High-Performance Costing Expressway
A Solution to the “Signal to Noise” Problem for Healthcare Organizations
**Introduction**

Decision support systems are something businesses take for granted. Having data and multiple systems is no longer a wish list for organizations – it is a problem. Organizations across all industries are inundated with large quantities of data located in disconnected systems. This data by itself doesn’t make a company successful; organizations must act on information and filter what is useful, appropriate and above all else, actionable. Those few organizations that are able to leverage all of their data and harness the power of insightful and timely analytics have been differentiated in the market.

The “Signal to Noise” ratio refers to identifying which information is applicable (the signal), and which is a distraction (the noise).

\[
\frac{\text{Signal}}{\text{Noise}} = \frac{\text{Meaningful Information}}{\text{Unwanted}} = \frac{\text{Actionable Indicators}}{\text{Distracting Questions}}
\]

With this overabundance of data, healthcare organizations need to be able to home in on a select few (dozen) measures across the key domains: patient care (operations) and administrative (financial, supply chain, human resources).

Embracing data-driven decision making in a provider setting requires agile thinking to pinpoint and respond to the short- and long-term needs of the organization. This shift requires finance
departments to transcend from the typical focus on aggregating data to a value-added analytical view of hospital data. This new approach will provide greater visibility into changes in variables and assumptions and will require organizations to fully understand and ensure transparency exists for key performance indicators.

In evaluating supplies, labor, productivity or clinical effectiveness, the quality/cost/value equation requires an organization to truly understand their data. This includes not only considering the right product at the right place but also applying a broader perspective on clinical evidence for resources used and approaches employed. The Perficient High-Performance Costing Expressway provides a complete solution that enables hospitals to rapidly deploy a micro-level costing solution. It provides integrated software and hardware with a prescribed set of data integrations and services to quickly deploy a costing application. The Perficient High-Performance Costing Expressway leverages Oracle’s Hyperion Profitability and Cost Management (HPCM) and Enterprise Health Analytics (EHA) solutions and is also an integrated foundation for applications of advanced costing.

The Perficient High-Performance Costing Expressway supports the dynamics of Accountable Care; the only difference is from which lens. Are you a budget director, chief financial officer, or financial analyst who sees hospital activities as average length of stay (ALOS), bed days, readmissions, and full time equivalents (FTE)? Or are you a quality director, performance improvement analyst, or chief medical officer who looks at hospital activities as patient safety indicators (PSI), hospital acquired infections (HAC), or national quality forum (NQF) measures? Both perspectives are valid and both perspectives use essentially the same data.

To use a travel analogy: If you are in Los Angeles, you would travel east to Chicago. If you were in New York City you would travel west to Chicago. Being in either Los Angeles or New York is your perspective, but your goal is to meet in Chicago. The same east/west perspective fits for the use of HPCM or EHA. Are you starting with administrative data or patient care data?

Using HPCM as your capacity planning solution allows for complete integration into the Hyperion financial reporting platform and keeps synchronization with the EHA and operational activities. Alternatively, using EHA as your solution provides the ability to focus on quality and outcomes. Again, it’s a perspective question: “Where do you want to start?” All three pillars of the Triple Aim – Cost, Quality and Access – have to be satisfied; your organization can choose the origin.

Business Decision Support

Oracle’s William Bercik, Director of Healthcare, has defined Business Decision Support as:

“A fully integrated business and clinical repository that gives healthcare delivery system executives and managers the tools to control cost, improve productivity, manage change, increase quality, achieve successful clinical outcomes and plan strategically in an increasingly competitive and volatile health care environment. Provides: (a) Retrospective and prospective (planning) view and (b) Merges clinical and financial information; integrates the care process; is results oriented.”

Oracle Hyperion Profitability and Cost Management (HPCM) software is a performance management application that is part of Oracle’s enterprise performance management (EPM) system, and provides actionable insights into costs and profitability. This solution drives business performance by discovering drivers of cost and profitability, empowering users with visibility and flexibility, and improving resource alignment.

