

# ***Development of an Enterprise-wide Information System to Meet North Mississippi Health Services' Strategic Goals and Operational Needs***



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Adapted from Chapter 7 of **[Benchmarking for Hospitals: Achieving Best-in-Class Performance Without Having to Reinvent the Wheel](#)**



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# About North Mississippi Health Services

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- Nonprofit health system
- Largest rural health system in the United States
- Primary market includes more than 24 counties in northern Mississippi and northwestern Alabama that cover approximately 7,500 square miles.
- Consists of:
  - Three hospitals in Tupelo, Mississippi
  - Five rural hospitals up to 75 miles away from Tupelo
  - Numerous clinics and nursing homes
- Mission: To continuously improve the health of the people of the region and to be the provider of the best patient-centered care and health services in America.



# The Project Team

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## Clinical Information Systems (IS) Steering Committee

- CEO
- COO
- CFO
- IS department director (now CIO)
- Medical staff director
- VP of nursing
- Physician user representative
- Community hospital representative
- Off-campus service representative
- Project team leaders from each of the four project teams



# The Project Team cont'd.

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## Project Teams

- End users
- Physicians
- Departmental IS representatives
  - The IS department began including individuals with clinical expertise, not just individuals with technical backgrounds, in order to ensure the information system would meet the needs of its various users.
  - Team members with clinical expertise included registered nurses, a pharmacist, medical technicians, and a respiratory therapist.
- IS department representatives
  - Each department had a separate IS representative to work on the development of the system to make sure it would meet the needs of the department.



# The Problem

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NMHS's information system, first developed in 1975 as a general and new patient accounting system, was outdated and inadequate for its current needs.



# Project Goals

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Develop a progressive enterprise-wide information system to be nurtured and grown to meet the strategic goals and operational needs of NMHS, including:

- Employee retention
- Customer satisfaction
- Cost management
- Departmental performance
- Inventory turnover
- Electronic medical records



# Analyzing Requirements

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- NMHS, a large rural health system, comprised multiple facilities with long distances between each one.
- Patient records needed to be accessible at any facility in the system, regardless of where the patient first entered the system, in order to avoid the creation of duplicate records.
- Each facility in the system needed to have the same information system functionality as any other. A single information system for the entire health system met this goal.



# Addressing Requirements

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- The Clinical Information Systems Steering Committee oversaw the project teams and ensured the proper integration of the information system. This committee developed the five-year strategic plan in accordance with NMHS's strategies, allocated resources to the project teams, and resolved any issues.
- The project teams came up with a detailed request for proposal (RFP) that considered costs, benefits, and risks.
- There was extensive user involvement in identifying necessary system requirements, training and support.

# Implementing the System

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- Implementation
  - Routine departmental and committee meetings were held to manage the implementation of the information system, again with the involvement of the entire health system, including nursing staff, physicians, IT staffers, department heads, service-line administrators, and senior leadership.
  - Heavy involvement of the various users helped in the implementation.
- Policies and Procedures
  - End users from the project teams were responsible for developing the policies and procedures.
- Training
  - The type of training was dependent on the particular module.
  - In some cases, the users would meet every day for a week, and in others, users would get a memo showing screenshots.
  - A popular way of getting users to migrate to the new system was to train a few users who would then train others (“train the trainer”).



# Results

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- NMHS's information system has evolved with the addition of new elements that can seamlessly interact with one another.
- The current enterprise-wide system provides access to electronic medical records, patient care systems, diagnostic systems, administrative and financial systems, support systems, and the cost information decision support system.



# Return on Investment

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- A vast amount of information is gathered and compared to other healthcare systems throughout the country.
- The data are analyzed to identify areas for improvement with respect to patient safety, quality, and financial savings.

# Monitoring and Evaluating Over Time

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- NMHS has electronically linked its information system to databases from Solucient and CareScience, allowing real-time data comparisons with other healthcare systems throughout the country.
- Solucient is the market leader in providing information products to the healthcare industry.
  - Database is made up of more than 26 million discharges per year from 2,900 hospitals, which is 77.5 percent of all discharges.
- CareScience provides a centralized database of patient data from healthcare systems around the country.
  - Data are analyzed to identify areas for improvement with respect to patient safety, quality, and financial savings.



# For More Information

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- Learn more about North Mississippi Health Services: [www.nmhs.net](http://www.nmhs.net).
- More case study presentations are available from the ASQ Healthcare Division: [www.asq.org/health/quality-information/library](http://www.asq.org/health/quality-information/library).
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