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# Rx for Healthcare Providers: Pervasive Costing at All Levels

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## Executive Overview

In the USA, the Patient Protection and Affordable Care Act (ACA) is driving hospitals and other health care organizations to provide better outcomes while driving costs down. Healthcare providers are being held accountable for cost and outcomes and therefore cost management has become an imperative for healthcare providers. The challenge of managing costs and improving outcomes involves mastering a methodology, understanding the healthcare process drivers, changing processes, and introducing a system that supports an efficient process. The impact of cost management ripples through to all management processes and is a key component of an overall enterprise performance management system.

The process of caring for many patients results in a wealth of information around clinical activities, financial management, staffing, supplies, room utilization, etc. That information, when brought together and effectively integrated, reveals operational outcomes. Were the right supplies present, was there enough staff, did the case complete on time?

If all the disparate operational information is brought together and put it through a process of aggregation and transformation, business logic is applied and analytic tools are used, the organizational outcomes of the care process can be determined. Do the individual patient outcomes add up to a population of healthy, satisfied patients whose bills are all paid without question by the third-party payors? Or does the process need refinement?

## The Urgent Need for Cost Management in Healthcare

As the world population grows, diseases and illnesses continue to mutate, and the economy continues to fluctuate, healthcare providers face the difficult job of providing excellent healthcare at a reasonable cost. Historically, US hospitals have been more focused on managing revenues rather than managing costs to ensure they are profitable. However due to healthcare reform, complex insurance reimbursement plans, costly technology updates, public perception and political perception, this has to change<sup>1</sup>. Hospitals, clinics and other accountable care organizations (ACOs) must continue to strive to deliver quality healthcare while sensibly reducing costs. This is a daunting task considering the ratio of fixed costs (real estate, equipment and staff) is very high when compared with their variable costs. ACOs must now collaborate with Payors to seek better reimbursement, reduce waste, improve efficiency, and adapt to a new business model of income and expense including better workforce and resource planning<sup>2</sup>

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<sup>1</sup> Is It Time for the Healthcare Industry to make Cost Management a Priority? David Hughes, Becker's Hospital Review, July 27, 2011

Why has the healthcare environment changed so dramatically?

- We now have more effective drugs providing better outcomes but the costs of those drugs are higher. ↑ Quality of Care ↑ Cost
- We now have more effective techniques that can save more lives but the training and equipment costs more. ↑ Quality of Care ↑ Cost
- Our population is aging; people live longer – which drives up the overall costs of the ACOs because they use healthcare services longer. Age-related illnesses are often more complicated to treat (e.g. multiple illnesses/co morbidities). ↑ Quality of Care ↑ Cost
- There are pressures to reduce costs by reducing the workforce and resources used ↓ Quality of Care

In the article *Cost-Outcomes Focus is Essential for ACO Success*<sup>3</sup>, by Harry Greenspun and William Bercik, the authors do a good job of outlining the main business issues in the Healthcare Provider System today. To summarize:

- Accountable Care Organization (ACO) payment contracts are often more complex, harder to administer, and less able to keep pace with rising costs than hospital payment contracts. Costs are rising, but payment contracts are not.
- ACOs need to truly understand the cost of care on a per-patient basis so they can negotiate realistic payment terms and stop-loss measures with their contracted payor groups.
- ACOs need to set a strategic and profitable course for the future. To do this, internal planning and analysis groups must have insight into the volume and cost of care across functional departments (e.g., radiology, lab services, and nursing) and clinical service lines (e.g., oncology, cardiac services, and neuroscience).
- The cost impact of rendering patient care is not included in most *clinical* software applications. To gain the true cost of patient treatment care delivery, billable and non-billable patient activities must be included. Financial decision-support costing systems can assign direct patient care (sometimes referred to as variable), direct overhead (or fixed), and indirect cost to the individual charge/service level and, ultimately, to the patient encounter, but non-billable patient activity (transport and back-office administrative) is often excluded. Unless an ACO can allocate all of these costs directly to treatments, it will likely never gain the true cost of patient treatment care delivery.

