



The Computerworld Honors Program

Honoring those who use Information Technology to benefit society

Final Copy of Case Study

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STATUS:
Laureate

Organization:
Perficient Inc.

Organization URL:
www.perficient.com

Project Name:
Perficient and Texas Children's Hospital

What social/humanitarian issue was the project designed to address? What specific metrics did you use to measure the project's success?

Meaningful Use. Accountable Care. Health Information Exchange. These are just a few of the trends the healthcare industry is challenged with addressing as it undergoes rapid transformation and modernization. Pressure from a wide range of sources are forcing both providers and health plans to look at their data and technology investments in new and innovative ways to become smarter healthcare organizations. To enable a smarter healthcare system that offers better patient care and better business value, it is critical for hospitals and insurance companies to adopt holistic, business-driven technology solutions that are agile, integrated and interoperable, enabling data sharing between critical systems, collaboration between stakeholders, and compliance with industry standards and regulations. Consider Texas Children's Hospital (TCH), an internationally recognized full-care pediatric hospital dedicated to providing the finest pediatric patient care, education and research. Clinicians at the Texas Children's Heart Center were responsible for developing and utilizing outcomes and research reports that often used different approaches to data management. Nurse researchers, cardiology physicians and researchers created spreadsheets to manage their day-to-day activities, a practice which resulted in more than 450 spreadsheets along with various other disparate data sources. The complexity of this data management infrastructure began to manifest into several issues, including hindering the team's ability to effectively manage their work, loss of productivity, low data quality, increased costs and inefficient use of time. Perficient, in partnership with Microsoft, set out to help TCH implement a business intelligence technology solution that would give TCH the ability to not only

use their data to increase financial efficiency and operational effectiveness, conduct innovative research and satisfy regulatory requirements, but also create an environment that allowed them to provide the best patient care in the most efficient and effective way possible.

Please describe the technologies used and how those technologies were deployed in an innovative way. Also, please include any technical or other challenges that were overcome for the successful implementation of the project.

Perficient created a data warehousing solution using Microsoft SQL Server as a back end with web browser-based data collection tools to measure Congenital Heart Surgery (CHS) data to measure efficiencies to delivery on the promise of clinical and operational performance management. This data was collected, extracted and transformed using complex workflows to produce a single system of record using SQL Server Integration Services, SQL Server, .Net and the Microsoft Office suite. ASP.NET technology was used as a web browser-based data collection tool, since TCH has Microsoft as a standard technology platform. SSIS packages, EPIC Clarity and Bridges were recommended and used for the EPIC Interface of clinical documentation, Anesthesia, and OpTime data integrated into the Heart Center Data Warehouse. The integrated Heart Center Data Warehouse provided the surgical data pull for Outcomes reporting.

Please list the specific humanitarian benefits the project has yielded so far.

Perficient's Martin Sizemore puts it in perspective: "Hospitals and healthcare organizations deal with people, patients with real medical needs that simply don't want to be a number or a faceless statistic. As the pressure to manage population health increases, organizations must remind themselves they are creating all of these technology solutions, tracking the metrics and reporting them to prove that patients are getting improved outcomes." Through technology, TCH can track operational efficiencies, manage costs and most importantly, provide the quality of care that patients need to live longer, healthier lives. Cost avoidance: As more analytics and reporting are handled by the system, the cumulative business value increased into thousands of hours redirected to other tasks. CHS surgeons now enter surgery data on a .Net web app ODWA in eight minutes. Their value time is now redirected to more business-critical pursuits. Improved reporting tools: Layered on top of the analytics and data mining capability are business intelligence reporting functions that provide easy visibility into reporting for outcomes and research information that were previously difficult to ascertain. Increased productivity: Enhanced visibility into billing capture, patient outcomes, and research data provides users with a trusted single source for data needs Accurate and timely reporting: The accuracy and timeliness of data for TCH's regulatory reporting and data harvesting provide timely information needed for the TCH's Outcomes book published with 2010 and 2011 CHS data, the only outcomes book published in the Texas Medical Center in Houston. Increased recognition and reputation: Outcomes data reported has resulted in TCH ranking #4 in the U.S. and #1 in Texas in pediatric heart care and heart surgery by U.S. News & World Report. TCH is actively sought for congenital heart treatment, with patient families referencing the published outcomes of the surgical team.

Please provide the best example of how the project has benefited a specific individual, enterprise or organization. Feel free to include personal quotes from individuals who have directly benefited from the work.

The best way to showcase the benefit of this solution was referenced in a speech given by Microsoft CEO Steve Ballmer during a presentation at the Houston Technology Forum on March 10, 2011. Here is an excerpt from his speech: "A woman in Kansas finds out that her not-yet-born grandchild has a fetal heart problem and says, "What am I going to do about this?" She starts searching around, and the only hospital that had both good systems to allow her to find them, and

that actually could demonstrate what their outcomes had been with in-utero fetal heart surgery, was the Texas Children's Hospital. They captured that information, they published it, they had it in place where this grandmother in Kansas, doing her research on the Internet, using information published by TCH, was able to not only tell her child, look I found these people, but it looks like they actually get very good outcomes. [TCH] did an in-utero procedure on the mom and the success story is there. The baby is fine, has lived in a way that you just can't imagine in a generation prior to information technology. TCH is now getting referrals for these kinds of procedures based upon real outcomes. Very few healthcare institutions can actually prove to you they have real outcomes. They don't have the data and systems to support it. And yet, TCH does. And that's as dramatic a story as I frankly have ever heard about the use of our technology."