

LSU Health Sciences Center *Shreveport*

**INFORMATION MANAGEMENT PLAN
2006-2010**

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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.

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 2006, the planning phase to upgrade the application was approved.

An information management needs assessment (**Appendix A**) 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 B**) to address system improvements for clinical data entry, storage and retrieval of information.

OVERVIEW OF ORGANIZATION

Louisiana State University Health Sciences Center, Shreveport is licensed for 436 inpatient beds (not including 40 neonatal intensive care and 25 newborn nursery bassinets). There are approximately 20,000 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, 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 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 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 SYSTEMS – ACCESS TO ELECTRONIC INFORMATION

To support clinical medicine, efforts will be directed toward computerized physician order entry and outpatient clinic systems. An enormous challenge will be the transition between the use of the paper chart and the electronic version of patient data. Through outpatient clinic systems, computerized physician order entry, and structured documentation, physicians will be able to record an increasing amount of patient information in an electronic format that will enhance the ability to care for patients, improve the ability to do clinical research, and streamline the billing and reimbursement process. WebInvision (formerly known as OAS GOLD), Siemens Pharmacy, Siemens Medication Administration Check (MAK), Siemens Radiology, Clinical Lab System (Sunquest), Siemens Net Access and other similar applications are essential to building the electronic record.

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) will be fully operational in early 2007 and will provide 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

Siemens Medical Systems INVISION Patient Management System

Offers on-line, interactive admissions, discharges and transfers (ADT), registration, re-registration, bed reservation/control, pre-admission planning, care provider census inquiry and reporting for both inpatients and outpatients. Patient Management links and supports the facility's departments to enhance productivity, speeds communication and eliminates redundant recording of data. Departments share standard patient information that has been collected by registration personnel. All on-line entry is fully edited and immediately processed. The consistency, integrity and legibility of information are uniformly improved. Those applications included in Patient Management are:

- Registration/ADT
- O/P Visit Processing
- Master Patient Index
- Room/Bed Management
- Daily Census/Reporting
- Patient Status Transfer
- Case Mix Management
- On-line Architecture System for Customer Controlled Screen, Data Capture, and Pathway Changes
- SoftMed Chart Location, Deficiency Tracking, Electronic Signature (ESA), SoftMed Transcription, Abstracting w/Interface to Lifetime Clinical Record
- User Defined Reporting (Ad Hoc)

Siemens Medical Systems INVISION Financial Data System

Utilizes interactive data entry and inquiry systems to support the needs of Patient Accounting. Essential components include access to all account detail via inquiry, detailed service pricing, pricing formulas; complete insurance prorating and reimbursement processing, wide array of statement and collection letter options, automatic worklist capabilities and Bad Debt management. All federally-mandated standard bill forms are supported. The Patient Accounting Application includes the following:

- Information Capture

- Billing
- On-line Account Management
- Bad Debt
- Reimbursement/Allowance Calculation
- Archive Data Base Reporting
- User Defined Reporting (Ad Hoc)

Siemens Medical Systems INVISION /WebInvision

Offers on-line access to patient ADT information and offers the following:

- Order Entry
- Technical Charge Entry
- Resource or Patient Appointment Scheduling
- Adhoc Reporting
- Nursing Bed Functions
- Lifetime Clinical Record
- Medication Administration Record
- Patient Census History

A phased implementation of the web version of Invision known as WebInvision (graphical user interface version with “drop-downs” and enhanced menus) began in 2005.

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 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

Siemens Medical Systems Lifetime Clinical Record (LCR)

Provides an integrated lifetime view of a patient's significant clinical data throughout the health care enterprise. Almost ten years of longitudinal patient data is now available in LCR. The LCR is built upon IBM standard technology and employs a relational data base to meet the operational, educational and reporting requirements of the organization. LCR offers flexible, selective, on-line storage capabilities to meet the data management and clinical objectives of the facility.

- Store Current and Lifelong Clinical Information
- HL7 Interface for uploading from existing Lab, Radiology, Pharmacy, Departmental databases
- Simultaneous On-line Access to All Caregivers
- Flowsheets & Clinical Visits Reports Available On-line/Print
- Analyses Across Selected Patient Population
- Healthcare Term Dictionary (HTD)
- Web-based access

Siemens Medical Systems Enterprise Access Directory (EAD)

Provides a single point of entry into the demographic and key clinical information maintained in the enterprise. EAD enables a single search for a patient to identify all patient data within all hospitals in the enterprise. EAD tracks patients throughout the facility, along with the services associated with healthcare delivery.

