Care of the patient is administered through services for outpatients and inpatients and sophisticated tertiary care programs. The tertiary care programs are directed by faculty in the School of Medicine’s academic clinical departments: Anesthesiology, Family Medicine and Comprehensive Care, Internal Medicine, Emergency Medicine, Neurology, Neurosurgery, Obstetrics and Gynecology, Ophthalmology, Orthopedic Surgery, Otolaryngology/Head and Neck Surgery, Pathology, Pediatrics, Psychiatry, Radiology, Urology, and Surgery and surgical subspecialty sections.

The LSUHSC-S Hospital provides a Level I Trauma Center as well as a Burn
Center, Pediatric Intensive Care, Neonatal Intensive Care, Medical Intensive Care, Surgical Intensive Care, Neurosurgery Intensive Care, Maternal –Fetal Unit, and a 51-bed Inpatient Psychiatric Unit. Other subspecialty programs provide the basis for regional tertiary care programs which include cardiology, endocrinology, hematology/oncology, oral surgery, infectious disease, nephrology, neurology sleep disorders, rheumatology, genetics and bone marrow transplantation.

GOAL OF INFORMATION MANAGEMENT

To support clinical medicine, an electronic health record, Pelican, has been developed. Pelican is an HER which allows patient and family centered medical care delivered through health system-wide coordination of access to services, quality care and cost efficiency across the care delivery continuum, independent of location, and supported by integrated clinical and business process and advanced information management.

- Patients, families and caregivers have the information required to navigate the LSU Health System.
- Patients, families and caregivers receive timely and appropriate information and services.
- Caregivers identify the appropriate care needs of patients and families.
- Caregivers deliver safe, appropriate, efficient and effective care to patients and families.
- Caregivers provide ongoing care management to ensure maximum effectiveness of and satisfaction with care provided.
- Reliable and valid clinical, functional, satisfaction, safety and cost outcomes data is stored, retrieved, analyzed and made available to caregivers in a timely manner.
- One-stop scheduling and registration.
- One-time collection of patient financial and clinical information.
- Patient eligibility and financial obligation is known.
- Charges are driven by documentation at point of care.
- Easily understandable and accurate bills are created in a timely manner.
- Immediate answers to patient financial inquiries can be provided.

Further enhancements in billing and reimbursement will be made through the development of an enterprise imaging system so that the large volume of paper documentation (required by registration, during manual billing processes, and in receipt of paper documentation and checks from patients) can be viewed electronically by all billing and reimbursement personnel throughout the enterprise. A unified bill that combines all patient charges, both hospital and professional, continues to be a long-range goal. Infrastructure projects for the future include enhancements of the local area network, development of a new computer operations center, and the development of hot-site backup capabilities as an added protection during natural disasters and other emergencies.

The planning and development of a data warehouse is needed to provide tools to analyze clinical costs and to develop the cost report. The clinical component of the data warehouse will also be important for clinical research, while the financial component will
be used both for administrative and research purposes. The strategic direction for medical education will involve increased use of information technology by students in clinical settings, including the use of handheld and portable devices to access and record patient information.

In further support of research and educational capabilities, enhancements will be made in the wide-area network infrastructure, in the expertise available for managing the Core Lab, and in the expertise for undergraduate teaching in medical informatics. The Louisiana Optical Network Initiative (LONI) was fully operational in early 2007 and provides researchers statewide with access to very high-speed (40Gbs) national networks, particularly National Lambda Rail, Internet 2, and the commodity Internet (Internet 1). To support education in medical informatics and the upcoming collaborative bioinformatics degree program (with LSU-S and La Tech), a new faculty member will be hired in the Department of Bioinformatics and Computational Biology. The research Core Lab is rapidly expanding as is the need for bioinformatics support. These systems are highly complex, and additional staff will be needed over the next several years to manage these sophisticated systems on a daily basis.

## SCOPE OF INFORMATION MANAGEMENT SYSTEMS

**Epic Electronic Health Record**

LSU utilizes the Epic Electronic Health Record which is an integrated suite of health care software centered on a MUMPS database. The applications support functions related to patient care, including registration and scheduling; clinical systems for doctors, nurses, emergency personnel, and other care providers; systems for lab technicians, pharmacists, and radiologists; and billing systems for insurers.

- **EpicCare Inpatient** provides documentation of inpatient care by healthcare providers.

**Physicians:** identify their patients and patients needing consults; search for patients’ manage treatment team assignments; review patient’s charts, including clinical summaries, notes, orders, I&Os, lab results, prior admissions and visits, correlations between events and vitals; rounding activities including managing orders, reviewing and updating problem lists, cosigning orders, writing notes and consults and filing charges; admission, discharge and transfer activities including reviewing and updating problem list, allergies, and histories; cosigning orders; reconciling medications and recording implants, dosing weight, etc.; and chart completion activities including cosigning, e-signatures, document/dictation, pending notes and other signatures.

**Nurses:** manage patient assignments; review charts including acknowledging orders, lab results, notes, prior admissions and visits, and daily tasks; administer medications; troubleshoot medication administration; collect labs including printing labels, changing blood specimen collection status, and documenting POCT; document vitals and assessments; document intake and output including
reviewing, starting and changing infusions, documenting IVs, preparing, starting and stopping blood transfusions and documenting PCA meds; admit patients including releasing orders, documenting allergies, review PTA meds and complete assessments; document care plans and patient education; manage orders; file charges; transfer and discharge patients.

- **Beacon** coordinates the Oncology care and documentation, including consults, treatment plans, problem lists, ongoing patient care and medication dosing. Beacon also allows for staging the patient’s cancer, modifying stages and routing staging information. Beacon supports all Treatment Plan Management including: creation, navigation and modification of the treatment plan and adding, deleting, signing and releasing of all orders related to the plan. Beacon supports ongoing treatment including: documenting office visits; viewing lab results and medication administrations; adding, adjusting and discontinuing treatment cycles, plan, orders, medications; communicating with scheduling staff about future treatments. Beacon also allows for tracking medication dosing including viewing cumulative dosing information; entering dosing information for external treatment; documenting external treatment and AUC dosing.

- **Stork** allows for complete documentation and monitoring of Obstetrical patients during triage, labor and delivery. Users may view patient’s obstetric history, including prenatal results and procedures. Document and view labor information, such as trends in flowsheet data for vitals and length of contractions. Triage documentation includes: patient’s chief complaint, dating information, reviewing pregnancy related test results, entering external test results, updating patient’s obstetric history and allergies, vital signs, triage documentation, cervical exam, point-of-care tests, pregnancy care providers, and medications. Labor documentation includes the assessments, importing and validating data from devices, medications, IVs, Intake and Output, infusions, care plans, problems, goals, and education. Delivery documentation includes creating the newborn chart, documenting the delivery and delivery method, neonatal of fetal demise, and review mother and baby’s charts.

- **EpicCare Ambulatory** provides complete documentation of outpatient care by healthcare providers.