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<sup>3</sup> Cost –Outcomes Focus is Essential for ACO Success, Harry Greenspun, William Bercik, HFM Magazine, February 2013

Often ACOs resort to averaging patient care costs. Averaging costs is not a solution as it hides the considerable differences in the cost of operations or treatments—for example, between a quadruple heart bypass versus a tonsillectomy, or acute versus non-acute cases.

To truly understand and manage costs, all activities, whether chargeable or not, need to be included so that true variation in cost can be measured across individual patients. Patient acuity or procedure costing is a prime example of the potential in this area. “If a patient needs to be watched because he or she is at high risk of a fall, the patient will require a higher level of supervision than will a stable patient in the same unit. The cost implications of additional supervision can be specifically identified if the assignment of expense is based on the resource level providing the additional care, such as a patient care aide”<sup>4</sup>

## The Relevance of Cost Management Today

The interest in cost management in healthcare is re-emerging, and the topic is increasingly being elevated to the board’s agenda. Cost management is more relevant than ever. There are several important factors to understand with cost management.

### **Indirect Costs Rising**

Healthcare Providers are continuously challenged to determine their organizational effectiveness. Despite modern processes and systems, indirect costs are increasing. To reduce these costs many organizations are introducing shared service centers, centralizing certain operations. The economies of scale outweigh the overhead of such centralized operations, but the overhead and other types of indirect costs still need to be allocated. Cost management solutions help ensure the business relevance of shared service centers. Cost management solutions can also help establish whether these shared service centers should be placed within the organization or should perhaps be outsourced. In such an exercise, the burden of internal indirect costs can be compared and benchmarked against external services.

### **Horizontal Alignment**

Organizational reporting structures tend to be hierarchical in nature. New plans and strategies are cascaded top-down into the organization’s hierarchy. Conversely, most healthcare facilities or functional domains self-report to their management, and at the top all information about all costs come together. However, cost and value drivers seldom report upwards in a meaningful manner. Drivers tend to impact the organization sideways, through the organization’s value chain. Cost

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<sup>4</sup> Cost –Outcomes Focus is Essential for ACO Success, Harry Greenspun, William Bercik, HFM Magazine, February 2013

management solutions introduce horizontal alignment, which is a crucial extension to the vertical alignment most organizations have.

For example, a car accident victim may come in with a fractured arm and need it treated and set, but during the examination a cancerous mass is found. This patient will need treatment from several departments (emergency, labs, radiology, oncology etc.) before being released. Following the patient as they move horizontally through the system is imperative to understanding the true cost of a patient encounter.

### Transparency

The cliché that business experiences higher cost and regulatory pressures will come as no surprise in the Healthcare market. Patients, suppliers, shareholders, and regulators, all demand more transparency. Executives cannot allow surprises regarding their costs. They need to ensure that both cost and revenue are managed in alignment throughout the organization. A solid set of processes, a comprehensive methodology, and a robust system are needed to meet these requirements. In fact, if executives do not ensure such a level of control in a transparent and regulated world, it will cost them dearly.

## How is Cost Management Different Today?

Cost management traditionally has been an operational function because of the prevalence of enterprise resource planning (ERP) systems. These systems have a Chart of Accounts, ledger, sub-ledger, operating statements etc. This is a necessary structure to accurately reflect and record the financial activities of an organization. However, it has very little relevance to the services offered by any organization. As a result, the majority of cost management solutions used in general business practice were relegated to a series of reports which were pulled together from disparate sources. Organizations often spent more time in reconciling the variances in reports than in actually understanding the data on the reports. As a result, decision makers had very little faith in these profitability reports.

