



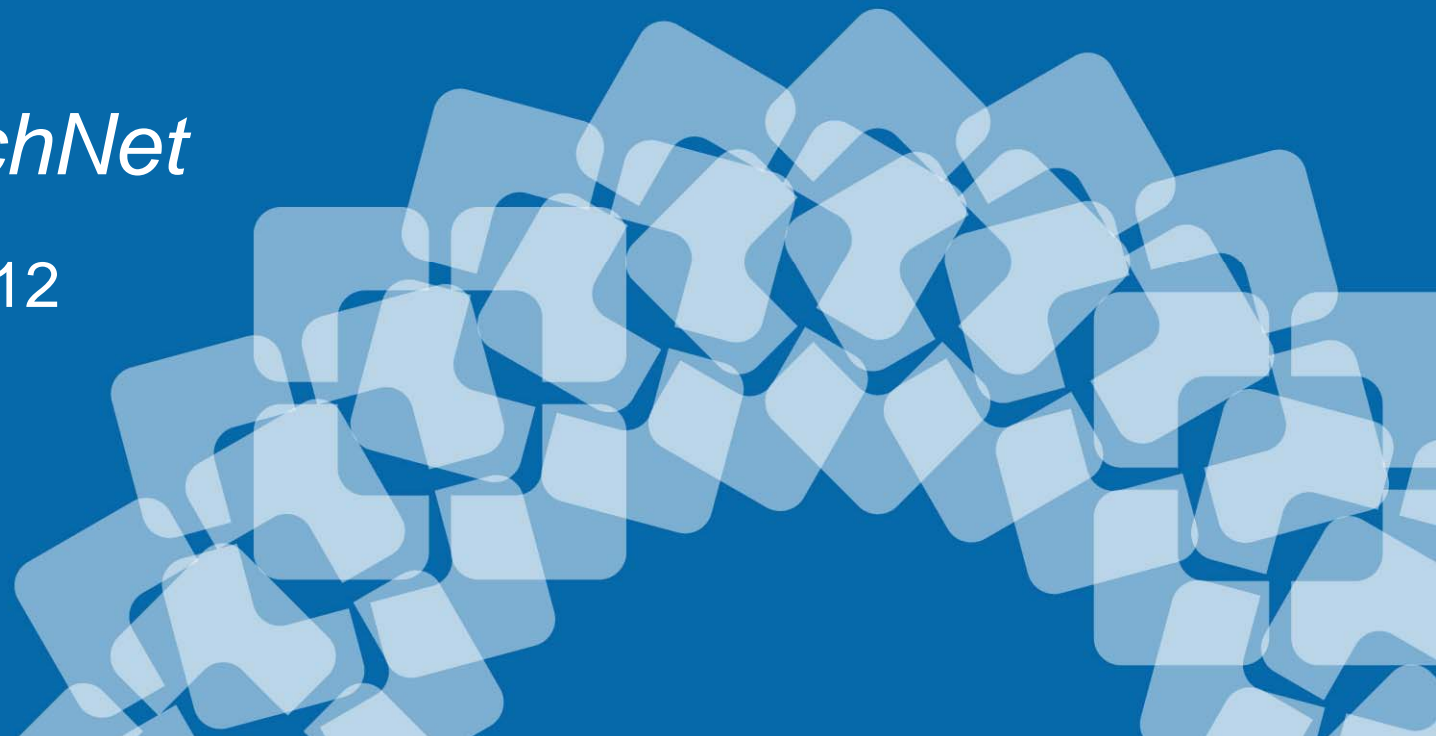
An Enterprise Business Intelligence Journey