**Physicians:** Prior to a patient’s visit - view scheduled outpatients; view patient summary prior to visits; review a patient’s chart; filter information on a patient’s chart; During a patient’s visit – view chief complaint; review allergies, current medications and history; update patient’s allergies, current meds, history and problem list, verify pharmacy benefits, record a visit diagnosis and enter ICD-9 codes, write a progress note or procedure note, add images, sign notes, verify patient’s pharmacy, write new orders and associate diagnoses with orders, reorder or discontinue meds, cancel signed orders, write patient instructions, print after visit summary, enter level of service to charge for visit and file charges; After a patient’s visit – send a letter to another clinician, close the encounter, make changes to closed encounters, finish documenting a past visit and review results.
**Nurses:** view schedules including several clinician’s schedules simultaneously, flag patients and change clinician for an appointment; review the patients chart, determine tests, immunizations and meds needed, and review a patient’s past visits; room the patient, document chief complaint, vital signs, allergies, pharmacy benefits, current meds, history, write notes, and sign up patient for My Chart; place orders for physicians, associate diagnoses with orders, enter POCT, and document immunization administration; complete a visit with follow-up instructions and visit summary; and document phone calls.

- **ASAP Emergency Department Information System** is integrated with Epic's other clinical applications, it combines access to comprehensive patient information with active decision-support functionality to reduce their wait times and transcription costs while improving patient care. Providers may manage patient assignments, place orders and review results, review and order medications, document and review notes, admit and discharge patients and close encounters.

- **Pharmacy Willow Inpatient and Outpatient Pharmacy System** provides medication ordering and administration process, linking pharmacists, ordering physicians and nurses to a single order record. Pharmacists can monitor medication treatment and medical outcomes, patient safety, adverse effects and control costs. Orders from EpicCare flow directly to Willow for verification and dispensing and also appear automatically on the MAR. Pharmacy staff has direct access to the chart during verification, allowing them to play an active role in patient care, and verified orders can be routed to the appropriate dispensing device or to pharmacies outside the system. Changes made by a pharmacist are also automatically updated and available for other users.

- **Operating Room OpTime Operating Room Management System** allows users to schedule utilization and peri-operative documentation in both inpatient hospitals and ambulatory surgical centers. OpTime includes tools for all key perioperative processes including scheduling, preference card management, anesthesia record keeping, pre-op assessments, procedure record and PACU documentation.

- **Anesthesia Epic Anesthesia Information Management System** provides full ordering and clinical documentation tools for all anesthesia services. It is integrated with OpTime Operating Room Management and EpicCare EMR to streamline workflows across roles. Epic Anesthesia provides support for pre-op evaluations, pre-admission testing, intra-op record keeping, recovery care and post-procedure care, including inpatient follow-ups and post-op phone calls.

- **Health Information Management** system provides easy-to-use tools to simplify medical records management tasks, including:
  - Chart Deficiencies - monitors each chart, tracking delinquencies, generating follow up messages, and offering tools for resolving
deficiencies - ensuring that medical charts contain the critical information clinicians need and improving reimbursement.

- **Release of Information** - allows users to track and fill information requests, generate charges, and collect payments for this service.

- **Coding and Abstracting** - stores configurable coding information required for DRGs and other groupers calculated by third-party coding products.

- **Scheduling**
  
  **Cadence Enterprise Scheduling** allows users to schedule all visits and procedures. Allows users to keep appropriate slots open and consider patient preferences. Cadence provides context-specific instructions, conflict checking and solutions for complicated appointment searches. Comprehensive rules-based scheduling features accommodate the needs of each clinician, room and piece of equipment.

- **Enterprise Registration** - Inpatient Access
  
  **ADT/Prelude Enterprise Inpatient Registration** monitors bed utilization and allows users to manage hospital stays from pre-admission through discharge; including: preadmissions, admissions, registrations, bed planning and managing environmental services, direct admissions, patient transfers, managing patient transports and patient discharges. Clinicians can access census workspace that allows them to view and update current information on patients in their care. Workqueues allow nurses and other staff members to plan for upcoming ADT events, follow up on missing or inconsistent data and assess utilization.

- **Identity**

  is Epic’s Enterprise Master Patient Index (EMPI). The EMPI controls ID management and allows users to correctly identify records even if each record has more than one type of ID. Identity allows users to find the correct record by maintaining an index of all IDs for each record to prevent duplicate patient records. Identity provides tools for preventing, reporting on, merging and unmerging duplicate records; reviewing changes made to IDs; and controlling how IDs are displayed and generated. Specific duplicate reconciliation activities include: chart correction workspace, duplicate patient detection and management, overlay resolution, patient contact mover and patient merge and unmerge.

- **Hospital Billing**

  **Resolute Hospital Billing** coordinates inpatient and outpatient billing for hospitals. Allows staff to streamline billing and collection processes, reduce payor denials and minimize A/R days. Drawing information directly from the EpicCare clinical system, Resolute automatically completes appropriate fields and submits claims in HIPAA-compliant transaction formats. Extensive rules-based claim scrubbing assists with reimbursement and minimizes rejected claims. Comprehensive reporting tools allow executives to track and report on all aspects of financial performance.
- **Professional Billing Resolute Professional Billing** allows users to monitor A/R days, produce accurate claims, paperless collection processes and streamlines data entry. The billing office tracks revenue from individual billing entities, divisions or markets. Use of the configurable library of medical necessity checks and charge/claims scrubbing routines helps reduce denials and satisfy payors. The system sends clean, accurate claims using a variety of HIPAA-compliant transaction formats. Resolute's comprehensive reporting tools allow executives to analyze financial performance to support informed operational decisions.

- **My Chart** is an Epic application that allows patients quick and easy access to their medical records using the internet. The access allows patients to view test results; read and send messages; request medication refills and schedule appointments. Access may be granted at the time of the patient encounter or by requesting access from the Health Information Management Department.

**Handheld Devices:**
- Canto
- Haiku
- Rover

**Epic Reporting:**
- Hyperspace
- Reporting Workbench
- Clarity

**Epic Technical Applications:**
- Bridges
- Chronicles
- Client Systems
- Hyperspace
- Data Courier
- Interconnect
- Server Systems

**Epic Resources:**
- Epic UserWeb
- UserWeb Forum
- Galaxy
- Epic Glossary
- Data Handbook
- Report Repository
- Community Library
- E-Learning
- Master File Reference
Siemens Health Services Radiology Information System

The Radiology Management System was upgraded to Siemens Syngo Radiology Information System v27.2, July 2006. The RIS is tightly interfaced with INVISION, Dictaphone and GE PACS. It provides for systematic control of all the detail involved in the flow of orders, charges and results in the Radiology Department. It incorporates Patient Management, Orders, Clinical Observations and Results, Generalized Indexing, Cost Accounting and Materials Management. The system controls and enhances radiology processes such as: documentation, tracking and reviewing historical examination and patient data. It supports a paperless workflow through departmental and individual communications using interactive documents and broadcast messaging as well as providing a means to electronically capture and store necessary documentation and patient’s signature. Bar code technology assists with film management. Many of the Radiologists are now documenting using structured notes available in the Syngo RIS rather than dictating their notes. This system supports all of the following applications:

- Word Processing
- Automatic Fax
- Mammography
- Medical Image Management System
- Radiologist Workstation

GE PACS Picture Archiving and Communications System

Provides the ability to store radiographic images created by the modalities, and to communicate those images to workstations/systems for review or processing. The review can be done at multiple locations throughout the hospital, allowing multiple people to view the images immediately and simultaneously. Final reports are stored with the exams for easy access. The PACS includes the following major subsystems:

- Primary server system to receive images and handle user access
- Image storage and database management
- Workstation and Web based software for image manipulation and report review
- Interface to RIS

CLIQ

Repository of historical documentation including information previously available in the Siemens Medical Systems Lifetime Clinical Record (LCR) which provides an integrated lifetime view of a patient’s significant clinical data throughout the health care enterprise.
Other Automated Information Systems
- 3M Encoder
- PeopleSoft Accounts
- Payable
- Misys Clinical Lab and Anatomic Pathology
- Dictaphone Physician Dictation System
- Micromedex
- InterQual (Quality Improvement)
- Obix O/B Clinical Information System
- Med Select (Medication Dispensing System)

Other Network Systems
- Sunrise Disease Management System (Hematology/Oncology Information System)
- WITT (Cardiac Cath Lab)
- MUSE
- Mosique
- Cirius (Patient Accounting Claims Scrubber)
- Laser Fiche (Document Imaging System)
- EndoWorks 7 - Endoscopy Clinic and FWCC Endoscopy

Non-Network Applications
- Microsoft Office Products
- Visio
- Fox Pro
- Dbase
- Approved Anti-Virus Software
- Print Shop

CUSTOMERS OF INFORMATION
There are multiple users of information produced by LSUHSC-S. Based on the assessment, surveys and committee findings, listed below are some of customers of information provided:
- Attorneys
- Civic Organizations
- Collection Agencies
- Community
- Dialysis Centers
- Employees
- Governing Board
- Insurance Companies
- Insurers of LSUHSC-S
- Libraries
- Library System
- Managed Care Organizations
- Medical/Surgical hospitals
- Nursing Homes
- Nursing Schools
- Other Businesses
- Other Healthcare providers
- Patients
- Patient family members
- Physicians
- Physicians’ office staff
- Professional Organizations
- Rehabilitation facilities
- School Districts
- Universities
- Vendors
- Visitors
- Volunteer Services
- LSU (Louisiana State University) Systems Office

INFORMATION REPORTING

A. Voluntary Reporting
   - American Hospital Association Information Request
   - National Library of Medicine
   - EMS Data to appropriate hospital
   - University Health Consortium

B. Regulatory Reporting
   - Environmental Protection Agency
   - Joint Commission on Accreditation of Healthcare Organizations
   - OSHA
   - American College of Pathologists
   - State Board Review
     - Nursing
     - Pharmacy
     - Physicians
     - Physician’s Assistants
     - Clinical Laboratory Medical Technologists
     - Radiology Technicians
     - Respiratory Practitioners
Occupational Therapists
- Physical Therapists
- Louisiana Department of Public Health
- Louisiana Department of Health & Hospitals/Medicaid
- Louisiana Hospital Association
- Federal Government
- Internal Revenue Service (IRS)
- CMS (Center For Medicare Medicaid Services)
- Social Security Administrations
- Centers for Disease Control (CDC)
- State Tumor Registry
- American College of Surgeons
- National Practitioners Data Bank
- University Healthcare Consortium (UHC)

AVAILABILITY, INTEGRITY AND CONFIDENTIALITY OF DATA

Security, that is, availability, integrity and confidentiality, of patient information is managed in accordance with Hospital Policy and the Medical Staff Bylaws, State and Federal law, HIPAA policies, as well as other Hospital and Departmental policies and procedures (Appendix B).

Staff is required to sign a confidentiality agreement upon employment (Appendix C).

At the time of initial employment all staff shall be oriented in the principles of maintaining confidentiality. This includes the need to protect the privacy of patients as well as safeguard all information assets of LSUHSC-S. HIPAA education is required for all employees. Education shall include the responsibilities of each individual and the consequences of failing to adhere to the hospital policies.

Privacy and security violations will be thoroughly investigated and appropriate actions taken by hospital authorities.

IT Security Procedure v1.0, Section 10.1 states:

All information, regardless of form or format, which is created or used in support of LSUHSC-S business activity, is a business asset of LSUHSC-S. Confidential information is a business asset that must be protected from its creation, through its useful life, and authorized disposal. It should be maintained in a secure, accurate, and reliable manner and be readily available for authorized use.
Patient, personnel, financial and other business records all contain confidential information.

Policy and procedure changes that are related to the protection of confidential information are provided to staff on an ongoing basis as needs dictate.

LSUHSC-S has developed hospital policies and procedures that allow data/information to be retrieved on a timely basis without compromising the data/information’s security and confidentiality.

A unique sign-on and password is assigned to all system users. Penalties may be invoked for sharing access methods with anyone without the permission of appropriate LSUHSC-S authorities.

Computer access to the various software applications are approved by Department Director or designee and is based upon job responsibilities. All employees, medical staff members, volunteers, students, and other designated staff shall be granted access to the information needed to perform their jobs. The maximum levels of access to the data shall be defined and approved by the data owner or designee.

Each clinical and or ancillary department head or designee shall assess each staff member’s security access to information systems and shall educate those users regarding their access and the importance of maintaining availability, integrity and confidentiality of information. Assessments should include consideration of the following elements:

- what information does each individual need access to
- the obligation of the individual to only access the minimum amount of information necessary to do their job and the obligation of the individual who has access to information to keep it confidential
- what mechanisms are in place to secure information against unauthorized intrusion, corruption and damage.

LSUHSC-S has a functioning mechanism designed to safeguard records/information against loss, destruction (intentional or non-intentional destruction), tampering and unauthorized access or use.

In the Disaster Management Plan there is a plan for routine backup procedures are defined to address the needs of Computer Services, applicable departments and responsible vendors. Storage media shall be stored in a secure and restricted site in a remote location as deemed appropriate by management. All storage media must be labeled as confidential and stored in an area restricted to authorized personnel. Audit trails of all accesses shall be periodically reviewed for compliance with hospital policies.
The Medical Staff Bylaws and Hospital Policies dictate that medical records may only be removed from the hospital’s jurisdiction and safekeeping in accordance with a court order, subpoena, or legal statute.

Physical access to the Health Information Management Department is restricted. The department’s main entrance is locked at 6:00 p.m. daily and unlocked at 6:00 am. On weekends and holidays, the door is locked on Friday and unlocked at the 6:00 am the next business day. Patient records requiring additional security are maintained in a secure file within the Health Information Management Department. Locations of records checked out of the department are tracked utilizing an automated chart location system. Patient records are maintained in secure locations (not accessible by the public, visitors, etc.) in the Health Information Management Department, on the nursing units, in the outpatient clinic areas, and in requesting department areas.

**EDUCATION STRATEGY for INFORMATION MANAGEMENT**

LSUHSC-S individuals who generate, collect, analyze data/information are educated and trained in the principles of information management. Training in the use of departmental software programs is provided to new department staff in order to meet the essential functions of their job descriptions. Additional training will be provided as necessary. These individuals are educated and trained to enable them to:

- Understand security and confidentiality of data/information.
- Assist in use of data/information in decision making.
- Assist in interpreting data.
- Collect unbiased data.
- Educate/support the participation of patients and family in care processes.
- Assess/improve patient care processes over time through the use of indicators.
- Search the literature (knowledge-based information), to assess the value of collected information and procure that needed to interpret data, assist in decision making and provide educational resources.

