

The Best Organizational Structure for Healthcare Analytics

By John Wadsworth

Clinical and financial leaders are interested in finding helpful, new tools, such as an EDW, but they're lacking in technical expertise. IT on the other hand, has the required technical skill base needed to build the EDW but often lacks operational insight to drive quality improvement initiatives in the clinical, financial, and operational arenas.

Your goal is to build or implement an effective and robust **enterprise data warehouse (EDW)** for your healthcare organization. But did you realize the success of your goal may hinge upon your healthcare's organizational structure?

Why should a hospital's organizational structure have anything to do with the success of the IT department's EDW? Because you can't expect or force other departments to use your EDW. Instead, they need to recognize the value of the data and *want* to use it. The best way to make this happen is by developing an organizational structure that supports **healthcare analytics**.

Why You Need Both: An EDW and a Supportive Organizational Structure

By design, an EDW integrates data from across your enterprise. In healthcare, for example, you could tie cost accounting data, hospital billing data, clinical data, and patient satisfaction data. Done correctly, this level of integration could help your organization analyze the following scenarios:

- 1 Which care is the most expensive, affordable, or profitable to deliver?
- 2 Which providers deliver care that results in the best clinical outcomes?
- 3 Which providers do patients rate highly for satisfaction?

Data-backed responses to each of these scenarios hold tremendous value for a given department within a healthcare organization. In my experience, **clinical and financial leaders** are interested in finding helpful, new tools, such as an EDW or analytics, but they're

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lacking in technical expertise. IT on the other hand, has the required technical skill base needed to build the EDW but often lacks operational insight to drive quality improvement initiatives in the clinical, financial, and operational arenas.

While IT may indeed be the department responsible for the development and implementation of the enterprise data warehouse, IT is not responsible for the adoption of the data warehouse by departments around the organization. But if the IT department isn't responsible for demonstrating EDW value, then who is? Imagine, however, if experts from all of the key stakeholders could work together.

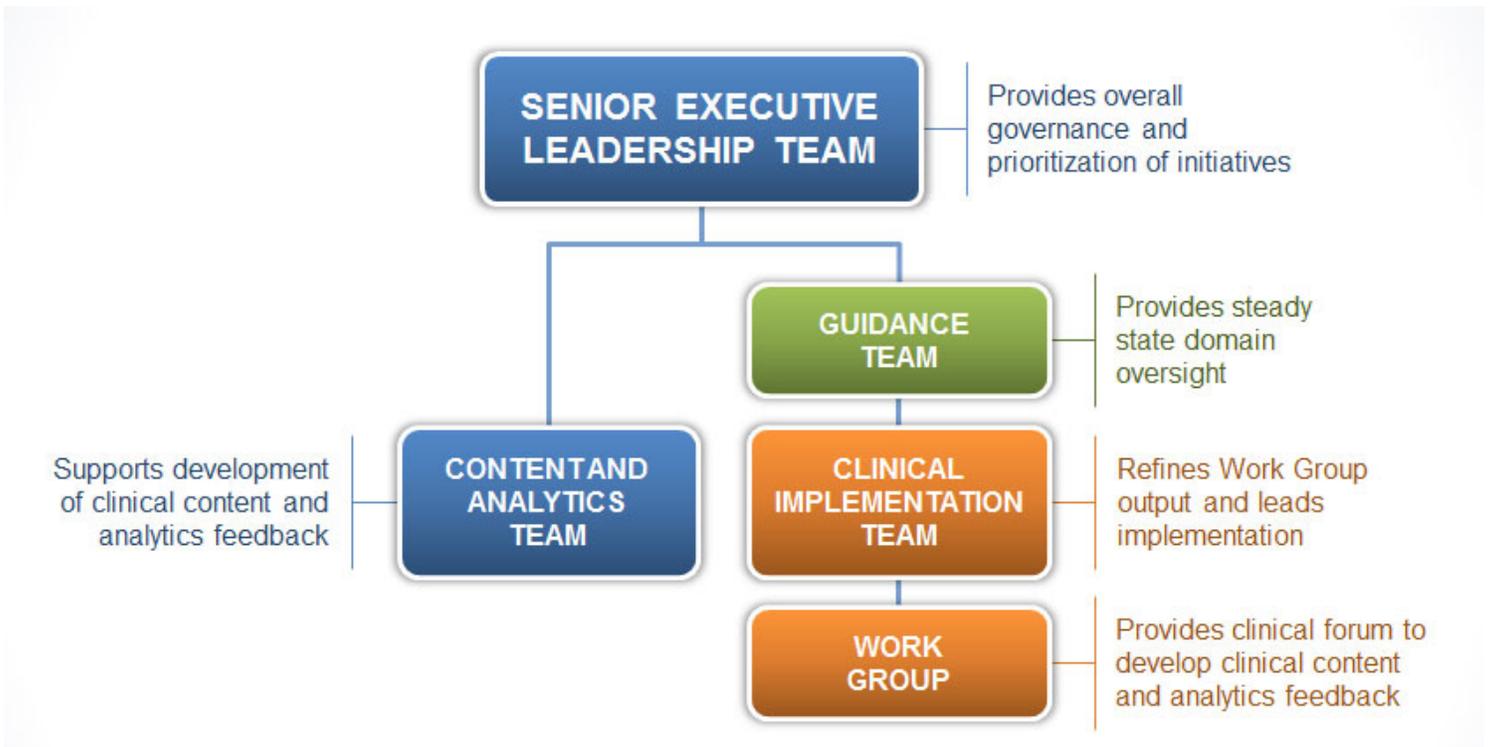
Herein lies a challenge that healthcare organizations wrestle with today. That is, understanding the appropriate quid pro quo relationship between IT and data-dependent departments to demonstrate [ROI on an EDW investment](#). Without this understanding of symbiotic dependency, IT is viewed as a parasitic cost center.