Cost management today is a strategic function. It has management attention and visibility. Today's cost management solutions are driving key performance metrics – the overall cost of the business and outcomes. Cost management is not only reported upon but it is used as a strategic tool to drive change throughout the organization. It involves mastering a methodology, understanding the business drivers, changing business processes, and introducing a system. The impact of cost management ripples through to all management processes. The following is an overview of the stages most organizations experience as they mature in their approach to cost management.



Figure 1: Cost Management Maturity Stages

**Stage 0: So What?**

At the macro or organizational level, total cost is simple and easy to aggregate, measure and evaluate. For organizations that have experienced unbridled growth, and perhaps have a straightforward set of services, this may be enough for a long time. However, when economic circumstances change or if the services offered grows, a better grip on the cost and contribution of processes, services, and patients is needed.

**Stage 1: Know What**

Cost in the micro environment of the organization, for example at the patient or service level, can easily become complex, difficult to measure, and often leads to multiple interpretations of the data. The first stage—the —Know What stage—in the costing maturity lifecycle of an organization begins with cost reporting. In this stage, the organization simply measures the cost via key performance indicators (KPIs) that drive the business. For example, if an organization wants to determine patient/service costs, cost reporting would focus on questions such as:

- What drives profitability by case, service line, etc.
- Which activities and processes produce value, enhance quality, and improve outcomes
- How contractual payor prices compare with costs
- How much capacity is being used
- Whether equipment investments are justified

Most organizations would be happy if they could accurately measure their costing KPIs. This reporting is often the trigger point in examining the cost data for accuracy. Thus begins a cycle of analysis to ensure the validity and accuracy of the data.

**Stage 2: Know How**

The second stage—the —Know How stage—begins with an understanding of the meaning behind the numbers in an organization’s KPIs, in other words cost analysis. Most businesses try to manage compensation, volume of patients, variable costs, and overhead to drive their financial performance. Compensation and patient volumes are often not debated. They are pretty straightforward. The variable costs and overhead, however, are not well understood. Why do some patients cost so much more than others to treat? Why is there a difference in the cost of like patients? Why does a particular patient consume more support resources than another? Comparing the variable costs against all patients in a class can help provide answers to the variances in cost of patients in a classification. These variances are not only the key to understanding and developing the core drivers of costing, but are necessary to developing a plan of action to improve costs.

**Stage 3: Now What?**

The third stage—the —Now What stage—begins by developing a plan of action for improving the costs of an organization’s underperforming assets, i.e. those patients and services that appear inflated or much higher than the average. Cost optimization and cost planning are introduced, after cost

reporting and cost analysis. The key drivers of costing (in the second stage) provide the baseline for the desired cost performance of the assets.

Improving costs requires more than just identifying the delta between the plan and the actual results. It requires creating and comparing multiple scenarios to achieve optimal performance. Once a scenario is selected, budgets and plans need to be updated to execute upon the selected scenario. Organizations in this stage often benchmark costs internally, asking questions such as: What is the cost today versus a time-period ago? How do costs with the new organizational structure compare to the old organization structure? Many organizations in this stage bring in external data to establish benchmarks in order to compare themselves to other comparable healthcare facilities.

#### **Stage 4: Know Why**

Organizations that have fully matured have built cost management into their core business processes. They not only know where costs are high and unreasonable, but also why they are such. Cost management is not an after-the-fact analysis, or a top-down plan. Instead, it is incorporated into every single business decision and action. Indirect functions know their impact and contribution of cost to the core processes. Operational managers have the information to assess the efficiency and effectiveness of their decisions. The planning process doesn't just focus on financial results, but rather dynamically incorporates resources and activities. Any change in these leads to updated plans. Organizations that have reached this level have extended their operational strategies to begin truly unlocking business potential.

## Where does Cost Management Fit in Healthcare Organizations?

Cost management is integral to many areas of a healthcare provider's operations. Visibility is important to assist in making strategic decisions for:

- Executive Management
- Budget Managers
- Operational Managers
- Decision Support Team
- Physician Practices
- Service Line Managers

## Choosing the Right Cost Accounting Solution for the Job

The journey of cost management begins with creating a cost model that can allocate costs in a variety of ways. A flexible allocation engine that can be easily used by the business users is, therefore, a must. A flexible allocation engine provides the basis for more granular allocations, leading to more accurate cost data. In most organizations, allocations are a rather arbitrary process.