In addition to the training programs at LSUHSC-S, the following tools are resources that are utilized for educating individuals about information management principles:

**Employees**
- Pelican Training
- Hospital Policy & Procedure Manual
- Administrative Directives
- Chancellor’s Memorandums
- Department Policy and Procedure Manuals
- Equipment Operation Manuals
- Quality Management Training
- Quality Improvement findings
- Hospital Education Council
- Department Inservice Programs
- Job Descriptions
- Medical Library
- Material Safety Data Sheets
- Patient Care Support Newsletter
- Clinical Information and Patient Registration Training
- Project Care Education, including basic PC Training
- Computer Services Website
- Infection Control Manual (BIT)
- LSUHSC-S Learning Management System ([http://training.lsuhscshreveport.edu/](http://training.lsuhscshreveport.edu/))
- Video programs for continuing education
- Attendance at outside professional workshops/seminars
- Payroll Employee and Supervisory Manual
- Internal Employee Website Portal ([http://myhsc.lsuhscshreveport.edu](http://myhsc.lsuhscshreveport.edu))

**Patients**
- Patient Handbook
- My Chart
- Krames Educational Program integrated in Pelican
- Notice of Privacy Practices
- Consent Forms
- Discharge Instruction Forms
- Support Groups
- Patient Rights/Responsibilities
- Preoperative Instructional Information
- Information on Food-Drug Interactions
- Information on Safe Use of Medications
- Information of Safe Use of Medical Equipment
- Information Regarding Community Resources
  Patient Education Programs, i.e., television, pamphlets, etc.

**Medical Staff**
- Pelican Training
- Medical Staff Meetings
- Weekly Cancer Conferences
- Quality Performance and Improvement findings
- Medical Library
- Departmental meetings
- Special meetings/conferences
TRANSMISSION OF INTERNAL AND EXTERNAL DATA / INFORMATION

The format and methods for disseminating data/information are standardized to facilitate transmission of data/information in a timely and accurate manner, whenever possible.

LSUHSC-S provides, but is not limited to, the mechanisms for the transmission of data listed below:

Internal

* Voice
  * Physician Dictation Equipment
  * Telephone
  * Two Way radios
  * Hospital Voice Paging System
  * Nurse Call System
  * Cell Phones

* Data/Information
  * Beepers
  * Cell Phones
  * Fax
  * Personal Computer/LAN System
    * Paper (memoranda, reports, etc.)
    * Distributed Systems Equipment/LAN System

* Alert Devices
  * Fire Alarm
  * Panic Buttons
  * Code 1 Personal Protection Devices
  * Distributed Systems Equipment/LAN System
  * Text Alert

External

* Fax

* Attendance at outside workshops/seminars
* Medical Staff Bylaws Rules and Regulations
* Chancellor’s Memorandums

Community

* Health Fairs
* Support Groups
* Physician Referral Program
* Patient education programs
* Medical Library
LSUHSC-S strives to ensure that data is collected in a timely, economical and efficient manner and with the degree of accuracy and completeness necessary. Coordination between Health Information Management and Computer Services serves to ensure that consistent ICD-9-CM, CPT-4 and HCPCS coding is used between automated and non-automated information systems.

Information is collected in accordance with the Uniform Hospital Discharge Data set (UHDDS), 1992 Uniform Billing (UB-92 requirements), the CMS 1500 billing form, ORYX reporting and other minimum data sets. Standardized coding and classification systems include, but are not limited to, ICD-9-CM, ICD-O, or CPT-4. Edit checks are a part of the coding software applications to ensure the validity and accuracy of the code, based on the patient’s gender and diagnosis.

Coding of clinical data for billing and inclusion in the facility’s clinical database is the responsibility of the Compliance Department. ICD-9-CM is used to classify diagnoses and procedures. Coders adhere to all applicable coding conventions and AHA Coding guidelines. CPT-4 and HCPCS codes are used for procedure coding when required for billing. The accuracy of coded data and related abstract data is monitored through the various policies and procedures of the department and through monitoring of identified types of cases. Admitting diagnoses and procedures are entered for all patients. A random sample of inpatient record coding and outpatient record coding is conducted and reviewed with appropriate staff.

Periodically, third parties (i.e. insurance companies, CMS, PRO) may perform a review of previously coded records to identify opportunities for education and improvement of accuracy or consistency. Completeness, accuracy and timely completion of medical records are monitored on an ongoing basis according to the policies and procedures of the Health Information Management Department and the medical staff.

LSUHSC-S has implemented quality control measures to minimize bias in the data collection and to assess the data’s reliability, validity and accuracy on an ongoing basis.

**PLANNING METHODOLOGY**

For leadership to achieve its goal of providing appropriately managed information, the leadership must begin by planning for services. LSUHSC-S leadership team
developed a Strategic Plan that describes the long-range, strategic and operational plans for the facility. In addition, the leadership develops a capital and operating budget that describe resource allocations annually.

Computer Services must provide leadership with a minimum of the following to facilitate the budgeting process:

- Applicable information from the organization’s strategic planning process that indicates any needs to further refine the fiscal resources allocated for providing patient care.
- Ongoing review of the organization’s plan for staffing for services. Other sources that address the adequacy of fiscal and other resources for providing patient care.
- The process used for measuring Department/Service performance relative to the approved budget, including the methods for measuring and acting on identified and defined variances.

A. The Medical Library

The LSU Health Sciences Library in Shreveport serves as a principal information resource for the School of Medicine, the University Hospital, the School of Graduate Studies, and the School of Allied Health Professions. The library occupies 39,000 square feet over three floors, with seating for 269 users at tables, carrels, and in study rooms. The library also houses five small-group teaching rooms with 46” flat screen monitors, five photocopiers, two scanners, and a fax machine. The library has two state-of-the-art computer labs. One has twenty-eight Windows XP computers and a projection system for teaching. The second computer teaching lab has twenty workstations with Windows XP, a projection system for teaching, and teleconferencing capability. Network printing is available from stations in either lab. Wireless access to the campus network using the 802.11 protocol is also available throughout the library’s three floors.

The library provides a variety of information services including answering basic reference questions, providing assistance in online searching, mediated searching of online databases, e-mail and web-based reference service, interlibrary loan, and user education. Network access is available to over 111 databases. The library’s collection includes over 190,000 print volumes (books and bound journal volumes). The Library also provides access to 600 electronic books. The Library currently receives/ accesses nearly 2,600 print and/or electronic journals. Most of these journals are available in electronic format; fewer than 4% of journal titles are limited to print-only availability. The Library also maintains an audiovisual collection
that includes audio presentations, videotape and DVD materials, slides and X-rays.

Articles from journals that are not in the collection may be obtained through interlibrary loan. Users place interlibrary loan requests using a simple online form. These requests are routed preferentially to libraries within the region. In most cases, these requests are filled electronically, permitting the article to be retrieved on the user’s personal computer. As technology continues to develop, electronic service will allow even more rapid access to crucial journals and books.

