

## Preparing for Healthcare Data Integration: Quality, Clinical, Research, and Operational Measures

*Edgewater Technology provides planning and assessment services to improve quality, compliance and outcomes by integrating the diverse data assets of this regional health system.*

### Edgewater Technology's Enterprise Data Warehouse (EDW) Planning and Assessment Services provide this integrated health system with:

- Identification of critical subject areas and data sources needed to support clinical and operational decision-making, performance analysis and improvement initiatives across the full spectrum of care;
- Definition and clarification of core requirements:
  - Clinical
  - Business
  - Functional
  - Data
  - Technical
- Identification of issues, risks and gaps with existing technical architecture, infrastructure, platforms and skill-sets needed for an EDW;
- Recommendations for required hardware, software, staffing, and best practices for implementing an EDW within a healthcare enterprise; and
- A comprehensive tactical plan for the design and build of the EDW, which includes:
  - Conceptual architecture for an integrated data repository
  - Estimated project costs, milestones and delivery dates
  - Projected staffing levels and required skills-sets
  - Hardware and software needs
  - Risks and recommendations for addressing gaps and deficiencies

### **The Vision:**

A leading integrated health system envisioned the value of bringing together their numerous data sources into a seamless data repository with the hope of understanding each patient's experience across the continuum of care. The idea of tracking a patient's clinical experience, outcomes, costs of service, reimbursement and payment activity, across the health system's in-patient, out-patient and home health settings, was attractive. However, their attempts to undertake this initiative proved a difficult and arduous task for several reasons.

Several disparate data sources provided fragmented views of the patient. Problematic data access frustrated the efforts of questioners from various perspectives within the

enterprise. Data quality issues caused decision makers to question the validity of the reported results, and hesitate on action plans to effect real improvement. And the proliferation of multiple, inconsistent end-user tools became a hindrance to accessing needed data by the various user communities within the health system. All of these issues converged on the Information Technology (IT) organization as they grappled to integrate clinical, research, outcomes, patient demographics, diagnosis, and treatment data to satisfy the diverse needs of caregivers, administrators, researchers, and performance improvement teams.

New reimbursement rules from the Centers for Medicare and Medicaid Services (CMS) pertaining to pay-for-performance (P4P) metrics, and extensive new reporting measures from CMS, Joint Commission on Accreditation of Healthcare Organizations (JCAHO), The LeapFrog Group, and other quality benchmarks continue to drive the need for integrated reporting capabilities, built on a foundation of enterprise data repositories that span multiple and diverse subject areas.

### **The Challenge:**

Their first attempt at an enterprise-scale integration proceeded bottom-up: data from numerous individual databases were consolidated within a single logical data model, in the hopes that a "build it and they will come" approach would attract appropriate users. Although at least partially successful in the combining of data in a single place, the absence of a clear set of business drivers failed to spur sufficient interest. And a lack of participation by any of the core constituencies of clinical care, quality metrics, operations management, performance improvement, or research left the organization with an orphaned asset without a sponsor or a champion, and no compelling interest within the potential user base. The system languished essentially unused for a few years.

Despite the failed attempt, it became clear there was a persistent need for the envisioned system. The organization decided on a new approach. Drawing on Edgewater's experience and expertise in Healthcare subject matter, data integration and IT strategy, a new initiative was started with a clear top-down focus. Key executives and constituents from each of the core areas within the enterprise were involved right up front, to ensure the resulting data repository and system would serve the tangible needs of organization.

## *The Business Solution:*

With Edgewater's assistance and direct participation, the health system embarked on a six-week planning and assessment initiative to gather high-level business, technical, functional, and clinical requirements for the EDW, and assess where they stood in relation to the desired goal. The combined team pursued a use case methodology, engaging prospective decision makers and staff in the exploration of potential clinical, operational and research areas where a seamless data repository could substantially improve outcomes and other results.

The goal was to explore and measure each potential subject area using a list of objective evaluation criteria and critical success factors. The results of this evaluation were then used to prioritize the use cases and the subject areas for planning purposes. Project participants were able to clearly see how individual use cases overlapped on data sources and subject areas, and they could examine the relative value of sequencing the rollout in different ways. The organization used these tools to compare the competing use cases, and discuss the trade-offs proactively, building consensus and support on the best plan for a phased implementation.

Since the health system desired both a short-term success and near-term functionality, in conjunction with and as a tangible demonstration of the viability of the longer-term strategy, the assessment included developing an implementation plan to meet both the short and long-term needs.

The planning and assessment stage reviewed ten potential clinical, financial, compliance, and regulatory use cases and subject areas. The analysis included interviews with various subject matter experts, a high-level analysis of transactional source systems, and a review of the existing technical architecture.

The benefits to the health system by conducting the planning and assessment project include:

- An independent evaluation of the use cases, subject areas and critical source systems;
- A well-defined scope for the first release of the EDW; and
- Input and buy-in from all key areas of the organization regarding the future of the EDW.

The organization is now well-positioned to move forward into logical and detailed design and implementation planning, as the authoritative sources for the critical subject areas are tapped and the high-value data assets become available to support the diverse objectives of the enterprise.