Creating Cross-Functional Teams to Drive Change Through Healthcare Analytics

After working with many healthcare organizations to help them implement the appropriate EDW for their needs, we've learned how important it is to create cross-functional teams from across the organization. Why? These cross-functional teams will simultaneously improve clinical and financial outcomes and demonstrate ROI. By following this approach, you'll experience the following advantages:

- Removal of organizational barriers between team members
- Prioritization of BI and analytic efforts according to institutional readiness and need
- Engagement and prioritization from appropriate leadership
- Buy in from each level of the organization to improvement goals

Here is a basic diagram of the organizational structure we recommend:



Let me explain in more detail the roles and responsibilities of each of these groups:

➤ **Content and Analytics Team:**

The content and analytics team is primarily comprised of data architects and outcome analysts. Initially, this pooled set of resources supports the initial efforts to implement an EDW. Under the direction of senior leadership, this team **mines data** to identify opportunities for improvement. Members of the content and analytics team are assigned to support work groups as they form.

➤ **Workgroup:**

The workgroup is a small, representative sampling of clinical staff responsible for a given clinical work process, such as a C-section, a hip surgery, etc. The group typically consists of a physician lead, an operations lead, and a seasoned RN who understands the patient workflow. Together, this group analyzes the available data surrounding a clinical process to tease out opportunities for improvement, for example, unnecessary antibiotic utilization or variability in a given diagnostic work-up. Experts from Health Catalyst® help this team combine quality improvement principles with data to create realistic

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maps of current and ideal states for a clinical process. The team evaluates and prioritizes each potential improvement opportunity and makes a recommendation to the Clinical Implementation Team on where to start. Members of the workgroup are:

- » **Data Architect:** Builds a solid architecture to capture and provision data from disparate source systems into an integrated platform.
- » **Application Administrator:** Ensures source-system applications function to capture needed data elements.
- » **Outcomes Analyst:** Mines data to identify statistically valid trends/variability that may exist. Interprets and presents information to non-technical peers in a visual format.
- » **Knowledge Manager:** Acts as a liaison between the technical and clinical teams. Usually staffed by an RN, this critical role helps the technical team understand and interpret clinical data as they seek to build algorithms that mimic clinical workflow.

» **Clinical Implementation Team (CIT):**

This group consists of practicing clinicians who own a clinical process within an organization. The CIT roughly aligns with clinical practice specialties. The CIT role is crucial to widespread adoption of clinical improvements. The CIT hears findings and recommendations for improvement from the work group. Ultimately, it's the CIT group that will champion adoption of the improvements by incorporating recommended changes into their daily workflow. This is a key venue for physician-led, improvement initiatives. The CIT will own the rollout of the improvement process to ensure staff understands the downstream effects of changes in workflow.