The Library is open 101.5 hours per week: 7:30 a.m. to 11 p.m. Friday, 9:00 a.m. to 11 p.m. Saturday and 1 p.m. to 11 p.m. on Sunday. However, remote access to the online catalog, databases, and electronic resources is available 24 hours a day, 7 days a week through either the institutional VPN or the library’s proxy server. Reference questions may also be submitted after hours via e-mail, and the reference staff will provide a reply by the end of the next business day.

In summary, the LSU Health Sciences Library in Shreveport provides LSUHSC-S students and faculty with ready access to critically important information required for research, patient care, and teaching.

B. Poison Control

The pharmacy, medical and nursing staff has access to poison-control information by the following mechanisms:

- The poison control phone number (1/800/256-9822) is available at each nurse station, and throughout the outpatient clinic areas and emergency areas.
- Micromedix Toxicology/Poisindex is available on the hospital’s computer system and may be accessed from nursing units, pharmacy and computers accessing the mainframe.
- Applicable Material Safety Data Sheets (MSDS) located in each Department for Hazardous Materials used in the area. Complete sets are located in the Safety Office.
- Reference materials maintained in the Pharmacy Department and the Library.

C. Formulary

A Formulary is reviewed annually and provided to all physicians through the LSUHSC-S Web Site.
Monthly, calendar year and fiscal year end statistical reports are posted to Public Folders for access by internal departments on a monthly basis. Reports can be run in real time or retrospective.

- Application Reports
- Work Bench Reporting
- Clarity/Logicity Reporting
- Revenue Reporting
- Comparative Report of Professional Performance and Outpatient Services

The statistics include information by hospital service and by nurse stations related to the number of active/staffed beds, admissions, patient days, average daily census, percent of occupancy, discharges, deaths and length of stay, outpatient clinic visits, operative procedures, deliveries, cesarean sections, etc.

Ad hoc or customized reports may be obtained from Computer Services, Health Information Management and/or from the departmental systems administrator upon request, i.e., Physicians’ Billing Information Coordinator, Clinical Laboratory Systems Administrator, etc. Information can be obtained on defined fields within the database.

**COMPARATIVE DATA**

The hospital uses external data and information to identify areas in which its own performance deviates from expected patterns. In addition, the hospital contributes its own information to external reference databases. As a part of its information management activities, the hospital exchanges clinical and knowledge-based data and information with other health care organizations. These activities help the hospital develop its future capabilities and goals. Security and confidentiality of data is maintained according to hospital policies and procedures, contract agreements, applicable laws. Information is exchanged with the following agencies/institutions:

- University Hospital Consortium (benchmarking studies with other university teaching and other comparisons, such as complications, mortality, LOS, Average Cost/Charge, etc.)
- Louisiana Health Care Review (Cooperative studies with Louisiana Peer Review (PRO) and Core Measure Data reported to JCAHO)
- InterQual Criteria (SIM-A for invasive procedures) MedPar
- Analysis
- MECON
- Center for Disease Control (CDC)
- CMS (Center for Medicare Medicaid Services) Louisiana
- Department of Health and Hospitals
- National Association of Children's Hospital's and Related Institution
Performance Improvement

As health care evolves in response to technological development, the flow and dissemination of information becomes increasingly important in guiding the future of health care. Performance improvement is defined by the following:

- Customer satisfaction
- Commitment and dedication to continuous improvement
- Reduction of costs and services
- Timeliness of products and services

Performance Improvement is supported based on the collection and analysis of data. Examples of projects supported by Health Information Management and Computer Services are:

- Analysis of resource utilization by case DRG or ICD-9-CM code Analysis
- of trends in cost, quality and volumes of services
- Re-engineering and re-design of department and function workflow

Internally Generated Data/Information to Support PI (includes but not limited to)

- Needs Assessment
- Monitoring and Evaluation Summary
- Quality Indicators
- Standard and ad hoc reports from Health Information Management
- Performance Improvement Evaluations
- Adverse Drug Report Forms
- Variance Reports
- UHC Clinical Data Base (for comparative reports) Patient
- Satisfaction
- Focus Studies

Externally Generated Data/Information to support PI (includes, but not limited to)

- University Hospital Consortium (Benchmarking studies with other university teaching hospitals)
- CMS (Center for Medicare Medicaid Services)
- Louisiana Health Care Review (Cooperative studies with the Louisiana Peer Review Organization (PRO))
- InterQual Criteria (SIM-A for invasive procedures) MedPar
- Analysis
- MECON
- Other National Registries as specific to the indicator being monitored
- National Association of Children's Hospital's and Related Institution (NACHRI)
RECORDS RETENTION

Lifetime Clinical Record (LCR) serves as a temporary data repository for historical clinical results and reports. LCR retains approximately seven years of inpatient and outpatient data from the patient management and patient accounting system, including diagnoses and procedures. This historical data will permanently stored in CLIQ.

Louisiana law requires that medical records be retained for a minimum of 10 years following the last discharge. However, due to the continued need for patient care, research, education, records are retained for an indefinite period of time.

Administrative Directive 6.9 defines Records Retention Schedule for LSUHSC-S as it relates to Administrative Correspondence, Contract Administration, Supplies and Services, Personnel, Purchasing, Student, Medical Records/X-Rays.

Each department is responsible for retaining documents that relate to employees and departmental meetings:

<table>
<thead>
<tr>
<th>Record</th>
<th>Retention Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acknowledgment of TACs Policies/Procedures Form</td>
<td>Duration of employment, plus 1 year</td>
</tr>
<tr>
<td>Competency Assessment Documentation</td>
<td>Duration of employment, plus 1 year</td>
</tr>
<tr>
<td>Confidentiality Statement</td>
<td>Duration of employment, plus 1 year</td>
</tr>
<tr>
<td>Inservice Education/Training Records</td>
<td>Duration of employment, plus 1 year</td>
</tr>
<tr>
<td>Leave Reports</td>
<td>2 years</td>
</tr>
<tr>
<td>New Employee Orientation Checklist</td>
<td>Duration of employment, plus 1 year</td>
</tr>
<tr>
<td>Pay reports</td>
<td>2 years</td>
</tr>
<tr>
<td>Department Minutes</td>
<td>6 years</td>
</tr>
<tr>
<td>Performance Planning/Evaluation Reviews</td>
<td>Duration of employment, plus 1 year</td>
</tr>
<tr>
<td>Payroll adjustment forms/leave approval forms</td>
<td>2 years</td>
</tr>
</tbody>
</table>

The following represent minimum retention guidelines for other documents and/or records maintained for patient care activities:

