

**Customer Intelligence Report:**  
*Executive Summary & TOC*

# **Business Intelligence in the Healthcare Industry**

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**Assessment of Technologies, Solutions & Services**



*Accelerating Performance by Calculating Results™*

## Executive Summary

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The health care industry has never been as technically advanced nor as financially troubled as it is today. The diagnosis and treatment options available to patients are the most sophisticated in the world. New therapies and life saving pharmaceuticals are coming onto the market every year. But partly because of this advancement, health care costs now consume nearly 16 percent of the U.S. GDP, and hospitals and other healthcare providers suffer the constant financial strain of providing treatments that are often not paid for or paid for only in part. In fact, one-third of the nation's 5,000 hospitals are operating at a loss while another third are just breaking even--Symptomatic of a very ill industry.

The insurance industry likewise has its troubles, albeit not as dire. Payers must grapple with how to fairly compensate providers for high-cost treatments, while weeding out those claims that are inflated or are outright fraudulent. Nearly a quarter of insurance claims are fraudulent, by one estimate<sup>1</sup>, while another<sup>2</sup> puts it at seven percent. Yet insurance companies as a group do not have a consistent policy for dealing with suspected fraud and many insurers bother to prosecute only the most egregious cases.

Business intelligence could help address these serious problems that undermine the financial health of both the provider and payer sides of the healthcare industry—and most large healthcare organizations already recognize this. Major companies, both on the provider [hospitals/clinics/physician] and the payer [insurance] side, have been adopting business intelligence platforms, tools and/or using information management services for several years, starting with data warehouse projects. One of the largest examples of this is Blue Cross Blue Shield Association's Blue Health Intelligence database, started in 2006. Comprised of 80 million "de-identified"<sup>3</sup> or blinded patient histories, this data mart will eventually be used to analyze critical clinical practices and their outcomes, costs vs. success, and other healthcare trends that BCBS intends to use to create benchmarks for clinical practices.

In virtually all large healthcare organization today there is one or more data warehouse project either completed or underway. In some instances, the problem is there are multiple data warehouses and these need to be integrated or consolidated for BI purposes. .

Mid-sized and small healthcare organizations are less likely to have large data warehouses, but may have other types of data consolidation and the implementation of simple BI tools for financial planning and reporting.

All of these data warehouses, data marts and databases in healthcare organizations contain a vast store of clinical, operational and insurance data, including patient histories, supply inventories, vendor invoices, admissions data and unstructured information such as patient verbatims, radiology images and scanned documents.

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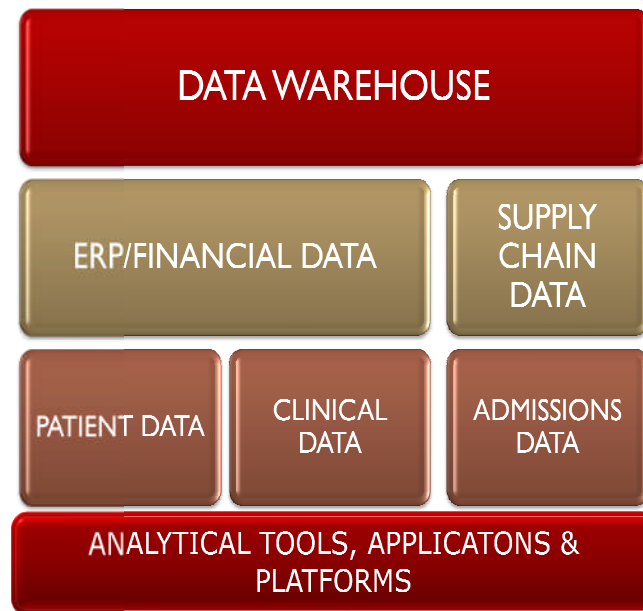
<sup>1</sup> "The State of Claims Fraud Detection and Prevention" ©2008 CMP Media

<sup>2</sup> U.S. Government Accountability Office and National Health Care Anti-Fraud Association

<sup>3</sup> Compliant with HIPPA regulations: see Chapter one

But for many healthcare provider and payer organizations, this store of data has not been transformed into useful information. It has not produced answers to questions about costs, revenues, trends, treatment outcomes, or correlations that would enhance profitability or quality of patient care.