In addition, offering a flexible allocations platform for any method including ABC, time estimation, etc, the application provides support for both complex, multi-step allocation cascades, and high-volume, highly detailed cost objects. Traceability maps and audit trail capabilities provide unique transparency and ease of use. Detailed profitability models support cost and revenue allocation to a very
The Perficient High-Performance Costing Expressway provides pre-packaged integrations to populate costing models and the data warehouse, Perficient best practices for applying cost pool methodology, and pre-built analytics, all of which are fundamental to create a partnership between finance and clinical operations to form a successful cost management environment.

The HPCM solution provides transparency to fully burdened margin at a detailed “micro-level” for:

- Line of Service or Program
- Patient
- DRG
- Procedure
- Encounter
- Provider
- Health plan and more.

The healthcare industry is moving from a volume-based economy focused on increasing outpatient visits and admissions in order to increase revenue to an outcomes-based population-wide economy focused on reduced complications and readmissions that will reward providers to keep their population healthy. Technology, systems and datasets will need to be positioned for flexibility and “what if” scenario analysis.

The Oracle Enterprise Health Analytics (EHA) platform enables enterprise-wide data warehouses and analytics capabilities that provide a comprehensive view of healthcare operations – patient visits, diagnoses, test results, prescriptions, referrals, and more. This view makes it possible to arrive at insights that can lead to improved patient care and outcomes.

The Perficient High-Performance Costing Expressway provides pre-packaged integrations to populate costing models and the data warehouse, Perficient best practices for applying cost pool methodology, and pre-built analytics, all of which are fundamental to create a partnership between finance and clinical operations to form a successful cost management environment.

Value of Micro-Costing for Healthcare

Micro-costing was introduced as the way to discretely measure and quantify true inputs to the cost of patient care. Healthcare costing has historically been isolated from true costs and has relied on averages of averages and “step-down” allocations that are often many layers.

The Value of Micro-costing for Healthcare

**Micro-costing focuses on encounter interactions**

- Marries developed pools and precise rates
- Applies them to charge by encounter level interaction data

### Determine Standard Cost Rates

- System General & Administrative
- Facility Shared Services
- Patient Treatment Departments

### Apply Rates to Transactions

- Cost to Serve
- Service/DRG

### Encounter/Change

- Millions of unique items
- 20+ Dimensions

**Profit Object:** One Row in Table
CEOs were proud to discuss how in their facilities, the chief financial officer makes regular rounds on the hospital floors to be on the front lines to hear and address patient questions and concerns. The mark of exceptional medical management is having the CMO and CNO available for staffing questions, feedback and observation. The CFO round drives the point home that financial measures are not in a vacuum from clinical events. To truly understand healthcare delivery, it must be absorbed in its environment, while it is happening.

Employing the HPCM solution will help hospitals achieve transparency of cost vs. expense and in turn true profitability. Costs such as an IV bag or a gallon of gasoline are components of larger costs, such as hospitalization or transportation costs. As such, they are called micro-costs. Understanding true cost is necessary to apply interventions and micro-costing is needed to determine true cost. Such detailed bottom-up collection of data on resource use may be necessary when changes are being made to existing services (adding an extra stage or test). Micro-costing focuses on encounter interactions and marries developed General Ledger pools and precise rates, then applies them to charge by encounter level interaction data at the atomic level (i.e. by patient, by charge code, by DRG) using sophisticated allocation logic. Micro-costing drives organizations towards operational performance analysis that is based on operational data, achieves financial transparency, and provides analysis that speaks the language of operations.

To stay competitive, healthcare organizations need to streamline inefficient processes and understand the types and the amount of resources they need to deliver care across the enterprise. This can only be achieved through cost transparency and micro-costing.