<table>
<thead>
<tr>
<th>Record</th>
<th>Suggested Minimum Period of Retention</th>
<th>Responsible Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABO and RH types</td>
<td>5 years</td>
<td>Laboratory</td>
</tr>
<tr>
<td>Annual Reports</td>
<td>Permanently</td>
<td>Responsible Departments</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>Audit reports</td>
<td>Permanently</td>
<td>Internal Auditor</td>
</tr>
<tr>
<td>Birth Registry</td>
<td>Permanently</td>
<td>Labor &amp; Delivery</td>
</tr>
<tr>
<td>Blueprints</td>
<td>Permanently</td>
<td>Physical Plant</td>
</tr>
<tr>
<td>Clippings (historical)</td>
<td>Permanently</td>
<td>Informational</td>
</tr>
<tr>
<td>Record</td>
<td>Suggested Minimum Period of Retention</td>
<td>Responsible Department</td>
</tr>
<tr>
<td>-------------------------------------------------</td>
<td>--------------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Construction projects</td>
<td>Permanently</td>
<td>Physical Plant</td>
</tr>
<tr>
<td>Controlled substance inventory</td>
<td>5 years</td>
<td>Pharmacy</td>
</tr>
<tr>
<td>Daily Census Reports</td>
<td>5 years</td>
<td>Health Info Mgt.</td>
</tr>
<tr>
<td>Death Registry</td>
<td>Permanently</td>
<td>Admitting Office</td>
</tr>
<tr>
<td>Delivery Room Log</td>
<td>Permanently</td>
<td>Labor &amp; Delivery</td>
</tr>
<tr>
<td>Disease Index</td>
<td>10 years</td>
<td>Health Info Mgt.</td>
</tr>
<tr>
<td>Electrocardiogram tracings</td>
<td>3 years post last date of treatment</td>
<td>Cardiology Department</td>
</tr>
<tr>
<td>Electroencephalogram tracings</td>
<td>3 years post last date of treatment</td>
<td>EEG Department</td>
</tr>
<tr>
<td>Endowments, trusts, etc.</td>
<td>Permanently</td>
<td>Informational Services</td>
</tr>
<tr>
<td>ER reports</td>
<td>Permanently (as a part of the medical record)</td>
<td>Health Information Mgt.</td>
</tr>
<tr>
<td>Fetal heart monitoring strips</td>
<td>3 years post last date of treatment</td>
<td>Dept. of O/B-GYN Health Info Mgt.</td>
</tr>
<tr>
<td>Final disposition of blood and components</td>
<td>5 years</td>
<td>Laboratory</td>
</tr>
<tr>
<td>Food Costs</td>
<td>5 years</td>
<td>Nutritional Services</td>
</tr>
<tr>
<td>Garnishments records</td>
<td>6 years</td>
<td>Payroll</td>
</tr>
<tr>
<td>Hospital claims</td>
<td>5 years</td>
<td>Hospital Billing</td>
</tr>
<tr>
<td>Job classifications</td>
<td>Permanently</td>
<td>Human Resources</td>
</tr>
<tr>
<td>Meal counts</td>
<td>5 years</td>
<td>Nutritional Services</td>
</tr>
<tr>
<td>Medical Records</td>
<td>Permanently</td>
<td>Health Information Mgt. (Medical Records)</td>
</tr>
<tr>
<td>Minutes of medical staff meetings</td>
<td>Permanently</td>
<td>Medical Staff Office Responsible Department</td>
</tr>
<tr>
<td>Nursing applications (non-employees RNs &amp; LPNs)</td>
<td>2 years</td>
<td>Nurse Recruiter</td>
</tr>
<tr>
<td>MSDS Sheets</td>
<td>5 years post last utilization</td>
<td>Safety</td>
</tr>
<tr>
<td>OR Log</td>
<td>Permanently</td>
<td>Operating Room</td>
</tr>
<tr>
<td>Patient Complaints</td>
<td>Permanently</td>
<td>Patient Relations</td>
</tr>
<tr>
<td>Patient Index</td>
<td>Permanently</td>
<td>Health Information Mgt.</td>
</tr>
<tr>
<td>Personnel Records</td>
<td>2 years post termination or until</td>
<td>Human Resources</td>
</tr>
</tbody>
</table>
### CMR Process

The goal of the new CMR process is to now:

- Have a complete and accurate list of system changes, including application-specific and integrated workflow build that end-users and administrative staff can monitor.
- Use the electronic system as your build tracker to track changes in the system.
- Approval by other teams and the Configuration Management group is only needed for build moving from TST to PROD, not when they are first built in POC.

<table>
<thead>
<tr>
<th>Operative/Procedure Index</th>
<th>disposition of charge or civil action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photographs (institutional)</td>
<td>Permanently Informational Services</td>
</tr>
<tr>
<td>Physician charges</td>
<td>5 years Physicians’ Billing</td>
</tr>
<tr>
<td>Prescriptions</td>
<td>5 years Pharmacy</td>
</tr>
<tr>
<td>Property records</td>
<td>Permanently Physical Plant</td>
</tr>
<tr>
<td>Purchase Orders</td>
<td>3 years Purchasing</td>
</tr>
<tr>
<td>Receiving Reports</td>
<td>7 years Accounting</td>
</tr>
<tr>
<td>Records of reactions to transfusions</td>
<td>5 years Laboratory</td>
</tr>
<tr>
<td>Refrigerator Inspections</td>
<td>5 years Responsible Department</td>
</tr>
<tr>
<td>Requisitions</td>
<td>3 years Purchasing</td>
</tr>
<tr>
<td>Statistical Reports</td>
<td>Permanently Health Information Mgt.</td>
</tr>
<tr>
<td>Transfusion request records</td>
<td>5 years Laboratory</td>
</tr>
<tr>
<td>Tumor Registry Files</td>
<td>Permanently Tumor Registry</td>
</tr>
<tr>
<td>Variance Reports</td>
<td>6 years Performance Improvement</td>
</tr>
<tr>
<td>Volunteer service records</td>
<td>Duration of service, plus 1 year Patient Relations</td>
</tr>
<tr>
<td>Withholding tax exemption forms W2</td>
<td>6 years Payroll</td>
</tr>
<tr>
<td>Withholding tax exemption forms W4</td>
<td>6 years Payroll</td>
</tr>
<tr>
<td>Work Orders</td>
<td>6 years Physical Plant</td>
</tr>
<tr>
<td>X-ray film</td>
<td>3 years post last date of treatment Radiology File Room</td>
</tr>
</tbody>
</table>
• **The CMR is completed to document build and changes.**
  1. Document affected facilities.
  2. Document the affected master files, records, and changes.
  3. Document if change affects end-users.
  4. Notify trainer by phone or email and determine necessary educational materials.
  5. Submit CMR to applicable Application Teams and Project Management, after build is completed and tested in POC and TST.
  6. Once approval is granted by Application Teams and Project Management, move build to Production and mark CMR as implemented.

CMR Start Page -
[http://pelican.lsuhealthsystem.org/CMR/review.aspx](http://pelican.lsuhealthsystem.org/CMR/review.aspx)

End-User Change Log Viewer-
[http://pelican.lsuhealthsystem.org/CMRviewer/default.aspx](http://pelican.lsuhealthsystem.org/CMRviewer/default.aspx)

• **Sherlock – Epic Support Logs**
  - Support logs used to document issues requiring Epic support and investigation.
  - Application Teams and Governance may be tagged for input or approval.

• **Sherlock Process:**
  1. Document Issue
  2. Indicate priority and issue type.
  3. Select applicable applications.
  4. Tag Governance if appropriate.
  5. Indicate Owners and Interested Users.
  6. Describe Problem.

[https://sherlock.epic.com/default](https://sherlock.epic.com/default)

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**OPPORTUNITIES FOR IMPROVEMENT**

The needs assessment revealed a number of opportunities for improvement in our current applications. The improvements and additional informational needs identified were as follows:

- Technology hardware / standardization, upgrades / replacement schedules
- Self-service portal for problem solving
- Improve training / educational resources and communication of these resources
• Improve Research resources and information regarding Research
• Ease of retrieval of data from one system
• Ease of reporting from one integrated system

INFORMATION TECHNOLOGY SUMMARY – OUR VISION

LSU Health System envisions patient and family centered medical care delivered through health system-wide coordination of access to services, quality care and cost efficiency across the care delivery continuum, independent of location, and supported by integrated clinical and business process and advanced information management.