- Reporting Functionality
- HL7 Compliant for Inbound/Outbound transactions
- Single point of access to Enterprise-wide Patient Data, regardless of multiple medical record schemes
- Tracks a Patient's services throughout the healthcare enterprise
- Integrated with data management systems
- On-line communication between all systems

OPENLink Interface Engine

Provides an interface engine that will handle all interfaces and is manageable from in-house. The sending system will send a record to the interface engine. The interface engine handles the communications protocols between systems and re-formats the record into the format that each receiving system requires. This decreases interface cost and allows interfaces into more departmental systems. Features of the OpenLink include:

- Open platform to connect independent systems
- User control & flexibility
- Standard communication network connectivity solutions

Siemens Medical Systems Net Access

Provides clinical personnel with fast, user-friendly, remote access to selected clinical data via a Web browser. Physicians can view Patient Management, Resource Scheduling, Ancillary, Medication and IV orders, Medication Administration Record and other data in an intuitive graphical user interface (GUI) format. Net Access also offers the ability to support computerized physician order entry (POE). With the exception of the pilot area for POE, most clinical information is available for 'display only' in Net Access.

Siemens Medical Systems Pharmacy System

Pharmacy Clinical Workstation (PCW) is a Windows-based PC application that lets users perform functions (enter allergies, orders, interventions, etc.) on the Pharmacy system using a Graphical User Interface. Siemens Pharmacy system is integrated with Med Select, Invision Patient Management, Invision Med/IV Orders, Medication Administration Check and Physician Entered Orders (POE).

Siemens Medical Systems Medication Administration Check

Medication Administration Check (MAK) is a Windows-based PC application that allows users to electronically review, authenticate and chart administrations of medications and IVs. MAK provides information to the Pharmacy, Invision and Net Access for review by clinicians.

Other Automated Information Systems

- 3M Encoder
- PeopleSoft TPS
- Accounts Payable
- Misys Clinical Lab and Anatomic Pathology
- Dictaphone Physician Dictation System
- Micromedex
- PeopleSoft Materials Management
- C/Net (Cancer Registry)
- InterQual (Quality Improvement)
- Obix O/B Clinical Information System

- Med Select (Medication Dispensing System)
- RAS (Report Automation System)

Other Network Systems

- Sunrise Disease Management System (Hematology/Oncology Information System)
- Approved Anti-Virus Software
- Dr's Choice (Emergency Medicine Patient Medical Record Documentation System)
- ESA (Electronic Signature)
- WITT (Cardiac Cath Lab)
- Cirius (Patient Accounting Claims Scrubber)
- GE Centricity EMR (Electronic Record System primarily utilized in Family Medicine and Neurosurgery)
- Laser Fiche (Document Imaging System)

Non-Network Applications

- Microsoft Office Products
- Visio
- Fox Pro
- Dbase
- Approved Anti-Virus Software
- Print Shop
- EndoWorks 7 - Endoscopy Clinic and FWCC Endoscopy

CUSTOMERS OF INFORMATION

There are multiple users of information produced by LSUHSC. 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
- 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

INFORMATION REPORTING

A. Voluntary Reporting

- American Hospital Association Information Request
- National Library of Medicine
- EMS Data to appropriate hospital

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 Physician Data Bank
- University Healthcare Consortium (UHC)

CONFIDENTIALITY, SECURITY AND INTEGRITY OF DATA

Confidentiality and security of patient information is managed in accordance with Medical Staff Bylaws, State and Federal law, HIPAA policies, as well as other Hospital and Departmental policies and procedures (see Appendix C).

All staff are required to sign a confidentiality agreement upon employment (**Appendix D**).

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 other information that is defined as confidential. 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.

Confidential information includes information contained in manual documentation as well as the facilities computer systems. 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 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 will be assigned to all system users. Penalties may be invoked for sharing access methods to anyone without the permission of appropriate LSUHSC authorities.

Computer access to the various software applications shall be 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 Department Director 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 confidentiality, security and integrity 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 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 has a functioning mechanism designed to safeguard records/information against loss, destruction, tampering and unauthorized access or use.