At the 4th Annual Patient Experience: Empathy and Innovation Summit there was a round table session for three major hospital system CEOs. While the focus of the conference was patient engagement, the discussion was interwoven with financial transparency and the need to fulfill Meaningful Use regulations. Merely checking the box and claiming to have a patient portal is not sufficient to truly engage patients and drive compliance and profitability to Accountable Care Organizations (ACO). All three CEOs were proud to discuss how in their facilities, the chief financial officer makes regular rounds on the hospital floors to be on the front lines to hear and address patient questions and concerns. The mark of exceptional medical management is having the CMO and CNO available for staffing questions, feedback and observation. The CFO round drives the point home that financial measures are not in a vacuum from clinical events. To truly understand healthcare delivery, it must be absorbed in its environment, while it is happening.

Employing the HPCM solution will help hospitals achieve transparency of cost vs. expense and in turn true profitability. Costs such as an IV bag or a gallon of gasoline are components of larger costs, such as hospitalization or transportation costs. As such, they are called micro-costs. Understanding true cost is necessary to apply interventions and micro-costing is needed to determine true cost. Such detailed bottom-up collection of data on resource use may be necessary when changes are being made to existing services (adding an extra stage or test). Micro-costing focuses on encounter interactions and marries developed General Ledger pools and precise rates, then applies them to charge by encounter level interaction data at the atomic level (i.e. by patient, by charge code, by DRG) using sophisticated allocation logic. Micro-costing drives organizations towards operational performance analysis that is based on operational data, achieves financial transparency, and provides analysis that speaks the language of operations.
Being a Successful Accountable Care Organization

With hundreds of commercial and Medicare Accountable Care Organizations formed, facilities, physician groups and community partners are aligning and collaborating. But being a part of the “business of ACO” is not the end game. Being a part of a successful ACO (both financially and population health-wise) should be the focus. Each ACO and the entities that make it up should, at a minimum, be:

- Provider-led and focused on primary care for the full population
- Transparent and able to track costs and outcomes to each discrete care event
- Actively learn and improve with greater sophistication both data intakes and predictive/analytical modeling results to guide financial risk and population health

The Accountable Care, Meaningful Use and value-based purchasing life cycle may have different drivers and involve different stakeholders within hospitals, payers, and physician practices, but it is key to note the mapping between the initiatives. Systems must be in place, then logic, guidelines and practices to fulfill the population-based health. No facility can just jump in with a patient-centered medical home to do population health unless they understand the staffing mix, cost structure, reimbursement/capitation, and then have processes in place to transparently identify compliance to the recognized guideline or deviation, on a per-patient, per-provider, and per-facility basis.

The law of large numbers and the days of managing to the “top line” number are gone. As GAAP, FASB and GASB drove financial activities 80 years ago to discrete and line item accountability and audit trails, so too will the trifecta of ACO, MU and VBP. The managed care movement of the 1980s, while not sustainable nationwide for all markets, did demonstrate that if the providers have discrete, trustworthy and verifiable data they could affect the reimbursement model. In the absence of good evidence, providers, practitioners and the ill-informed healthcare industry will be at the receiving end of federally dictated reimbursement. Proactive and actionable analysis driven at the micro-cost level can and will support defendable rates and equally sustainable business practices. The data will no doubt prove as much about the financial viability of a product line as it does reveal the inefficiencies of the delivery model on a disease specific and patient-specific case level.
What's Next?

In 2001, the Institute of Medicine (IOM) published “Crossing the Quality Chasm.” Since that time, the U.S. has seen three presidential elections, a handful of CMS Administrators, and major legislation changes. Today, we have a system that, like it or not, we need to use and maximize. Healthcare professionals, even those who don’t touch patients, have the duty to accumulate the right data and transform it for actionable decisions that improve patient care.

Berwick’s Triple Aim is simple: Access, Cost and Quality. If we were financial wizards for a lean, 6 Sigma manufacturer, we would not shirk at the thought of improving the channels for sales and access to clients, removing the inefficiencies from our processes and simultaneously reducing the defect rate and warranty expense. Healthcare should be no different. With major investments in EMRs, sophisticated enterprise data warehouses, agile business intelligence tools, and the architecture for regional and national exchanges, we are at the pinnacle of doing great things with the data available. We have the tools to reduce the signal to noise ratio and improve our ability to use “radar” or business intelligence to focus on what is actionable.