• Patients, families and caregivers have the information required to navigate the LSU Health System.
• Patients, families and caregivers receive timely and appropriate information and services.
• Caregivers identify the appropriate care needs of patients and families.
• Caregivers deliver safe, appropriate, efficient and effective care to patients and families.
• Caregivers provide ongoing care management to ensure maximum effectiveness of and satisfaction with care provided.
• Reliable and valid clinical, functional, satisfaction, safety and cost outcomes data is stored, retrieved, analyzed and made available to caregivers in a timely manner.
• One-stop scheduling and registration.
• One-time collection of patient financial and clinical information.
• Patient eligibility and financial obligation is known.
• Charges are driven by documentation at point of care.
• Easily understandable and accurate bills are created in a timely manner.
• Immediate answers to patient financial inquiries can be provided.

Key strategic objectives
• A system that reflects the vision of one patient, one record.
• Standardized work processes across the organization.
• Project to be led and owned by functional groups (not IT).
• Use of standardized (non-custom) software from the chosen vendor.
• Use of best practices where appropriate.

Guiding principles:
• A common clinical terminology will be utilized.
• Adoption of CPOE (> 99%) in order to achieve the considerable benefits tied to this goal.
• Design for a paperless environment.
• Bar coding for patient identification.
• Patient’s available information will be compiled prior to registration.
• All patients will be registered using a centralized or decentralized model, as appropriate.
• Adequate and appropriate hardware (workstations, printers, peripherals, and network connectivity) will be available.
• There will be one Charge Master and Service Master across all hospitals (common descriptions, charge, codes, and methodology).
• There will be one guarantor statement across all facilities for technical services and one guarantor statement for all professional services
• Guarantor information obtained at one facility will be “trusted” by other facilities until re-verified using accepted standards
• Systems will be implemented to achieve “meaningful use of health information technology” as defined by the American Recovery and Reinvestment Act.

Clinical design guidelines:
• Design will support new forms of interdisciplinary collaboration and communication to coordinate and realize the highest possible standards of patient-centered care.
• Clinical decision support tools will be applied throughout the health system to guide real-time clinical decision making.
• Unnecessary variations in care will be minimized through common processes and replication. Common care standards (e.g., processes, documentation tools, order sets, care plans and drug protocols) will be adopted across all sites as much as possible.
• Patient information will be shared across the continuum of care.
• Clinicians will view information in a manner that improves workflow required to deliver discipline-specific care.
• Clinical documentation will be multidisciplinary with a patient-focused approach that eliminates the need for most paper tools.
• Clinicians will document at the time care is provided.
• “Charting by exception” will be the standard documentation practice.
• One point of data gathering with multiple points of data sharing to eliminate duplication of data collection/validation across caregivers.

Revenue cycle design guidelines:
• Scheduled patients will be pre-verified to collect as much demographic and payor information as possible.
• Scheduled patients will be pre-registered if such practice accelerates the check-in process.
• Insurance eligibility/ benefits will be verified prior to service.
• Clinic scheduling for patients will be available 24 hours a day, seven days a week.
• Appointment reminders will be given to predetermined patient types, based on site criteria.
• Patient instructions will be linked to scheduling so that appropriate information is provided to patients in advance of their visit.
• Information about financial options/obligations, service location, and parking will be provided to patients prior to service.
• Co-pays will be requested at the time of service.
• The clinician will be responsible for complete and accurate documentation of visits, services performed, and the patient’s disease/condition at the time of service.
• Charging will occur at the time service is delivered and documented.
• Coding and data entry will be completed within 24 hours of discharge or the last date service was provided.
• Coding and documentation will adhere to hospital policies and procedures for coding and documentation compliance.
• Utilization will be appropriately monitored based on contractual requirements.
• All utilization monitoring will be a derivative of documentation.
• 100 percent of all claims will be error-free.
• Compliance editing/monitoring will be automated, and upstream processes will be designed to eliminate the need for downstream edits (e.g., charges outside the date of service, research account holds, PT/OT/Speech Authorization holds, onset date hold, missing authorization/missing certification hold, Medicare therapy visit count, interim bills, missing room charges, 72 hour and “same day” rule charge transfer).
• The benefits of HIPAA standard transactions will be realized in the design, especially eligibility 270/271, insurance claims 837, remittance 835, and claims status 276/277.

LSUHSC-S is committed to improving the quality of the facility’s information management processes and reducing cost. Information management encompasses the management of information, the management of application systems and the management of information and communication technology, whether computer supported or not. Information management is the key component in providing quality patient care, education and research in a constantly changing environment. The quality of information management is an important factor for hospitals to gain the competitive advantage.

Processes are in place at LSUHSC-S that will allow the end user to make recommendations to enhance and improve current software applications.

The Information Technology Strategic Plan is driven by the following internal and external forces:

• HIPAA
• Patient Safety
• Joint Commission Compliance
• CMS
• Enhancing the efficiency in Computer Services
• Enhancing the usefulness of available clinical and financial data
• Enhancing user training
• Improving physician and healthcare provider access to data
• Enhancing Research and Educational capabilities
• Allocation of Space

Recent upgrades or improvements to current systems include:
• Net Access
• Mainframe
• Security Systems
• Radiology Information System
• Laboratory Information System
• PACS
• Lifetime Clinical Record – Medication List
• Lifetime Clinical Record – Telemedicine and Cardiology Reports
• Lifetime Clinical Record – ER Patient Notes
• Lifetime Clinical Record – Anticoagulation Reports
• Lifetime Clinical Record – Micro Summary
• Lifetime Clinical Record – Enhanced Reference Lab displays
• Enterprise-wide Imaging System
• Clinical Information Hardware Replacement
• Bedside Medication Administration Hardware
• Allergy Database – Storage and Retrieval

Plans are currently underway for the implementation of the following:
• Sentillion Single Signon
• Enterprise Electronic Health Record (10 State Hospital System) that will include Physician Order Entry Facility-wide
• Self-Service Password Reset System
• GE Enterprise Radiology Information System

Users’ needs are assessed on an ongoing basis. Users may request system modifications at any time. The system change request is summarized, evaluated by leadership and acted upon accordingly (Appendix A).

Refer to Appendix D for Information Technology Strategic Plan that strives to keep pace with the continued growth of the institution.
Overview

As of FY2013 the 10 hospitals of the LSU Health System are in the process of implementing a new, complete, integrated Electronic Health Record (EHR) System using EPIC enterprise software. This system wide implementation has been named the Pelican project. PeopleSoft, the Enterprise Resource Planning System, was implemented in 1998 and is now a mature administrative system, not only for the hospitals but also for the two Health Science Centers. The legacy clinical systems, however, have been procured from many different vendors or have been developed in house and were not implemented uniformly across all 10 hospitals. In 2008, the LSU System developed a strategic vision to govern and implement information technology systems used in delivering safe, cost effective, patient centered care across the 10 hospitals. The LSU Health System Office continues to address these issues in its ongoing effort to improve quality.

