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Leveraging Business Intelligence for Healthcare Providers

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Introduction

Driving **Information Technology (IT)** in the healthcare setting has been a priority for many large healthcare organizations, partly due to IT's capability as a powerful transformational tool for not only monitoring patient safety and satisfaction in the care delivery settings, but also in helping organizations rapidly achieve **Operational Efficiency**. For a number of organizations, IT investments have been primarily focused on infrastructure development such as implementing transactional systems, either for back office operations including finance and billing, or on direct patient care in areas where unit automation can drive change such as **Laboratory Information Management Systems** or **Electronic Medical Records Systems**.

Both back office and **Point of Care Information Systems** have suffered, in terms of capability, for decades with fundamental issues related to user friendliness, with problems ranging from the point of transaction capture to final presentation. Many of these systems are complex and disparate causing difficult integration with the larger enterprise or beyond the departmental unit focus.

True **Information systems** leadership must commit extensive resources to effectively coordinate the different data sources as well as address the timing of the data transfer between the sources. These incremental investments in integration are starting to bear fruit, but are still very difficult for organizations to have visibility into information across the entire organization.

Oracle Business Intelligence Solutions bring new and innovative approaches to creating business insight, improving the delivery of care, and maximizing **Operational Efficiency**. By providing a common enterprise platform and packaged **Business Intelligence** applications, **Oracle Business Intelligence Solutions** enable organizations to address both operational and strategic information needs.

Healthcare Industry Challenges

The current economic crisis is having a severe impact on many healthcare providers. The collapse of the capital markets has made it difficult for providers to finance facility requirements and technology needs included in established improvement plans. The financial market's decline has reduced available investment income funds that offset declining reimbursements and falling philanthropic donations. In addition, the rising unemployment associated with the downturn has lowered admissions and elective procedures and increased uncompensated care. At the same time, costs continue to rise for qualified personnel in nearly every role within a healthcare provider's organization, and in addition, the cost of supplies essential to the delivery of care have escalated. Add to these financial pressures, economic uncertainty associated with new pay-for-performance and performance based reimbursement models and you begin to understand the complexity of understanding and moving toward successful financial performance.

For strategic provider organizations, the current financial and operational pressures haven't deferred the necessity to implement and monitor continuous improvements in **Patient Safety** and the **Quality of Care** delivered. These organizations now must compete on the Quality of Care they provide. In order to compete successfully, provider organizations must continuously measure their behavior and actions and use this information to refine workflows and improve core processes. This requirement extends beyond the existing significant, mandatory and voluntary self-reporting completed by providers.

Simply having more information available will not resolve this dilemma. However, it can bring new insights that transform the decision-making process within the provider community. **Business Analytics** can create timely, accurate, and integrated knowledge that transforms healthcare with important outcomes including higher quality services, patient satisfaction, operational efficiency and financial and operational performance. **Business Analytics** enable healthcare leaders to make timely, informed decisions to navigate the challenging economic environment while providing the best care possible to their patient communities.

Historical Provider Solutions

In response to the need for reliable information and the increasing requirements for mandatory and voluntary self-reporting, many providers have implemented **Enterprise Resource Planning Solutions, (ERPS)**. These systems helped to bring consistency to distributed corporate information, not only lowering integration costs and meeting financial and regulatory reporting requirements, but also creating a sense of continuity across provider organizations. This is primarily due to the fact that, as an integrated solution, the ERP systems provide detailed transactional and summarized information to the management team, with full capability of delivering point in time and historical reporting.

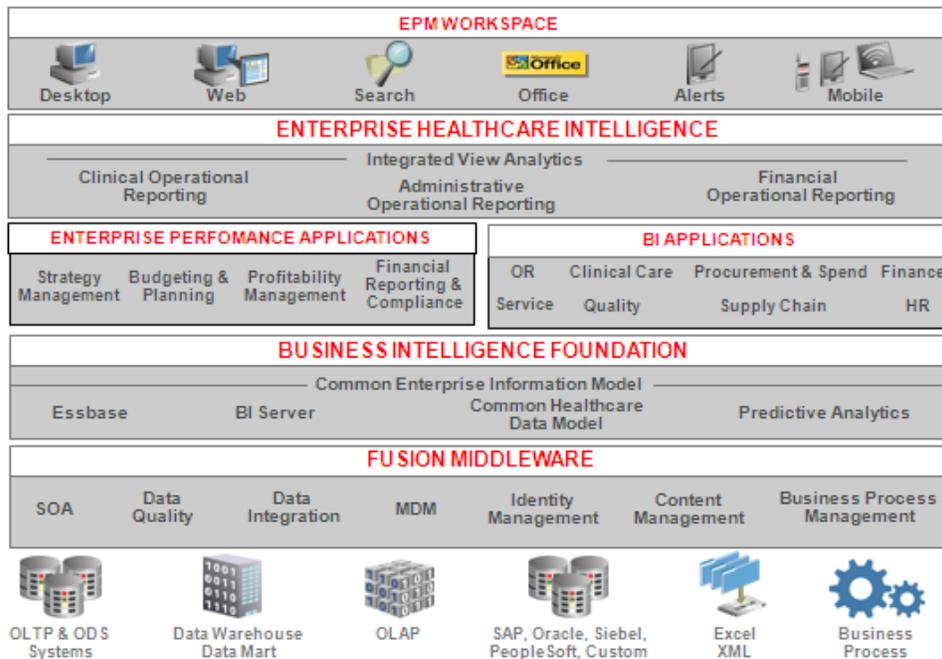
In addition to ERP systems, many provider organizations implemented **Clinical Information Technology Systems**. These **Clinical IT Systems** have been an important part of the provider organization Toolkit, allowing them to focus on **Delivery of Care**. These systems included reporting tools designed to provide limited analysis and forecasting capabilities, but were used primarily as evidentiary protection in case of legal proceeding, and in support of associated billing and reimbursement processes. Ancillary to these top tier objectives was the use for several second tier purposes including administrative decision-making, accreditation and regulatory reporting, and strategic planning.

