

People, Process, then Technology –

How Henry Mayo Newhall Hospital Architected a Roadmap for BI Success

Key Learning Objectives

The changing landscape in healthcare has created a national conversation on data, reporting, and analytics. As a result, health systems have become increasingly focused on leveraging their clinical, financial, and operational data to help support and balance patient care goals with cost containment and financial outcomes. Business intelligence (BI) and data warehousing (DW) capabilities are key drivers that empower these objectives, but the technology itself isn't a magic bullet. Failed BI initiatives lead to wasted resources, time, and a user community and leadership team distrustful of further efforts.

The goal of this white paper is to highlight several best practices in successful BI deployments that will allow a provider organization to set the stage for quick wins and a demonstrable ROI within the first year of implementation. In addition, organizations that have already invested in BI tools can compare their deployment processes and actions against these best practices to identify areas for improvement.

"It's important for people to understand this isn't something you buy and leave alone because it does things for you. You need to resource it with staff that is dedicated to that function. Having a dedicated department that is separate from the demands of other areas, but that has the support of Administration is really an advantage that helped us succeed."

*– Lynn Coddington, Director of Decision Support
– Henry Mayo Newhall Hospital*

Plan Then Execute

As part of its vision to create an ideal patient-centered environment, Henry Mayo Newhall Hospital embarked on a multi-year journey toward becoming a "digital" hospital. The process started with a decision to replace a mainframe-based computer system with a MEDITECH Client/Server Healthcare Information System. The EHR was to be implemented in two phases: Phase 1 replaced admissions, order entry, pharmacy, lab, and patient billing functionality; and Phase 2 was to implement advanced clinical applications, including Emergency Department Management (EDM).

In the midst of all these technology deployments, the organization recognized it had a resource, information access, and reporting gap. As a result, hospital leadership agreed that success would ultimately be dependent not on the technology alone, but on the hospital's ability to execute in the following four areas:

1. Create a dedicated department responsible for supporting the information needs of the organization.
2. Resource this new department with the organization's best data experts – individuals that had an in-depth understanding of the relationships within the data and possessed an analytics-focused background.
3. Align the department's charter with the hospital's strategic plan and use this to prioritize BI development projects and goals.
4. Task this team with the selection and deployment of a BI platform capable of providing a unified view into dozens of disparate applications and systems.

4 Steps to ROI in 12 Months (or less)

Step 01

Start Small. Keep it Simple.

At the beginning it's important to stay focused. The first step to success is resource dedication combined with a project-oriented approach. Create a small, dedicated group responsible for the development and creation of any BI content. Establishing a single department (Decision Support, BI Competency Center, etc.) that has buy-in and involvement from hospital administration accelerates project roll-out and process improvement efforts that require tapping into data from multiple areas (Initial Implementation - Finance, Billing, Reimbursement, Coding, Patient Encounter and Utilization, and Cost Accounting. Phase 2 - Payroll, Clinical, Patient Experience, Market Share Data, Meaningful Use). Avoid the temptation to throw too many elements into an initial project. The larger the project, the more unwieldy and difficult it becomes and the concept of a "quick win" heads right out the window. Your business users become frustrated with the time lag and management starts to worry about whether they made the right decision.

"One key to our success was taking a modular, phased approach. We didn't take the approach of developing a large data warehouse with every data element in it that we thought we might need. We stayed focused. It helped us get to a win faster and produce good results in a quicker fashion."

*– Cindy Peterson, VP/CIO
– Henry Mayo Newhall Hospital*

Step 03

Strive for a Single Tool Environment.

Standardize on a single tool set for development and creation of any BI content that is disseminated to end-users or department heads. End-user adoption is critical to success. This can only be achieved if there's confidence in the data. By consolidating development of BI content to one group and standardizing on one tool, data integrity is maintained, business rules can be applied consistently and systematically, and business users can focus on taking action instead of worrying about the validity of specific numbers. In addition, standardizing on a single tool accelerates development productivity. Analysts become more proficient in using a standard tool set, training costs can be minimized, and bottlenecks due to varied skill sets can be nearly eliminated. Resource allocation is much easier to manage. As a result, projects are delivered to business users much more quickly than in multiple tool environments.

Step 02

Avoid Going Rogue. Every Hospital has a Strategic Plan – Use It.

There are a number of advantages to adhering to a strategic plan. First, it provides context for day-to-day activities and gives employees and departments a sense of how their contribution fits into the larger picture. For many individuals, this context provides meaning and increases employee engagement and productivity. Second, strategic plans live and die by their ability to measure performance. Are we doing better? Worse? Maintaining status quo? The strategic plan is a succinct outline of exactly what areas need to be measured and where organizations need to focus energy. Finally, the best part about the strategic plan is that it grants you the permission to say "no" (or at the very least discuss trade-offs). After plans are rolled out, they often lose momentum. New requests crop-up and all of a sudden there's a backlog of "priorities". With the strategic plan as a reference point, you can point out that it's off-plan or at least have a constructive dialog about priorities and timelines.

Step 04

Use Consulting Services Differently.

Use your vendors' consulting services as a form of "immersion" training for your newly formed team of BI developers. Most BI implementations will include training for developers and end users as part of the core roll-out. However, by budgeting in additional consulting services or swapping out training time for additional consulting, your team will get the added benefit of shadowing an individual with greater expertise in a new tool set, thereby shortening ramp-up time. Using this approach allows initial projects to get completed more quickly, building confidence in the selection of a given tool and greater satisfaction with deployed staff resources. Stay disciplined with this approach. When a consultant is on-site, the team must be highly involved with this resource and their work flow process. Resist the urge to let these consulting resources work independently because your in-house resources are too busy putting out other fires. Spend ample face-time, be inquisitive, and have the team learn the tricks of the trade to increase their own efficiency levels and build product expertise.

“We used the hospital’s strategic plan as a way to prioritize our list of projects. It’s a good strategy to make sure you are working on things that will ultimately drive value for the organization and produce results.”

– Cindy Peterson, VP/CIO

– Henry Mayo Newhall Hospital

Outcomes/Results

The Emergency Department: Improve the Patient Experience and Increase Revenues

By using the strategic plan as a guide, Henry Mayo first set out to improve patient flow in a number of areas. In order to keep the project focused and achievable, the organization decided to concentrate on the Emergency Department. By pairing the data experts in the Decision Support team with the subject matter experts in the ED, the organization was able to understand which metrics were important. As a result, they were able to begin tracking them, using this information to identify and then reduce bottlenecks during the triage process.

- Decrease of patient wait times within the ED
 - Average “door-to-doctor” time <10 minutes
 - ED Entry to Triage, 80% improvement
 - Triage to Room, 60% improvement
 - Room to Physician, 63% improvement
 - Reduction in patients leaving ED unseen
 - 50% year-over-year decrease for the past two years (Now <1% of total visits)
 - Increase in ED revenues
 - \$1M/year in increased revenues attributed to the reduction in patients leaving and wait time improvements
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“Leaders are 69% more likely than Followers to use a single integrated tool to develop their BI content.”

– Aberdeen Group, October 2013.

– Achieving Fast ROI for BI Projects.

Reducing Length of Stay

Length of Stay (LOS) is always a significant metric given Medicare reimbursement rules. Another project focused on identifying LOS trends to pinpoint physicians whose practice decisions routinely put patients over the accepted LOS threshold or whose use of resources far exceeded those used by their peers caring for similar patients. With their selected BI tool, Henry Mayo’s Decision Support team collected data across several clinical and financial systems to isolate these data points for further discussion and resolution by medical staff and physicians. By having timely access to accurate data, the organization has been able to realize a \$3M improvement in Medicare reduction in length of stay.

“We purchased a block of consulting that we knew would take us beyond the initial implementation. This was a really helpful strategy – we didn’t want to be left with a new tool and a long project list, so we used initial consulting time to help as kick start projects that would have been difficult for us to tackle at the beginning of our learning curve. Ultimately, we used the consultant as a way to learn how to do it ourselves.”

– Lynn Coddington, Director of Decision Support

– Henry Mayo Newhall Hospital

Financially Stable, Operationally Secure

Recently, the organization had to secure funding for a sizable expansion and other capital improvement projects. In preparation, Henry Mayo’s CFO was asked to prepare a number of financial reports to demonstrate the relative health of the organization. BI played a critical role for the Decision Support team in providing the data required for due diligence and successfully securing the bonds for the projects. As a result of the organization’s performance and the ability to clearly and succinctly provide deep and detailed views of its financial and operational performance, Henry Mayo was able to secure investment grade bonds saving the organization substantial financing costs.

“We have the ability now for my CFO to come into my office and ask for something that three years ago would have been totally unreasonable. Now I can give him the information he’s after in about 30 minutes. Our saying is, ‘the difficult is done immediately and the impossible will take a couple hours’. We do the impossible with this tool.”

– Lynn Coddington, Director of Decision Support
– Henry Mayo Newhall Hospital

Lessons Learned

Centralize Development and Reporting into a Single Group

When access to information is viewed as an advantage, nobody wants this capability “taken away”. While many organizations inherently understand the importance of centralizing the integration and data validation process, when it comes to reporting, this capability tends to spread far beyond a single group. Decentralizing the reporting function can result in a fair number of challenges – some of which could put your entire ROI at risk, for example:

■ **Avoid Breeding Mistrust** – When different staff resources are creating reports outside of a centralized group, there is no concrete way to standardize on process. Typically this means different methods were applied to collect the data and that any consistency applying business rules may not have been followed. While the intent to help is genuine, the existence of similar reports with different numbers only fosters mistrust and slows productivity. By creating a centralized group that handles both the development and reporting, your organization builds consistency into the report creation process and provides business users and executives with a trustworthy single version of the truth.

■ **Eliminate resource confusion and support user satisfaction** - When report creation is highly decentralized, business users will naturally engage the individual that created the report as their first point of contact. Often times these individuals may have deep expertise in their specific domain, but may not have the resource, access, or skill set to pull in additional data feeds from other systems, or be aware of any specific business rules that need to be applied to deliver an accurate view of the issue at hand. This creates an inefficient workflow and slows the time it takes to provide an answer back to the business user. Under a centralized group, time to information can be accelerated and data integrity can be maintained.

About Henry Mayo Newhall Hospital

Henry Mayo is a 238-bed, not-for-profit community hospital and trauma center located in Valencia, California with over 400 dedicated medical staff and 1,300 employees. The hospital offers a wide range of care services from Emergency and Maternity services to a community cancer program and an advanced primary stroke center. According to the American Hospital Directory, the facility had 11,086 patient discharges and 56, 573 total patient days for 2013.



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About Dimensional Insight

Dimensional Insight® is a leading provider of analytics, data management, and performance management solutions, offering a complete portfolio of capabilities ranging from data integration and modeling to sophisticated reporting, analytics, and dashboards. The company is a six-time Best in KLAS winner in healthcare business intelligence and analytics, most recently ranking #1 in 2019. Founded in 1989, Dimensional Insight has thousands of customer organizations worldwide. Dimensional Insight consistently ranks as a top performing analytics organization by customers and industry analysts in its core market segments including healthcare, manufacturing, and beverage alcohol.



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