Connected Patient Platform

Use Cases

Three Pillars of Deep Data Insights

Surgical Management Example

Pre-Surgical Population Management	Surgical Patterns of Care	Post-Operative Outcomes

Patient characterization
 • Demographics
 • Comorbidities
 • Symptoms
 • Bile duct involvement
 Diagnostics
 • Labs
  (e.g., AST/ALT, CBC, bilirubin, Alk-P)
 • Imaging
 • Diagnostics mgt
 Management
 • Medications
  (e.g, bile acids, anti-lipidemics)
 • Time-to-Surgery
	Surgical patient profiling
	 • Subpopulations
	 • Case Mix Severity
	 Procedure details
	 • Laparoscopic vs. Open
	 • Robotic-assist
	 • Changes over time (Distribution, volume)
	 Post-Operative Care patterns
	 • Time-to-discharge
	 • Inpatient duration
		Clinical Outcomes
		 • By procedure type
		 • By subpopulation
		 Quality Metrics
		 • Complication rates
		 • Readmission rates
		 • Surgical Revision
		 Value Assessments
		 • Burden of Illness/Cost of Care
		  (Episode, PMPM, PMPY)
		 • Cost-Effectiveness

MEDIDATA

DASSAULT SYSTEMES

Pre-Surgical Planning

The Challenge

- A global medical device company in the cardiovascular space requires access to medical imaging data prior to surgery to assist physicians in the sizing, qualification, and general evaluation of patients. These functions were traditionally performed onsite, requiring significant travel time, or via the distribution of imaging data on CDs or DVDs. The combination of both method led to an average turn around time of just shy of 5 days, which was impacting patient care and physician satisfaction in a negative manner. To solve this problem, this company needed a solution that securely provided access to imaging data in a collaborative environment, in real-time.

What Data is Needed

- CT Imaging
- Angio Imaging
- Echo Imaging
- Physician Performed Measurements
- General Patient EMR Data

Pre-Surgical Planning

Results

- Implemented real-time medical image exchange, directly from hospital PACS or desktop
- Access to imaging data on any device, providing faster opportunities to access and assess patient data
- Secure and compliant cloud based collaboration, ensuring the right people get access to the right data, at the right time
- Integration with advanced 3D modeling tools, taking the sizing and evaluation process to the next level.

85%
Reduction in Pre-Surgical Planning Timelines

Optimized
Patient Outcomes due to more precise device sizing

Increased
Market Share due to streamlined physician collaboration and service offering

Surgical Approach Analysis

The Challenge

- A global orthopedics company is faced with the challenge of understanding how physicians assess ligament tension prior to surgery, during surgery, and after surgery and wanted to see if there were correlations with those assessments and overall patient outcomes. Additionally, how do settings or decisions made during surgery, both using robotic surgery and traditional approaches, play into the outcomes of the patients and correlate to all assessments performed.

What Data is Needed

- Pre-Surgical Assessment Data
- Surgical Assessment Data
- Post-Surgical Assessment Data
- Patient Reported Outcomes Data
- Robotic Surgery Settings

MEDIDATA

DASSAULT SYSTÈMES

Surgical Approach Analysis

Results

- Acquired all pre-surgical clinical data for patients directly from EMR

- Using mobile technologies, acquired physicians assessment immediately after surgery

- Acquired patient reported outcomes data directly from patients using ePRO technologies

- Acquired robotic surgery telemetry data and general settings directly from robotic surgery portal

- Aggregated all data

- Presented findings and correlations in Analytics solution

Patient Outcomes Tracking

The Challenge

- Identify and isolate the critical variable combinations that predict LoT and transitions for patients following surgical care

What Data is Needed

- Demographics, comorbidities, symptoms, labs, medications, procedures, encounters, ICD codes, notes, reports, and other documents in a curated and structured format

What Insights are Needed

- Subgroup prognosis
- Treatment patterns
- Real world effectiveness/safety
- Population size
- Patient profiles
- Natural history of disease
- Sites and episodes of care

Patient Outcomes Tracking

Results

- Isolated the critical variable combinations that predict LoT and transitions (Variables include demographics, genetics, medications, comorbidities, lab results)

- Developed new business rules based on novel data analysis to classify patient treatment journey based on Line of Therapy