**Figure 1: Standard Architecture: Hospital Information Systems**



Source: ©2009 Hypatia Research, LLC

## **BI Diagnostics for Healthcare's Pain**

There are basically three broad categories of data that any healthcare organization is interested in: financial, clinical, and operational. Within those broad categories, however, the types of information that both healthcare providers and payers want to analyze is quite varied, including reports on claims data, patient care, patient histories, treatments and outcomes, hospital supply chain costs, vendor invoices, admissions data, uncollected debt, etc.

BI vendors sell software aimed at analyzing these categories of data and presenting that analysis in a variety of reporting formats such as dashboards to enable healthcare professionals to make better decisions.

Major pain points that the healthcare industry seeks to address via analytical applications and information management solutions are:

- ✓ Reduction in administrative costs
- ✓ Discovery of new revenue opportunities
- ✓ Supply cost optimization
- ✓ Fraud identification
- ✓ Detection of cost effective treatments vs. inefficient ones
- ✓ Disease management targeting early prevention vs. expensive late-stage therapies

## Challenges & Barriers to BI Adoption

Budget is one major obstacle to BI adoption in the healthcare enterprise. As with any IT project, the upfront costs, which may be \$2 or \$3 million, as well as the ongoing cost of maintaining the data, creating new reporting templates or business rules, and migrating or consolidating data from one system to another can be daunting. This is particularly so given the decline in the economy and dwindling funds for new IT projects lacking a detailed returned on investment.

The main barriers to BI adoption today are:

- ✓ Lack of resources. With the economy on the rocks, more companies are putting the brakes on large IT projects. The market for BI products will continue to grow in 2009, but more slowly.
- ✓ Complexity of IT systems. Healthcare organizations have many very different types of specialties within them, each with its own IT system – Radiology, Admissions, General Ledger, Scheduling, Pharmacy, Patient Records, etc.
- ✓ Future uncertainties. The unstable economy, changing regulations and policies, the anticipation of more mergers and acquisitions . . . all create uncertainty as to what a particular company will be like a year or two in the future, and whether a long-term IT investment will have long-term value.

**Table A: Select List of BI Solutions & Services Purchasers & Providers**

Healthcare Organization	Vendor(s)
AGFA Healthcare	Accenture
Blue Cross, Blue Shield of North Carolina, Minnesota & Louisiana	Aptiva Technology Partners / Highpoint Solutions
International Federation of Red Cross & Crescent	Business Objects, an SAP company
Aetna, Blue Cross, Blue Shield Premara, MetLife Insurance, & Boston Medical Center	Cognizant
Centers for Disease Control	CSC / SPSS
St. Joseph Medical Center & St. Joseph's Hospital	DataWatch
Health Net, Inc	Deloitte
New York University Hospitals & St. Josephs Hospital NYC	Eclypsis
Blue Cross, Blue Shield of California & Massachusetts, Humana, Veterans Health Administration	EDS, an HP company
St. Luke's Medical Clinic, Houston Infectious Diseases Associated	Global Healthcare Alliance
Blue Cross Blue Shield of Tenn.	IBM / Cognos
John Hopkins Health System	Microsoft (Amalga)
Consortium Health Plans, St. Elizabeth Health Care, CVS Caremark, AstraZeneca Centers for Medicare/Medicaid Services	Microstrategy
Columbus Children's Hospital	Oracle

Sinai Health Systems, NY	Perot Systems
Blue Cross Blue Shield of Florida	SAS
St. Vincent Health Systems	Siemens IT Solutions
Centers for Disease Control	SPSS / CSC
Harvard Pilgrim Healthcare & Hospital Corp. of America	Teradata / Claraview
Harvard Medical School, St. Jude Children's Research, CIBA, & Mutual of Omaha	Tableau Software
CIGNA, Pharmacare/CVS	Zenger Analytics Services

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### **Our Assessment:**

BI projects that can show tangible monetary benefits are the most likely to be funded. That means projects targeted at:

- ✓ Cutting administrative costs
- ✓ Increasing reimbursement rates
- ✓ Reducing payments for fraudulent claims
- ✓ Improving efficiencies in procurement

In short, any project that can collect the "low hanging fruit" and produce tangible returns can lay claim to being an essential investment. These types of BI investments will receive support even during recessionary times

### **About the Authors:**

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*Hypatia of Alexandria* (c.370-415 AD), invented several scientific devices--the astrolabe, plane sphere, and hydroscope (hydrometer). These instruments were used to calculate the distance between planets, the position of visible stars at any time of the year, and the gravity of liquids respectively. Hypatia was the first woman to make substantial contributions to the development of mathematics, astronomy & philosophy.

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