Michael Zuschin

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Cleveland Clinic

HealthTechNet

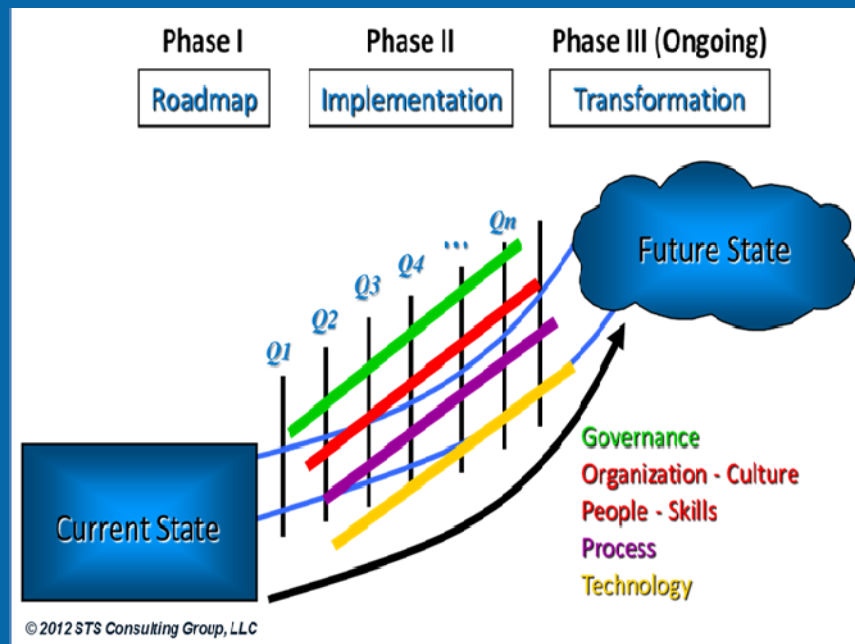
March 16, 2012



Agenda

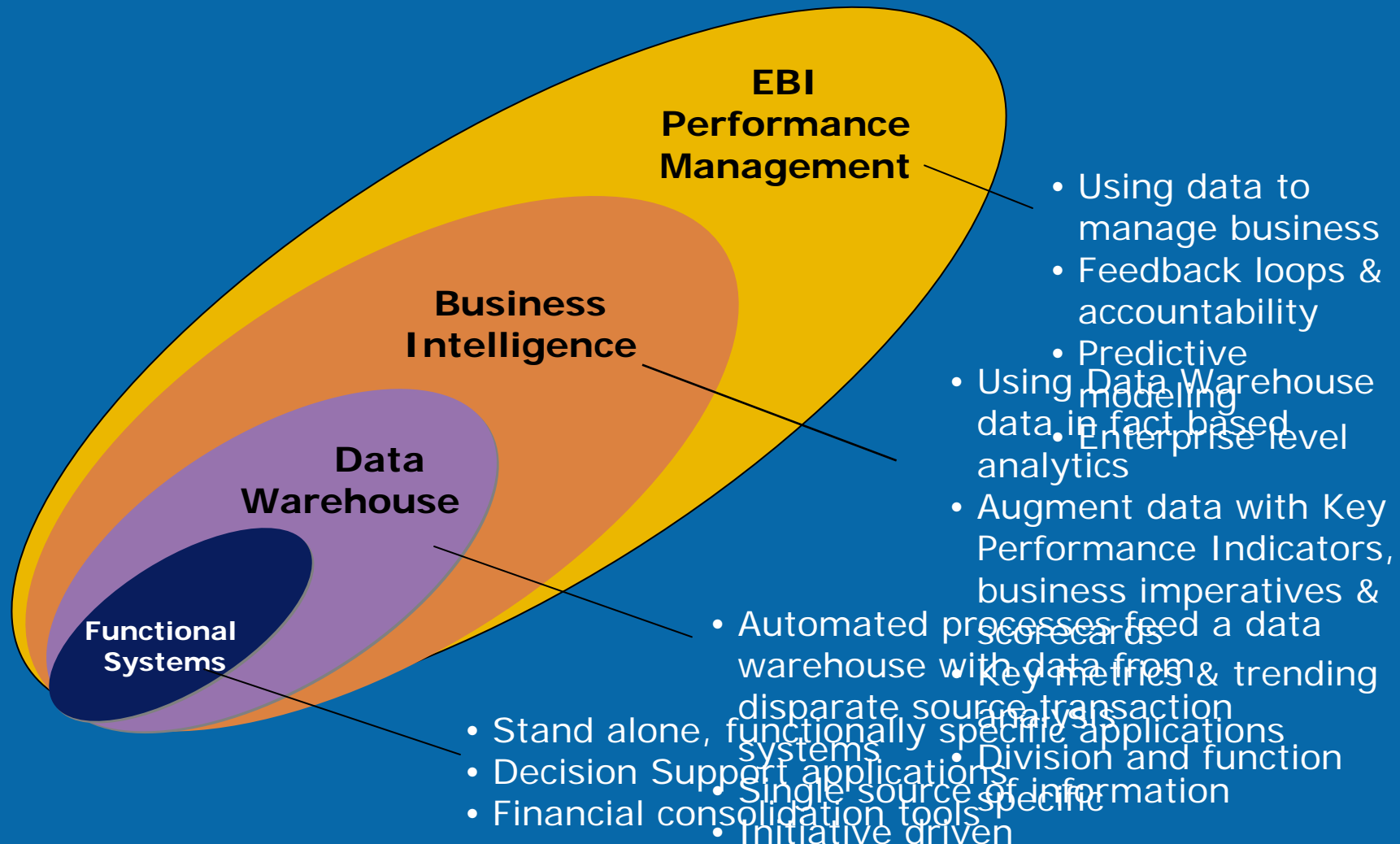
- Enterprise Business Intelligence (EBI) at Cleveland Clinic
- EBI Program Evolution
- EBI Program Results
- Questions and Answers

What is Enterprise Business Intelligence?