Background

Management of the 10 LSU hospitals is divided between the LSU Health Care Services Division (HCSD) and the LSU Health Sciences Center–Shreveport. Over the past decade, the health information technology (HIT) systems have evolved from stand-alone billing systems to more unified clinical and administrative information systems, and the systems within the LSU hospitals are in various phases of maturity or consistency of implementation. Although both HCSD and LSUHSC-S share common goals, the systems implemented to achieve those goals were not always the same. The Health Care Services
Division, working with the School of Public Health of LSUHSC-New Orleans, developed the Clinical Inquiry System (CLIQ) to be a sophisticated patient data repository that serves not only as a method to manage all electronic results for a patient but also as the basis for the quality management system required by the HCSD Disease Management Program. In Shreveport, commercial systems from Siemens Medical Systems (SMS) were implemented to provide not only the same patient data repository capability but also computerized patient order entry (CPOE) and medication management. The Siemens Medical Systems contract will be terminated approximately in March 2013 as it is being replaced by EPIC.

Since 1998, the 10 hospitals have been using PeopleSoft as the Enterprise Resource Planning System, the most recent upgrade to version PS 9.1 was completed in November 2012. PeopleSoft is currently a mature administrative system, not only for the hospitals but also for the two Health Science Centers. The legacy clinical systems, however, had been procured from many different vendors or had been developed in house. Often, the same clinical need is addressed by different software applications; for example, there have been 3 different Emergency Department systems in use across the 9 of the 10 hospitals. Electronic records for a single patient who received care at more than one hospital could not be viewed from a single interface, but rather, by accessing multiple applications. Pelican will provide a master index across the 10 hospitals to ensure that the same patient’s records are being viewed. The EPIC system, Pelican project provides cost effective, patient centered care using Electronic Health Records across the 10 hospitals.

In 2006, the LSU Systems Office contracted with HealthLink, a subsidiary of IBM, to conduct an analysis of the information technology systems for the LSU hospitals. From more than 30 interviews with executives, physicians, managers, and staff, the IBM consultants produced: 1) a status report, 2) a proposal for a governance structure for the management and deployment of information technology; 3) a list of information technology projects that could be implemented quickly, inexpensively, and that would provide maximum impact in a short period of time, and 4) a proposal for a roadmap for the long-range development of IT systems for all the LSU hospitals. In response to this study, the first step within the LSU Systems Office was to create the Electronic Medical Records Operations Council which is now called the EHR Executive Steering Committee. The members of the Steering Committee were selected to assure organizational representation, technological proficiency, clinical proficiency, and efficient collaboration with healthcare management at the State level. Committee members developed the master plan for the acquisition, implementation, and operation of the EPIC software system and Pelican Project. The complete results of the 2006 study can be found in “First IBM HealthLink Study, 2006”.

The LSU System then contracted with Healthlink to conduct a cost and risk analysis of four models for implementing the Electronic Health Record (EHR) system. The results of this study (“Second IBM HealthLink Study, 2007”) indicated that the best approach was
to competitively procure and implement a commercial product. A consulting contract with Kurt Salmon, Associates (KSA) was procured to provide external assistance for the large procurement project that resulted in the selection of EPIC as the single prime vendor for EHR.

**Summary of Current status**

There are several LSU initiatives in progress to complete implementation of the EPIC EHR project.

- RIS/PACS (Digital Radiology)
- Electronic master patient index (E-MPI)
- Internal LSU Health Information Exchange
- Develop of Project Management Office and procurement of PMO consultant
- New governance subcommittees
- Information Technology Group reorganization
- EPIC selected as the EHR prime vendor
- Legacy system contracts consolidated and terminated
- Data Center expansion (North and South Louisiana)
- WAN upgrade and redundancies

All new systems were acquired competitively and not through extensions of amendments of existing vendor contracts.

**Summary of Current Transition Strategies:**

As part of the EPIC EHR transition strategy, many hardware and software maintenance contracts will be renegotiated with durations less than 5 years. For example, the 3M/Softmed contract for Medical Records software has been consolidated from 12 contracts to 1 and was renegotiated with a 3-year duration for the medical records component and a 5-year duration for the coding components. Because EPIC will reduce the need for paper medical records and provide medical record management functionality, the duration of the medical records software maintenance contract was limited to the 3 years required to implement the new systems.

Some hardware and software maintenance contracts that were identified to be submitted mid-year of FY2009-10 were:

- CLIQ hardware
- Data Center hardware for existing systems
- Backup System for CLIQ
- Pharmacy System Software upgrade components

Prior to the commencement of EPIC EHR system implementation, a Project Management consultant was procured and a Project Management Organization (PMO) created. Some of the initial tasks identified for development and completion included:

- Common work flow processes
- Common data definitions
Common master person index across all systems and hospitals
Key Metrics and benchmarks for measurements pre- and post-implementation
Consolidated existing IT maintenance contracts
Governance structures for subsystem implementation and management

Every effort is being made to avoid redundant implementations whenever possible. However, some may be necessary. For example, a master patient index (E-MPI) is needed to identify a patient’s medical record number in each of the ten LSU hospitals and is a requirement for a statewide RIS/PACS. Presently, there is no statewide LSU E-MPI, so this system will be one of the first basic building blocks to be implemented. Because most major system vendors have their own internal E-MPI, this initial implementation may be a bridge between the existing systems and the ultimate EHR-vendor E-MPI system. Every effort will be made to minimize continued expenditures on systems that may ultimately be replaced. The internal LSU Health Information Exchange was implemented (1) to create a transitional bridge between legacy systems and the new EHR, (2) to provide a web portal to all existing electronic records at all 10 LSU hospitals, (3) to ensure access to patient records at non-LSU facilities if LSU should develop collaborative programs (for example, Lady of the Lake in Baton Rouge, Ochsner in New Orleans, and Willis Knighton in Shreveport).

**EPIC Implementation & Go Live Schedule:**

<table>
<thead>
<tr>
<th>Facility</th>
<th>End Use Training</th>
<th>Go Live</th>
</tr>
</thead>
<tbody>
<tr>
<td>Huey P Long Medical Center</td>
<td>Sept – Nov 2012</td>
<td>November 4, 2012</td>
</tr>
<tr>
<td>E.A. Conway Medical Center</td>
<td>Sept – Nov 2012</td>
<td>November 4, 2012</td>
</tr>
<tr>
<td>Bogalusa Medical Center</td>
<td>6 weeks prior to go live</td>
<td>April or May 2013</td>
</tr>
<tr>
<td>Lallie Kemp Reg. Med. Center</td>
<td>6 weeks prior to go live</td>
<td>April or May 2013</td>
</tr>
</tbody>
</table>

The remaining 4 hospitals of the LSU Health System are not currently scheduled to implement EPIC EHR due to possible public/private partnerships and management initiatives outside of the LSU system.

**Organizational Chart and Governance:**

Many organizational components of the LSU Health System are undergoing review and have been reorganized. Although the organization of the various Information Technology groups continues to be reviewed, the chart below reflects the current organizational set up and staffing levels for the EPIC Pelican project.
Project Management for the EPIC EHR Pelican Project is illustrated in the following diagram: