



Case Study: Heartland Medical Center

The Challenge

Heartland Hospital invested in a robotic surgical center. Currently, the program is underperforming due to limited surgeon training opportunities and lack of access to timely, trusted, and accurate information about clinical and financial performance.

The Solution

A customized surgeon training program from Minimally Invasive Solutions to address clinical needs, combined with a data-driven service line management system from PotentialMED, allowing Heartland to maximize the effectiveness of its robotic program.

The Result

Through identification of high-yield referral sources and an analysis of case-mix factors, PotentialMED enabled Heartland to identify alternative practice patterns expected to more than double bypass revenues over a 5-year period, with a 47% increase in overall cardiac surgical revenue.



Employing the custom-tailored suite of Team PotentialMED's tools for process planning, analytical modeling and business information management can amplify the collaborative efforts of clinicians and administrators. Team PotentialMED supports the efficient and effective implementation of these solutions by providing a full range of strategic, technical and business advice. The result is a unique mix of quality healthcare, greater patient satisfaction, and more efficient operations.

Seeking Sustainability in an Climate of Uncertainty

In recent decades, firms in all areas of the healthcare industry have faced increasing competitive pressures, and Heartland Medical Center¹ is no exception. Declining reimbursement rates, an aging and generally sicker population, frequent emergence of disruptive new technologies, and constant efforts on the part of payers, both private and public, to commoditize every aspect of healthcare has prompted Heartland to reexamine its long-term growth strategy.

Heartland's leadership was determined to take a stronger role in shaping the emerging clinical and economic environment. By identifying market trends in their early stages, the hospital intended to position itself to meet the evolving needs of the community it had served for over 50 years.

After considering current market features, historical shifts in the region, and the hospital's clinical expertise, Heartland's board concluded that the greatest growth potential existed in its cardiac service line. While cardiac procedures already contributed significantly to the hospital's overall revenues and profits, the board believed that the recent emergence of numerous technical advances created an opportunity for Heartland to develop a renewed and sustainable operational and competitive advantage.

Declining reimbursements, an aging and sicker population, and the frequent emergence of disruptive technologies prompted Heartland to reexamine its growth strategy.

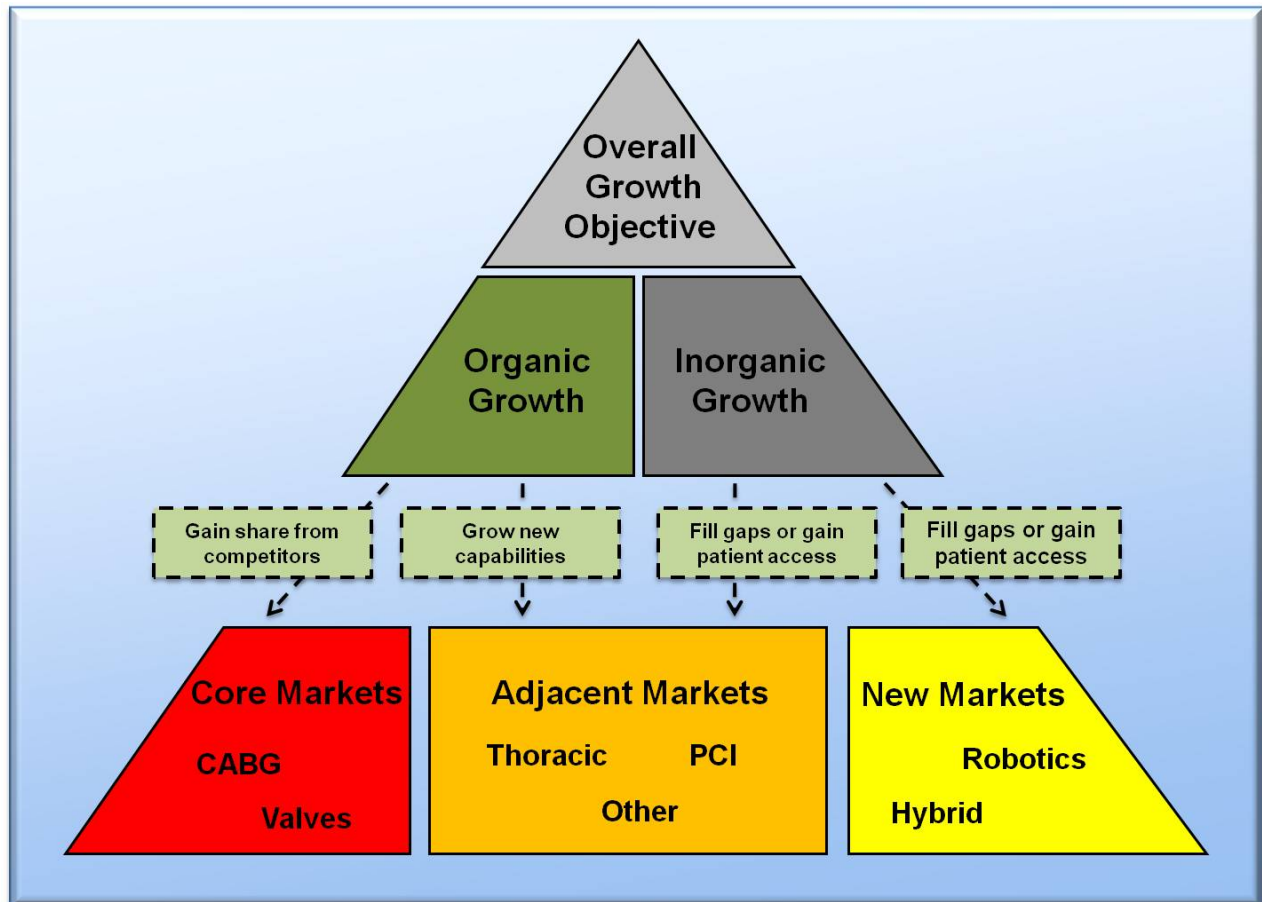
The hospital purchased a robotic surgical system and invested heavily in training its physicians and staff, with the long-term goal of establishing the region's premier robotic surgical center.

In addition to the clinical advancements made possible by the technology, the hospital recognized three broad strategic benefits offered by the investment:

- **Building a world-class reputation** – With the founding of the region's most advanced cardiac care center, Heartland would establish its position among the ranks of an elite group of providers serving a regional market, attracting patients in search of cutting-edge treatment and top clinical talent.
- **Establishing a solid financial base** – Heartland's cardiac service line already provided a significant portion of the organization's revenues, and generated 40% of its operating profits. The next-generation procedures made possible by the new center would generate a stable revenue stream, covering the program's large initial investments and establishing a buffer for the other departments, which collectively operated with razor-thin, highly variable, and frequently negative margins.

¹ PotentialMED understands the critical role of information in driving success, and considers the protection of its clients' proprietary data a top priority. While the events detailed in this case describe an actual client engagement, certain details, including certain names, have been changed to protect the interests of the client.

- **Strengthening relations with the surgical community** – Given the critical role of cardiac surgery to Heartland's operations, the hospital was only as strong as its relationship with its referring physicians and the broader medical community. To ensure the best outcomes a robust training program is required to support the surgeons as they learned how to use the new technologies and related surgical approaches,



An Unexpected Obstacle: the 'Training Gap'

While the hospital expected to encounter difficulties in the program's initial months, surgeon training was proving to be an unanticipated source of trouble. For Heartland to achieve the broad strategic goals it had set, surgeons needed a clear clinical pathway that would allow them to develop the necessary technical skills. Contrary to Heartland's expectations, the manufacturer's support staff was only able to provide provided limited training capacity for interested cardiac surgeons who were vital to the hospital's success.

Without a robust training program, many of the features that contributed to the system's initial attractiveness threatened to present new difficulties. With anything less than superior clinical outcomes in the program's initial months, Heartland would face additional challenges convincing referral sources and their patients, as well as the wider community, of the value of robotic surgery.

At the same time, staff in urology and gynecology, with their focus on generally less complex and time intensive procedures were quickly developing extensive robotic experience. Many were regularly offering patients robotic surgical options, and their procedures accounted for a growing fraction of total surgeries in the new center. While the shorter nature of these surgeries was having a moderately positive impact on procedure volumes, their lower contribution margin was jeopardizing the surgical center's overall sustainability. Over the long term, the growing importance of robotic procedures in these departments could raise difficult questions about the allocation of operating time when the system began to reach capacity.

Promptly addressing issues with surgeon training was of paramount importance. The market for coronary artery bypass procedures, traditionally a major driver of the hospital revenue, had steadily weakened in recent years with the emergence of drug eluting stents, improved catheter designs, and drug treatments. While Heartland's decision to focus on emerging techniques like hybrid revascularization offered a promising avenue for growth, the financial downturn had left the hospital facing a business climate with much smaller margins of error.

Designing an Infrastructure for Long-Term Growth

To address training issues in the short term and develop strategies for sustainable, long-term growth, Heartland partnered with PotentialMED and Minimally Invasive Solutions (MIS). Working closely with both administrators and clinicians, Heartland and MIS developed a clinical training program tailored to the hospital's unique needs, while the team at PotentialMED developed a comprehensive, data-driven process for managing Heartland's cardiac service line.

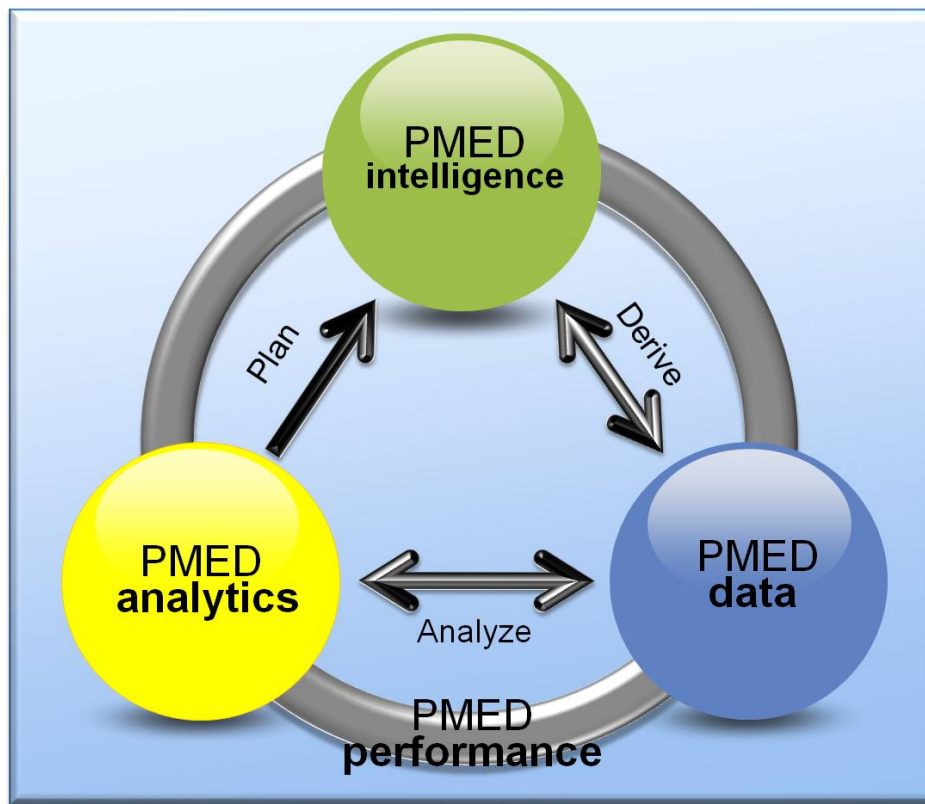
Working with clinical and financial data from Heartland, a set of proprietary data sources, and the advanced data mining and quantitative tools from its PMED analytics software, PotentialMED began with a comprehensive overview of the local and regional markets. In addition to providing Heartland with a deeper, broader understanding of the underlying relationships between the internal and external factors driving profitability and quality of care, this assessment served as a foundation for more sophisticated models.

Linking long-term objectives to operational practices allows Heartland to monitor progress on multiple levels, and provides a single, clarifying context for performance metrics.

Building on the information and insights from the market analyses, PotentialMED then expanded the scope of its models to incorporate emerging and potential future market trends, and the impact of those changes on Heartland's performance. Using the predictive analytics and forecasting tools included in its PMED analytics software, PotentialMED enabled Heartland to develop a data-driven strategic plan linking long-term objectives with operational practices. Drawn from this plan, the key performance indicators (KPIs) identified by PotentialMED allowed Heartland to monitor progress on multiple levels, balance performance across the organization, and maintain a clarifying context for individual performance metrics.

Finally, PotentiaMED provided a comprehensive environment, PMED intelligence, through which clinical staff, managers, and other users at Heartland could access organizational information through a set of custom-tailored dashboards. With rapid response times, an intuitive interface, and extensive drill through and drill down capabilities, these dashboards enabled users at Heartland to monitor results, explore complex data, and identify subtle relationships between practices and performance.

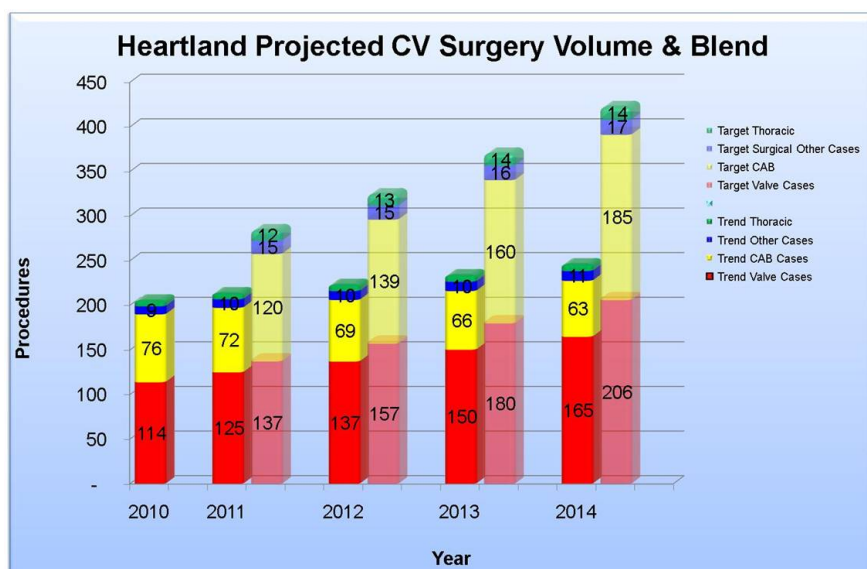
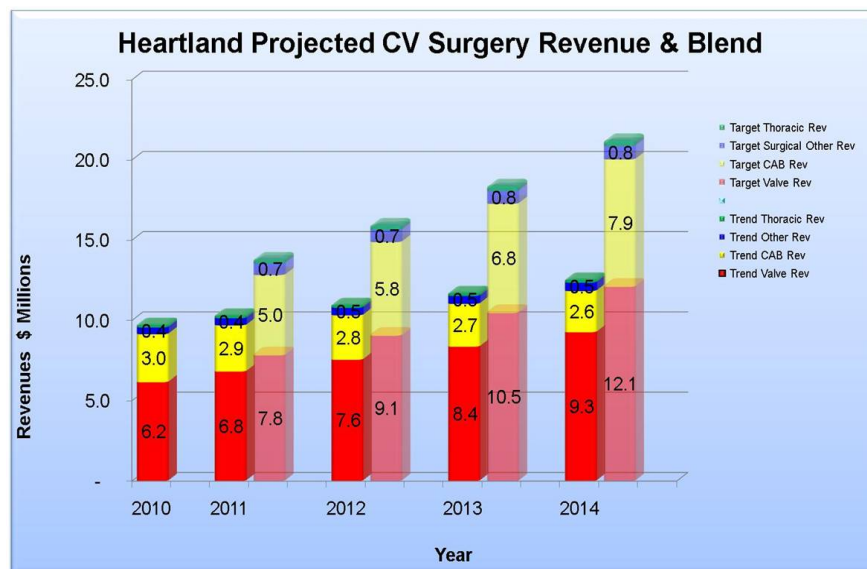
Clinical excellence requires that providers have access to trusted information at the right time and place, in the right format. With the tools developed by PotentiaMED, Heartland can now harness and share the critical information needed to drive analytic decisions, provide stronger operational transparency, and promote accountability in every aspect of operations.



A Roadmap to Clinical Excellence and Financial Success

Using the models and tools developed by PotentiaMED, Heartland has been able to identify high value referral sources and develop alternative case mixes, both of which are estimated to provide significant improvements in both procedure volume and profitability.

Over a five-year period, PMED analytics forecasts a 115% increase in bypass surgery revenues from optimization over the baseline trend with the introduction of hybrid revascularization procedures, with an increase in total cardiac surgical revenues of 47% over baseline. In contrast to an estimated 4.5% decline and a 3.7% decline per year in total bypass cases and revenues, respectively, the focus on advanced hybrid techniques in the optimized model allows heartland to expand bypass cases by approximately 15%, and revenues by 16% annually.



About Us:

PotentiaMED partners with hospitals, medical practices, life sciences and pharmaceutical firms to deliver transformational healthcare information to drive improved patient care and profitability. PMED analytics, our patent pending forecasting and analytics tool, combines proprietary and client data concerning costs and case yields to define and drive engineered growth. Our web-based PMED intelligence and Personal Electronic Medical Records (PEMR) solutions integrate data from disparate sources to deliver critical information to both doctors and patients with easy-to-use reporting dashboards, ensuring information required to guide medical decisions and track outcomes is available at the necessary time and place, and an effective format. Together, the suite of PotentiaMED tools enables clients to transform data into information, and information into insights.

Minimally Invasive Solutions specializes in surgical robotics consulting. We are dedicated to providing proven solutions for hospitals looking to build successful robotic surgery programs, surgeons looking to enhance their robotic skills and grow their practices, and manufacturers wanting to maximize product offerings in robotic surgery. Our highly customized, comprehensive services provide proven solutions that enable you to achieve optimal results, while maximizing profitability.

IBM Cognos delivers a revolutionary new experience and expands traditional business intelligence (BI) with planning, scenario modeling, real-time monitoring and predictive analytics.

Offices:

PotentiaMED LLC
10411 Clayton Road
Suite 210
St. Louis MO 63131
Ph: 866-285-7841
Fax: 314-248-0100
Email: info@potentiamed.com