While the granularity of allocations is the precursor for accuracy, the confidence in the accuracy of the allocations can still be suspect. Therefore, being able to visually trace the path that an allocation takes can quickly turn doubt into confidence, thus empowering users to make effective decisions.

While allocations are necessary for accuracy, analyzing cost data to discover the key drivers of cost is at the heart of a cost management solution. Therefore, having a robust analytic foundation is also a necessity. The analytic foundation needs to provide an intuitive user interface for —speed of thought analysis. Business users must be able to manipulate large costing data sets to monitor complex scenarios, forecast outcomes, and perform what-if analysis to identify patient/service cost trends.

Cost management solutions have traditionally focused on reporting and analyzing costing—generally as an accounting, analysis or operational process. The users could report and analyze the data but there was no integrated or systemic process to execute the decisions stemming from the analysis. With costing as part of performance management, costing is not merely reported—it is planned, measured, and interpreted.

Cost management solutions today must provide a systemic process to execute upon and implement best practices discovered as a result of cost analysis. There must be a closed-loop system between the cost management system and the budgeting and planning system so that resources can be strategically allocated as a result of the cost data. Planning ensures that efforts are directed toward the achievement of hospital or care facility objectives. Measurement checks and adjusts progress against plans by matching reimbursement against costs incurred, making adjustments by tweaking processes to align with cost metrics. Interpretation of cost data helps identify developing trends that alert management to ask the right questions and take action.

## Oracle's Cost Management Solution<sup>5</sup>

Oracle Hyperion Profitability and Cost Management (HPCM) is a performance management application that is part of Oracle's enterprise performance management (EPM) system and provides actionable insights into both 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. HPCM provides the ability to accurately allocate revenues and costs with detailed documentation and audit trails. Built around a flexible allocation engine, HPCM's powerful analytic foundation helps organizations understand which Service Lines, procedures and treatments they are most effective at providing, which of them they need to target for improvement, and how to strategically allocate resources. The following features differentiate HPCM from other solutions on the market.

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<sup>5</sup> Profitability and Cost Management in Healthcare, John O'Rourke, Oracle Corporation Whitepaper, March 2011

### Business User Driven Cost Modeling

With an open, flexible, and easy-to-visualize modeling environment, business users can follow a suggested path—or create their own process—to create, maintain, and deploy their cost models. This offers a huge advantage over traditional —black box cost solutions, which required specialist analysts and intensive use of IT resources to develop models.

### Flexible Allocation Platform

Accurately measuring and allocating all costs (overhead and direct) and reimbursements are the key to understanding actual costs and financial position. HPCM’s allocation engine supports your modeling approach whether it uses cascading allocations, custom calculations, ABC, time estimation, or industry-specific adjustments. Multiple allocation methodologies can be combined to form your own custom allocation methodology.

### Business Rules Engine

The business rules engine in HPCM enables personnel from each hospital or care facility department to drive application design and rapid iterations. Its intuitive interface makes it easy to build dimensions, hierarchies, metrics, and scenarios.

### Traceability Maps

Traceability maps—graphical depictions of allocations—provide a new level of transparency into cost allocations through multiple steps. Using traceability maps, users can verify that business rules have correctly applied the allocations. Traceability maps can serve as documentation so that independent reviewers are able to comprehend and, if desired, duplicate the allocation algorithm to validate the profitability model.