Regardless of the application, these solutions remained focused on capture and documentation of events associated with patients. This is noteworthy since very few healthcare providers have been able to easily bring such diverse data sources together. In most cases, the process of analyzing the data is manual and unrelated to the organizational tools in place to monitor the key performance metrics on a timely basis.

Nowadays, many Healthcare providers have become data rich and information poor. To address these historical challenges Oracle has developed a comprehensive approach to **Operational and Clinical Analytics**. Oracle offers an integrated **Healthcare Business Intelligence** solution that consolidates administrative, operational and clinical information in a way that enables a comprehensive analysis, measurement, planning and simulation across all data sets.

Elements of **Business Intelligence**

Oracle **Business Intelligence** components that help healthcare organizations to effectively manage their diverse information sources leverage a common architecture. This architecture for clinical and operational insight involves one set of technology tools and services that easily converts data into a rich source of clinical and business insight.



With the introduction of Oracle **Business Intelligence Solutions**, providers realize the ability to integrate their disparate systems, create consistency within their data models and consolidation of key performance indicators. Providers are able to identify and view conflicts within their business processes as well as adapt to industry best practices. As they respond to greater demands for transparency from their patients, medical community, and oversight agencies, they begin leveraging an architecture that securely presents reliable and timely information and metrics.

Value of Business Intelligence

Performance Analytics offer Healthcare Providers key performance information that can be used to manage their organizations through trend and streamlined reporting. In many instances, this performance information can guide executives to new markets and sources of revenue. In addition, workforce management patterns and other cost analyses can be implemented to reduce high costs.

Oracle's Business Intelligence Suite is the leading software Healthcare executives choose to conduct budgeting and forecasting activities, best known for integrating budget data with other multiple data sources impacting budgets and forecasts. The marriage of budgeting and planning data with operational forecasts brings new insight to operations decision-makers and helps to define appropriate actions they might not have considered, particularly in critical patient areas including quality and safety.

The presence of evidence-based **Performance Analytics** can serve to monitor patient safety and outcomes, in addition to patient access to services and patient satisfaction. As the provider community begins to explore the advantages of offering provider retail services, they can assess incremental changes in patient satisfaction with the end goal of bringing a comprehensive analytical assessment into view, including a portfolio of marketing activities that define patient segmentation. Healthcare providers will begin to tailor their campaigns and communications to create and track their brand awareness and performance against marketing goals.

The **Oracle Business Intelligence** applications are pre-built **operational metrics** and **roles-based dashboards** to providers. These applications leverage the **Business Analytics Warehouse (BAW)** to provide a consistent foundation for the extracting and loading of data into the warehouse. With the pre-built presentation layer, providers can lower the implementation time and support costs for deploying the **Oracle Business Intelligence Suite**. The **Oracle Answers** Solution extends the reach of business analytics and ensures the appropriate information is accessible to every member of organization, not just the executive suite.

Bringing Insight to Patient Care

As care Providers find the demands on their time ever increasing, they must continually seek ways to work for efficiency, overseeing many complex patient cases, without compromising care. By providing **Disease Management Analytics Tools**, Providers can access accurate and timely information on process and outcomes measures and outcomes measures that are disease specific and are helpful in

supporting clinical decisions. This information can also be helpful to patients in managing their health.

Beyond timely information, Physicians need insights into their patient care assessments and ways in which they can further enhance the impact and effectiveness of quality improvement programs. Providing comprehensive insight to Patient Care has been historically challenging primarily due to the lack of semantic integration between clinical systems.

Oracle's Business Intelligence is leveraged on a robust data management infrastructure to aggregate and normalize clinical terminologies. The resulting analytics delivers real-time insights to clinicians regarding their skill level and performance in addition to detailed information about the outcomes of their patients.

Marriage of Operational and Clinical Intelligence

The Healthcare organizations recognized by their peers as being the most effective are those that provide the best quality of care at an effective cost. This delicate balance requires careful application of resources to areas of potential risk to patients while providing the organization with a comprehensive view of the business requirements of Healthcare delivery.

One example is in the Operating Room of an Acute Care Provider, where optimal resource utilization, including labor and supply costs, along with careful management of reimbursement revenues can enable small positive adjustments in block schedule management that have significant impact to the unit revenue. **Oracle's Business Intelligence** solutions provide a reliable common platform for **clinical and operational analytics**. The presence of common definitions, Key Performance Indicators (KPIs) and integrative tools across the organization help executives make informed strategic decisions and communicate more effectively with departmental lines of business.

Conclusion

The widening use of business intelligence, including **Oracle Business Intelligence** solutions can enable greater performance. **Business intelligence** Solutions integrating clinical and operational performance can empower Healthcare Providers and their organizational executives to make informed, timely decisions based on accurate, information that can not only impact patient care but the financial viability of their units and organizations.



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