A Disaster Management Plan is updated every six months. In that plan, 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 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, Rules and Regulations and Hospital Policy 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 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, the following tools are resources that are utilized for educating individuals about information management principles:

Employees

- Hospital Policy & Procedure Manual
- Administrative Directive
- Department Policy and Procedure Manuals
- Equipment Operation Manuals
- Quality Management Training
- Quality Improvement findings
- Hospital Education Council
- Departmental Inservice Programs
- Job Descriptions
- Medical Library
- Material Safety Data Sheets
- Patient Care Support Newsletter
- Clinical Information System Training provided by Computer Services
- Patient Registration Training provided by Patient Processing
- Project Care Education, including basic PC Training
- Computer Services Newsletter
- Infection Control Manual

- Video programs for continuing education
- Attendance at outside professional workshops/seminars
- Payroll Employee and Supervisory Manual
- Human Resource Employee Manual

Patients

- 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

- Medical Staff Meetings
- Weekly Cancer Conferences
- Quality Performance and Improvement findings
- Medical Library
- Departmental meetings
- Special meetings/conferences
- Attendance at outside workshops/seminars
- Medical Staff Bylaws Rules and Regulations

Community

- Health Fairs
- Support Groups
- Physician Referral Program
- Patient education programs
- Medical Library

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

Internal

Voice

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

Data/Information

- 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

External

- Fax
- Telephone
- Paper (records, reports, etc.)

DATA DEFINITIONS

LSUHSC 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 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.

In addition Siemens Medical Systems provides a term dictionary. Siemens Medical Systems Healthcare Term Dictionary (HTD) is a single source of information about the terms and concepts that comprise the medical vocabulary of an Integrated Health Network (IHN). It provides a single integrated view of medical terminology instead of a multitude of unrelated master files. It enables consistent definition of terms and concepts, and it also provides a single source for editing rules and displays options. The Healthcare Term Dictionary serves as an Enterprise data model linking clinical nomenclatures across disparate systems and entities. Among the items defined within the Term Dictionary are:

- Results to be accepted from feeder systems as coded values
- Observations for which to collect results
- Logical groupings of observations
- User defined parameters for clinicians to facilitate order entry defaults, allowable values, suggested values, etc.
- Industry standard coding systems: ICD-9-CM diagnosis/procedures, CPT codes, SNOMED codes, etc.
- Relationships (links) between term and external coding systems (synonyms the information is known by in feeder systems)
- Defined protocols

The HTD addresses how the institution defines itself and has three major objectives:

- To have an enterprise-wide clinical system that can be reasonable installed, maintained and migrated to future technology

- To drive widespread clinical usage
- To facilitate meaningful outcomes analysis in the future.

PLANNING METHODOLOGY

For leadership to achieve its goal of providing appropriately managed information, the leadership must begin by planning for services. LSUHSC 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.
- Performance improvement activities

KNOWLEDGE BASED INFORMATION

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, 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 fifteen workstations with Windows XP, a projection system for teaching, and teleconferencing capability. Networking 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. Networked access is available to over eighty-five databases. The library's collection includes over 185,000 print volumes (books and bound journal volumes). The Library also provides access to 415 electronic books. The Library currently receives/accesses nearly 2,500 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. Monday through Saturday and 2 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-Shreveport 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 have 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.
- 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 Web Site.

AGGREGATE DATA

Monthly, calendar year and fiscal year end statistical reports are posted to the e-mail bulletin board for access by internal departments on a monthly basis.

- Monthly Analysis by Hospital Service
- Monthly Analysis by Nurse Station
- Fiscal Year Analysis by Hospital Service
- Comparative Report of Professional Performance
- Comparative Report of Outpatient Services

The statistics include information by hospital service and by nurse stations as it relates 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 (NACHRI)

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)

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:

- Integration and single point of access for information
- Fully integrated Electronic Medical Record
- Increase timeliness of availability of data
- Single electronic charting system: decrease duplication of charted information, increase patient safety
- Increase education and educational opportunities
- Data Warehouse – single point of reporting with data dictionary consistency and accessibility to reporting tools

RECORDS RETENTION

The clinical information system, Invision retains approximately seven years of inpatient and outpatient data from the patient management and patient accounting system, including diagnoses and procedures. Lifetime Clinical Record (LCR) serves as a data repository for clinical results and reports transmitted from reporting systems to OpenLink. 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 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:

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

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

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

Record	Suggested Minimum Period of Retention	Responsible Department
MSDS Sheets	5 years post last utilization	Safety/Risk Management
OR Log	Permanently	Operating Room
Patient Complaints	Permanently	Patient Relations
Patient Index	Permanently	Health Information Mgt.
Personnel Records	2 years post termination or until disposition of charge or civil action	Human Resources
Operative/Procedure Index	10 years	Health Information Mgt.
Photographs (institutional)	Permanently	Informational Services
Physician charges	5 years	Physicians' Billing
Prescriptions	5 years	Pharmacy
Property records	Permanently	Physical Plant
Purchase Orders	3 years	Purchasing
Receiving Reports	7 years	Accounting
Records of reactions to transfusions	5 years	Laboratory
Refrigerator Inspections	5 years	Responsible Department
Requisitions	3 years	Purchasing
Statistical Reports	Permanently	Health Information Mgt.
Transfusion request records	5 years	Laboratory
Tumor Registry Files	Permanently	Tumor Registry
Variance Reports	Permanently	Performance Improvement
Volunteer service records	Duration of service, plus 1 year	Patient Relations
Withholding tax exemption forms W2	6 years	Payroll
Withholding tax exemption forms W4	6 years	Payroll
Work Orders	6 years	Physical Plant
X-ray film	3 years post last date of treatment	Radiology File Room

SUMMARY

Louisiana State University Health Sciences Center (LSUHSC), Shreveport, 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 currently in place at LSUHSC that will allow the end user to make recommendations to enhance and improve current software applications.

The Information Technology 5 year Strategic Plan is driven by the following internal and external forces:

- HIPAA
- Patient Safety and JCAHO Compliance
- 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

The results of the 2006 Information Management Needs Assessment Survey showed a common need among current users for the following enhancements:

- Integration and single point of access for information
- Fully integrated Electronic Medical Record
- Increase timeliness of availability of data
- Single electronic charting system: decrease duplication of charted information, increase patient safety
- Increase education and educational opportunities
- Data Warehouse – single point of reporting with data dictionary consistency and accessibility to reporting tools

Recent upgrades or improvements to current systems include:

- RASWeb
- WebInvision
- Mainframe

- Security Systems
- Radiology Information System
- Laboratory Information System
- PACS

Plans are currently underway for the implementation of the following:

- Sentillion Single Signon
- Pharmacy/MAK System Upgrade
- Physician Order Entry Housewide
- Clinical Information Hardware Replacement
- Lifetime Clinical Record – History of Medications and Allergies
- Enterprise-wide Imaging 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 B**).

Please refer to **Appendix E** for Information Technology Strategic Plan that strives to keep pace with the continued growth of the institution.

APPENDICIES

Appendix A – Information Management Needs Assessment

http://www.medcom.lsuhs-c.edu/infomanage/InformationManagementSurvey_Intro.cfm

Appendix B – System Change Request Form

<http://www.medcom.lsuhs-c.edu/cfdocs/compsvcs/frmSCRlev1.cfm>.

Appendix C - Security, Confidentiality and Integrity of Information

See Information Management Policy 6.2

http://www.medcom.lsuhs-c.edu/cfdocs/policies/hospital_index2.html

Appendix D - LSUHSC Confidentiality Agreement

See Information Management Policy 6.2

http://www.medcom.lsuhs-c.edu/cfdocs/policies/hospital_index2.html

Appendix E – LSUHSC Information Technology Strategic Plan: Status Overview

Information Technology Strategic Plan: 2006-2010					
	One-time Cost	Recurring Cost	Priority	Status	Funding
Clinical Support					
POE, plus 6 new staff			Mid		
Starter set and POE enhancements	\$0	\$10K	High	In Progress	Budgeted
LCR: Meds, Allergies and other orders in LCR;	\$0	\$0	High	In Progress	Budgeted
OAS Gold: Hospital-wide implementation (Drop support for 3270 pathways.)	\$0	\$0	High	In Progress	Budgeted
Decision support			Mid		
Clinical Notification Index (Stat Alerts)			Mid		
Rules engine			Mid		
Continuity of Care – Disease Management; Tracking Immunizations & Screenings, Emergency Room Alerts, and Quality Measures			Mid		
E-Prescribing from Clinics			Mid		
Ambulatory EMR, plus 3 new staff			Mid		