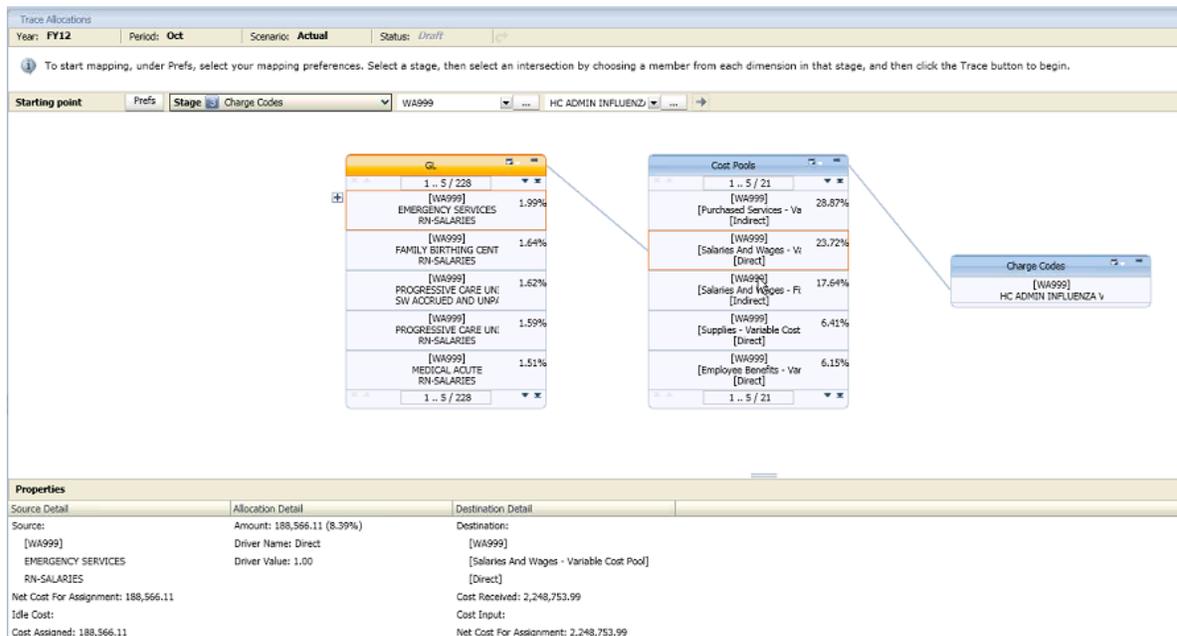


Figure 2: Oracle Hyperion Profitability and Cost Management Traceability Map

## **Reporting**

HPCM provides users with stage-by-stage cost (and reimbursement) assignment validation reports for testing the completeness of their cost models and reduces the time required for troubleshooting. In addition to the allocation calculations, HPCM includes a process to create genealogy data. The genealogy data creation process calculates the allocation detail for source and destination intersections that do not have a direct assignment but instead have an indirect relationship. These calculation processes, together with the embedded traceability maps and validation reports, support complex analysis and reporting of causes and effects within the model.

## **Hierarchy and Dimension Management**

The dimension and hierarchy management capabilities synchronize metadata across Hyperion Performance Management applications. Users can graphically design their cost application using existing artifacts from the common performance management library in the EPM Architect module of Hyperion Performance Management applications. Dimensions and attributes defined for one model can be used in multiple models.

## **Multidimensional Calculations**

HPCM is the only packaged cost application that leverages Oracle Essbase for faster, easier, powerful multidimensional analysis. One point of maintenance makes it easy for an administrator to manage business rules.

## **Powerful Analysis and Reporting**

The data generated by HPCM delivers powerful insights for decision-making. Business users can visualize multi-dimensional information in a highly intuitive manner through user-directed query and analytic capabilities.

## **Detailed Costing to the Patient Encounter**

The healthcare provider space is rapidly transitioning away from the traditional Fee for Service approach. Here the business runs on a volume of services performed plus a markup basis. While this encourages activity, a detailed analysis of profitability and quality/outcomes at a patient or encounter level is rarely focused on. It has not been necessary to address in the past.

As the new accountable care approach takes hold at the leading edge hospital providers (and their payors, regulators and broader stake holders), this drives the need for insight into both the costs of regions, departments, specialties, processes and services, and critically, the ability to allocate these costs to detailed patient encounter data.