- » **Guidance Team:** The guidance team provides governance over all the workgroups and clinical implementation teams under a clinical program. For example, a guidance team for the Women and Children's clinical program may oversee three separate workgroups focusing on gynecology, pregnancy, or normal newborn. The guidance team takes into account resources, organizational readiness, and political climate to determine which workgroups receive priority. This team reports to senior executive leadership.

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- » **Senior Executive Leadership:** While the senior leadership retains the final word on which efforts are prioritized and executed upon, the existence of self-sufficient guidance teams takes much of the burden of the analytics effort off senior leadership. Senior executives consider the well-informed recommendations of the guidance teams to make decisions about where best to focus resources. The hierarchy of workgroups to executive leadership supports greater transparency and visibility around improvement efforts. An additional benefit of the hierarchy is improved transparency, which minimizes the risk of putting effort into projects at odds with strategic direction.

Structuring Your Healthcare Analytics Workgroups

How do you get started creating this organizational structure? When Health Catalyst works with a client, we start by analyzing a sample data set from the client and sharing our findings with senior leadership to determine the best two or three opportunities for improvement. Then we structure workgroups accordingly. Once these initial workgroups are running successfully and the process begins to mature, senior leadership steps back from the details of the process, forming the guidance teams to govern the workgroups. This delegation of responsibilities creates a sustainable structure for ongoing improvement throughout the organization.

But I'd like to point out: this process doesn't happen overnight. It takes many months to develop mature, data-driven, physician-led clinical programs. Then we introduce the concepts embedded in the [Healthcare Analytics Adoption Model](#) (source: Electronic Healthcare 2012), developed by a cross-industry group of healthcare industry veterans. The model builds from the lessons learned from the HIMSS EHR Adoption Model but applied to healthcare analytics. We help each system assess where they are on the Analytics Adoption Model and how to grow and evolve from their current state.

Done right, we consistently find that the culture changes and IT staff and data-dependent departments enjoy healthy, symbiotic growth within their health care organization.

I'm not going to minimize the effort required to implement the organizational structure outlined above. It takes work. Lots of work. But it's doable. And it works.



About the Author

John Wadsworth joined Health Catalyst in September 2011 as a senior data architect. Prior to Catalyst, he worked for Intermountain Healthcare and for ARUP Laboratories as a data architect. John has a Master of Science degree in biomedical informatics from the University of Utah, School of Medicine.

Resources

- Late-Binding™ Data Warehouse Platform <http://www.healthcatalyst.com/late-binding-data-warehouse-platform>
- Healthcare Analytics Adoption Model <http://www.healthcatalyst.com/healthcare-analytics-adoption-model/>
- Surviving Value-Based Purchasing in Healthcare: Connecting Your Clinical and Financial Data for the Best ROI <http://www.healthcatalyst.com/white-paper/surviving-value-based-purchasing.html>
- What Does a Data Warehouse Cost? How to Get a Return on Your Investment <http://www.healthcatalyst.com/real-cost-healthcare-data-warehouse/>
- What is Data Mining in Healthcare? <http://www.healthcatalyst.com/data-mining-in-healthcare>
- Healthcare Analytics Adoption Model <http://www.healthcatalyst.com/healthcare-analytics-adoption-model/>

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Based in Salt Lake City, Health Catalyst delivers a proven, Late-Binding™ Data Warehouse platform and analytic applications that actually work in today's transforming healthcare environment. Health Catalyst data warehouse platforms aggregate and harness more than 3 trillion data points utilized in population health and ACO projects in support of over 22 million unique patients. Health Catalyst platform clients operate 96 hospitals and 1,095 clinics that account for over \$77 billion in care delivered annually. Health Catalyst maintains a current KLAS customer satisfaction score of 90/100, received the highest vendor rating in Chilmark's 2013 Clinical Analytics Market Trends Report, and was selected as a 2013 Gartner Cool Vendor. Health Catalyst was also recognized in 2013 as one of the best places to work by both Modern Healthcare magazine and Utah Business magazine.

Health Catalyst's platform and applications are being utilized at leading health systems including Allina Health, Indiana University Health, Memorial Hospital at Gulfport, MultiCare Health System, North Memorial Health Care, Providence Health & Services, Stanford Hospital & Clinics, and Texas Children's Hospital. Health Catalyst investors include CHV Capital (an Indiana University Health Company), HB Ventures, Kaiser Permanente Ventures, Norwest Venture Partners, Partners HealthCare, Sequoia Capital, and Sorenson Capital.

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