Nursing documentation with OAS Gold (NetAccess) user interface	\$100K	\$21.3K	High		
SSO/CCOW/LCR-PACS Integration	\$99K	\$8.75K	High	Phase One, In Progress	Budgeted
EAD/LCR → Conway			High		
Appointment System (HL7 Compliant) (as part of Billing System?)			Mid		
LCR/PACS integration (URL links)			Mid		
Clinical IT Director (FTE)			Mid		
Clinical Project Manager (FTE)			Mid		
Inpatient Meds Reconciliation			Mid		
Patient Tracking			Mid		
<u>Financial/Decision Support</u>					
Data Warehouse, plus 1 FTE			Mid		
Medical Necessity Checking; Updates to Misys to accommodate ICD-9	\$100K	\$23K	High		
Quality measures			Mid		
Community Care Referral System	\$0	\$0	Highest		Budgeted
HDX at registration and/or as batch process after appointment	\$0	\$0	Highest		Budgeted
Enterprise Imaging: Administration (HR, Accounting, Payroll), Billing, Medical Records, and Registration	\$70K	\$10K	High	Phase One, In Progress	Budgeted

Professional billing: Options:			High		
a. Upgrade IDX					
b. Outsource computer systems					
c. Implement another system (such as Signature), plus 1 FTE					
<u>Patient Support</u>					
Allow Patient Laptops in hospital			Low		
Website to attract / support patients			High		
Website to advertise services			High		
Web access to patient bills			Low		
Protected e-mail to clinicians and to Billing			Mid		
E-Appointments, especially for immunizations and screenings			Mid		
<u>Infrastructure</u>					
Mainframe Support:					
Hardware / software upgrades	\$110K		Highest		???
Two Systems Programmers		\$186K	Highest		???
Invision PCs in hospital and clinics	\$250K	\$0	Highest		Hospital
Desktop Support: Replace Win '95, '98			Highest		Depart'l
Disaster recovery: Hot site backup at Conway			Mid		
Mainframe monitoring system			Mid		

New data center			Mid		
Office space, furniture			Mid		
On-going Raises for staff	\$0	\$136K	High		
Security Officer FTE		\$108K	High		
DB2 Database Manager FTE			Mid		
Desktop Management FTE	\$0	\$60K	High		
Network:					
Shared Media Hubs	\$135K	\$10K	High		
Amphenol Cable Replacement	\$35K	\$	High		
Switch Processing Power	\$110K	\$	High		
SOLARWINDS Network Monitoring and Reporting Tool	\$20K	\$	Highest		Net Acct
Wireless Access Points	\$45K	\$	Mid		
Wireless Security and Bandwidth Improvement	\$100K	\$	High		
Network Administration, Authorization, Remediation, & Accounting (NAARA)	\$170K	\$	Highest		Net Acct
Redundant Hospital Core Network	\$135K	\$27K	Highest		Net Acct
Outside Security Audit	\$120K	\$	Highest		Net Acct
SAN Expansion	\$75K	\$16k	Mid		
SAN Management	\$70K	\$15K	Mid		
Server Imaging – Acronis	\$117K	\$15K	Highest		????
Online Web Conference Software	\$25K	\$5K	Low		
Mainframe Operator Position		\$31K	High		
Wide Area Network & LONI Improvements			Mid		
“Live Communications” Server	\$11K		Mid		
Salary Attrition					
Promotions (Lack of funding)					
Sharepoint Portal Server	\$15K				
Maintenance for Other Departments, Funded by Computer Services		\$360K	Mid		
Office Space			Highest		
Server Operations Room			High		
Blade Servers			Mid		
Network Account (Increase \$2.50 monthly)			Highest		
Sentillion-Vergence			Mid		
Promotion Equity			Mid		
Organizational Chart: Level “Compression”		\$5K	High		
Student/Registrar/Admissions					
a. Convert all basic records to PeopleSoft					
b. Generate PDF of all Legacy reports and store in imaging system					
c. GradeBook in PeopleSoft					
Conway (All of above, and in addition:)			TBD		
Order entry					
RIS/PACS					

Data repository and web interface					
Common vocabulary engine					
Review of Conway and Shreveport business practices and development of long-range plan to merge toward common methods, protocols, and procedures					
Ex: Registration					
Family bill					
Financial Counseling Protocols					

Reviewed and Revised
Approved Clinical Board
November 2006