With this new cost management solution approach, providers can gain an understanding of their current baseline situation, and compare and contrast across their own organization, say hospital to hospital or department to department, as well as across healthcare peers. The current level of

profitability can be objectively discussed and reviewed, and decisions made can be backed by broad support across functions and teams internally, as well as finally enabling effective dialogue with external stakeholders, particularly revenue sources.

## HPCM Case Studies

### Case Study: King Faisal Specialty Hospital & Research Center (KFSH&RC) <sup>6</sup>

King Faisal Specialty Hospital & Research Center (KFSH&RC) is ranked amongst top 50 hospitals in the world; ranked 28<sup>th</sup> in the world, and 1<sup>st</sup> in Kingdom of Saudi Arabia.

Commissioned in 1975 as an International Referral Center for the Kingdom of Saudi Arabia, King Faisal has three facilities (Riyadh & Jeddah, Saudi Arabia) with 1,200 beds & 12,000 employees. The hospital is the national referral center for oncology, organ transplantations, cardiac surgery, genetic diseases, and more.

King Faisal is also identified as Region's first Healthcare Information and Management Systems (HIMSS) Stage 6 Analytics Hospital with over 220 million chargeable services each year.

- Improving Costs by monitoring total life--cycle cost and performance by specialty, department, patient and by clinician
- Improving the effectiveness of budgeting by identifying the cost/performance relationship of different service levels
- To provide insight into the fastest-growing and least visible element of cost-overhead
- Linking corporate strategy to operational decision making
- Encouraging continuous improvement and total quality control because planning and control are directed at process level
- Facilitating elimination of waste by providing visibility of non-value added activities
- Improving make/buy, estimating, and pricing decisions that are based on product cost that mirrors the process
- Profitability analysis by Service Lines

Previously, King Faisal used an Excel model with local activity codes hard coded to Current Procedural Terminology (CPT) codes. This made it impossible to maintain and deliver a point in time view of

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<sup>6</sup> Success Story of HPCM Implementation @ KFSH, EVOSYS Technologies, Presentation, October 23<sup>rd</sup>, 2012

costs. This procedure was not dynamic or integrated with other systems to allow updates as new procedures and cost centers were created.

Using Oracle's Hyperion Profitability and Cost Management solution and EVOSYS Technologies as an implementation partner, King Faisal was able to:

- Upload financial data quarterly for cost allocation and analysis
- Automatically calculate the cost per Charge Description Master (CDM) service item on a periodic basis
- Make pricing decisions based on the actual cost of services
- Compare their own costs per CDM service with other healthcare organizations
- Analyze profitability and costs by CDM and based on the analysis, take actions to remedy non-profitable or high cost CDM service items
- Identify and trace sources of cost (cost centers) of each CDM service item
- Perform adhoc cost analysis as and when required.

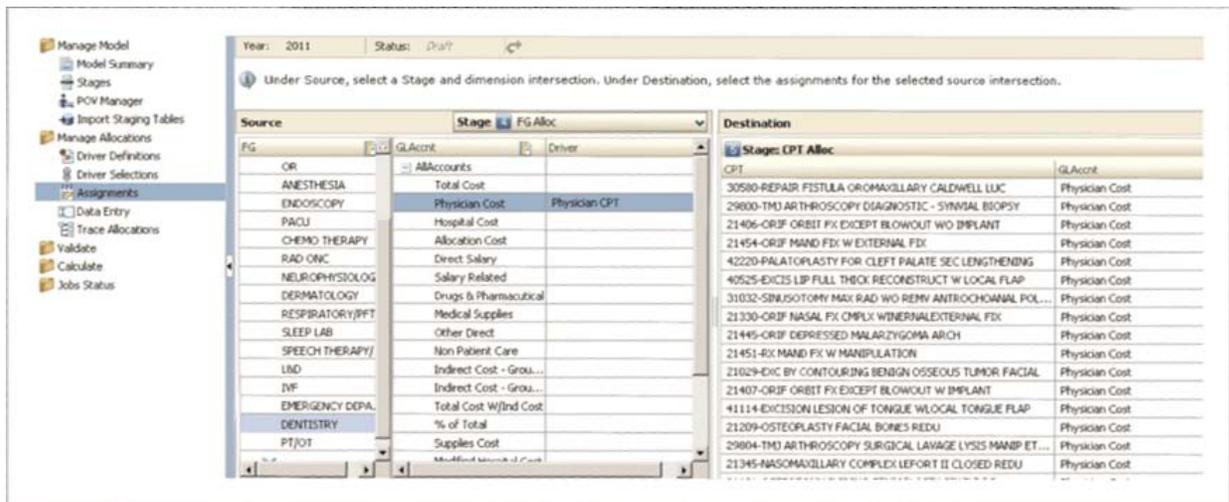


Figure 3: King Faisal Allocation Stages

## Case Study: Large Medical Center<sup>7</sup>

Best University Medical Center (BUMC)<sup>8</sup> is a large forward thinking medical center comprised of a network of 20 hospitals, international specialty hospitals, and an insurance division with over \$10 billion in revenue. Embracing healthcare reform, their costing objectives were to:

- Determine costing and activities at the patient level
- Adopt a standardized methodology
- Implement a single cost accounting system across all providers
- Reconcile to the general ledger
- Measure cost across the continuum of care

Using the Oracle Hyperion Profitability and Cost Management solution with MarketSphere Consulting as their implementation partner, BUMC developed a phased approach beginning with BUMC Main Hospital. In phase one, they were able to:

- Develop individual patient Costs for BUMC Main Hospital
- Aggregate individual patient cost by defined parameters (to include, but not limited to: physicians, DRG, procedure, diagnosis, and service line) so as to support further payor-provider initiatives
- Support standardized hospital costing
- Adopt the tool to be used for further expansion to other BUMC providers in phase two

BUMC included all actions from Administration, all care activities as shown in figure 4, and all discharge activities.

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<sup>7</sup> Implementing a Cost Accounting System from a Patient Perspective, MarketSphere, Presentation, January 3, 2013.

<sup>8</sup> Best University Medical Center is a pseudonym. Actual name withheld.

