

## Surgical Analytics Business Intelligence (BI) Data Mart

Unlocking the Value of Clinical, Operational and Financial Data

### Can you answer these critical surgical service line questions?

- **Clinical:** Where (locations, care settings, teams, service lines) are we achieving our quality and safety goals across surgical services?
- **Operational:** Are our resources (labor, equipment, materials, facilities) deployed optimally to satisfy the patient and procedure mix?
- **Financial:** How profitable are we in our surgical care settings across the enterprise?
- **Anticipatory:** What can we do to intervene and change the outcomes?

Although many healthcare organizations expend significant time and effort to collect and store diverse clinical, operational and financial data, key information remains inaccessible and critical deficiencies persist.

### The Challenge:

- Critical data needed for decisions is scattered across multiple systems and buried within separate, individual transactional and database systems
- Inconsistent data sources and disparate implementations of application systems across facilities or settings impede visibility into actionable performance metrics
- Answers to critical questions on patient outcomes, resource efficiency, costs of care are lost in the manual effort and time needed to assemble the key data

### Business Intelligence Discipline Applied to Mission-Critical Data:

- Isolate performance issues, focusing corrective actions for maximum leverage
- Standardize BI analytics and reporting across service lines and care settings
- Enable multi-dimensional navigation of surgical case records, to understand and reduce the range of variability in care, costs and outcomes
- Establish a global data model, integrating primary data entities from heterogeneous sources and standardizing definitions for data consumers
- Enabling an enterprise view can contribute real cost savings, enhanced revenue opportunities and better management of scarce resources
- Institute proactive data governance; leverage the value of enterprise data assets

### Benefits:

- Critical insight into labor and material costs and their impact on service line profitability; clarify focus areas for corrective actions and/or best practices
- Better understanding of service line, facility, care setting and surgical team performance, on quality, cost, and schedule integrity goals and metrics
- Improved visibility and control over practice patterns, schedule adherence, supply contracts and team deployment; find opportunities for greater efficiency
- Improve cycle time, reduce the effort at assembling, generating, and disseminating reports and analytics
- Realizing \$5M - \$8M (3 times ROI) in first 12 months



### Healthcare Issues:

- Reducing and controlling total costs of care across diverse care settings
- Ensuring quality, safety, access and compliance
- Integrating large, diverse sources of internal and external data
- Patient and physician satisfaction

### Looking Ahead:

- Electronic Health Records
- CPOE and E-Prescriptions
- Pay for Performance Programs
- ICD-10 Code Set Implementation
- Industry Regulations (HIPAA, SOX, SAS-70)
- Regional Health Information Organizations
- 837 EDI Claims – v5010 Implementation
- Radio Frequency Identification (RFID)
- Consumer Self-Service
- Consumer Directed Health Plans

OBJECTIVE	SOLUTION COMPONENTS	BENEFITS
<b>Understand Service Line Profitability</b>	Create Bills of: <ul style="list-style-type: none"> <li>• Materials (supplies, implants, trays/packs)</li> <li>• Labor (MDs, RNs, Techs)</li> <li>• Equipment (C-Arm, da Vinci, Laser)</li> <li>• Facility (room, water, electricity, oxygen, heating)</li> </ul>	Compute the total cost of surgery for all resources utilized, and navigate comparative data on: <ul style="list-style-type: none"> <li>• Facilities, Care Settings, Departments</li> <li>• Surgeons, Teams</li> <li>• Procedures, Cases</li> <li>• Suppliers of Implants, Medical Devices</li> </ul>
<b>Manage Range of Variation Across Surgical Teams</b>	Standardize common supplies used across facilities, surgical teams, and procedures	Increase the standardization and utilization of supplies across the network
	Track surgical procedure time by room setup, actual procedure, and room teardown	Maximize OR utilization, increase patient volume, improve on-time starts, decrease room turnover time and patient wait times
	Create surgical profiles by patient type for individual surgeries	Enable more accurate scheduling, especially when dealing with unique patient profiles and multiple procedure cases
	Use history of scheduled surgeries to more accurately match procedure codes when posting Create surgeon profiles for each procedure	Continue to attract and retain surgeons through more efficient usage and scheduling of operating rooms and other hospital resources
	Standardize help functions and processes	Improve utilization of limited IT resources
	Develop process models for the most efficient way of performing steps referencing source data, calculating metrics and populating reports	Decrease cycle times for repeatable processes such as new supply item approval and hourly employee timekeeping approval  Determine differences in surgeries by supply usage, surgeon, labor allocation, facility, time of day, etc.  Improve buying leverage with vendors for cost savings  Identify, model, and institutionalize best practices
	Increase use of common processes and materials when building IT infrastructure	Decrease redundancy in work required for building out technical IT infrastructure
<b>... including Preference Cards</b>	Maintain up-to-date and accurate preference cards for surgeons	Increase physician satisfaction  Identify supply consistencies by surgeons and procedures  Improve on-time first case starts and follow-on case starts
	Extend preference cards for surgeries with multiple procedures	Improve scheduling of cases
<b>Improve Access &amp; Use of Information: Performance, Quality, Compliance</b>	Design an enterprise data warehouse (EDW) specifically to support dynamic reporting and analytic needs  Eliminate manual report generation  Enable users with appropriate training and authorization to access EDW information	Reduce time spent finding and collecting data for the purposes of internal and external reporting needs  Increase accuracy and timeliness of internal and external compliance reporting  Improve and expedite audit preparation  Reduce the number of staff required for network reporting requirements
	Create standardized reports across facilities	Reduce the variation in how reporting metrics are calculated across facilities  Decrease the cost of Clinical Decision Support and the turn-around time on analytic reporting