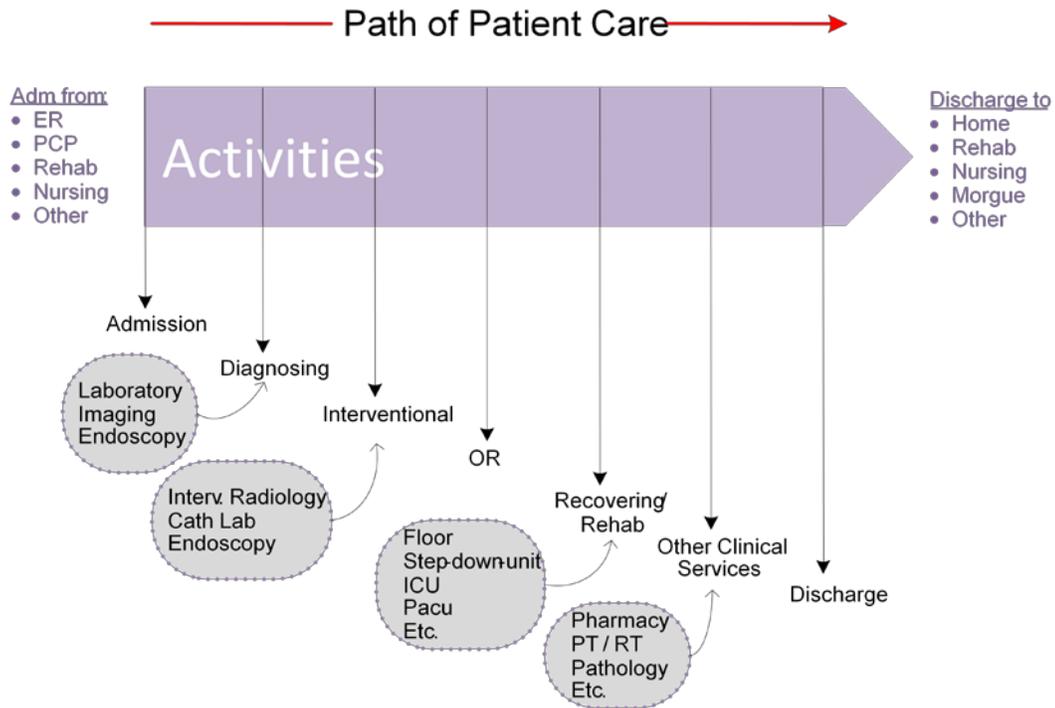


Figure 4: BUMC Activities Included in Patient Care Costing

### HPCM Integration with Other Hyperion Performance Management Applications

Oracle Hyperion Performance Management applications are an integrated suite of performance management applications that provide common security, user workspace, and metadata management that enables a single point of maintenance. This means a reduced cost of administration and ownership over non-integrated point solutions. Integrated within the EPM processes, Oracle Hyperion Profitability and Cost Management enables faster, better decision making and allows organizations to allocate resources more strategically.



Figure 5: Oracle's Enterprise Performance Management System

This integrated suite of applications supports a broad range of strategic and financial performance management processes and can help answer critical questions such as:

#### Strategy Development

- In what service lines or procedures do I make money? Lose money? Why?
- How do my hospitals services compare across the health system?
- How can I optimize service location? Should I consolidate services?

#### Capital Allocation

- In what services should I invest capital? What financial return can I expect?
- What incremental ancillary capacity will be affected by additional capital purchases?

#### Revenue Cycle Management

- What impact to my bottom line will a rate change create? Can I afford to sign this managed care contract?
- What types, how much and where are my denials originating?
- Are my payors paying correctly? Timely?
- Can I compare my payors profitability and score them?
- Am I charging for all the services I am performing?

#### Operations Improvement

- What is my profitability across service lines by hospital?

- Where should I focus my cost reduction initiatives? How do I track success?
- Why are costs for service 'x' increasing? Is it labor, supplies or physician practices? How can we decrease these costs?
- Are patient care processes following protocols? Why not? Is it physician or patient complexity driven?

Our comprehensive decision support analytics solution tightly integrates cost accounting, contract modeling, patient analytics and performance management through budgeting, flexible variance reporting and productivity management to support data driven decision making and advanced decision tools for forecasting and planning.

## Conclusion

### **HPCM Supports the Needs of Healthcare Providers**

Oracle Hyperion Profitability and Cost Management supports the core requirements of the Healthcare Provider industry and gives value for a broad range of use cases. For core cost management, HPCM helps managers gain visibility and understanding of the cost to provide healthcare services to different healthcare service lines, whether inpatient or outpatient and based on acuity. Based on this new insight, managers can improve programs altering service delivery methods and technology changes. In addition, HPCM helps Finance and Operating Staff provide more complete documentation and audit trails for regulatory reporting and to visually justify Medical Loss Ratio results.

HPCM can support a number of different stakeholders and user groups. This includes Financial Executives who need to understand what drives costs; which processes are truly adding value to the service lines; and how to strategically allocate resources. HPCM can also be used by Service Line Managers, Operations Managers, and Administrative Managers to better understand causal business relationships and make better decisions about where budget would be most effectively spent and where to emphasize process improvements (through training, equipment or procedural changes) .

And finally, HPCM can benefit Information Technology Executives by providing a self-service environment where business-users control and manage costing and profitability models. This will free up IT resources allowing them to focus on supporting other critical business functions and initiatives.



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at All Levels

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**Hardware and Software, Engineered to Work Together**