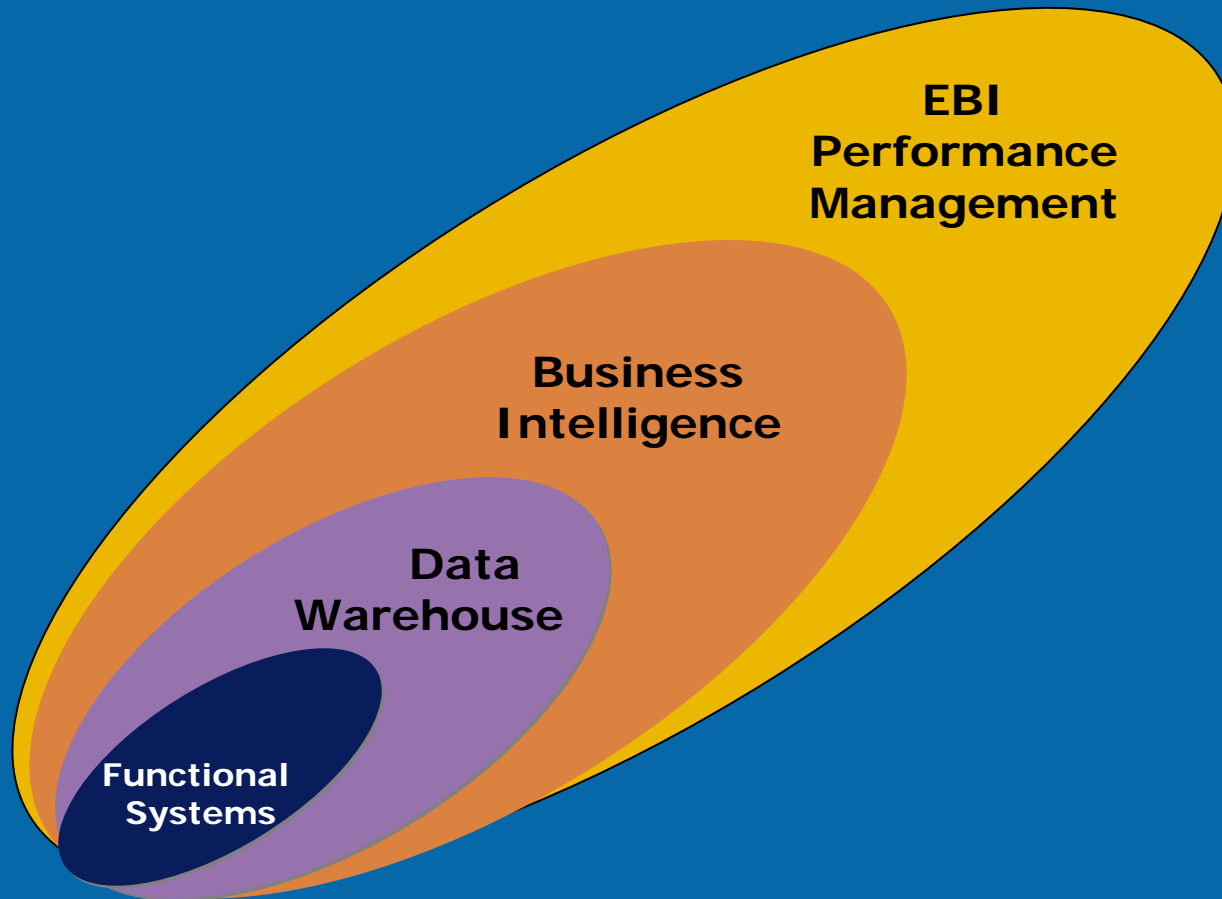


“EBI is an umbrella term describing the concepts and methods that improve business decision-making by using information in fact-based analytics to drive quantifiable change and optimize operations”

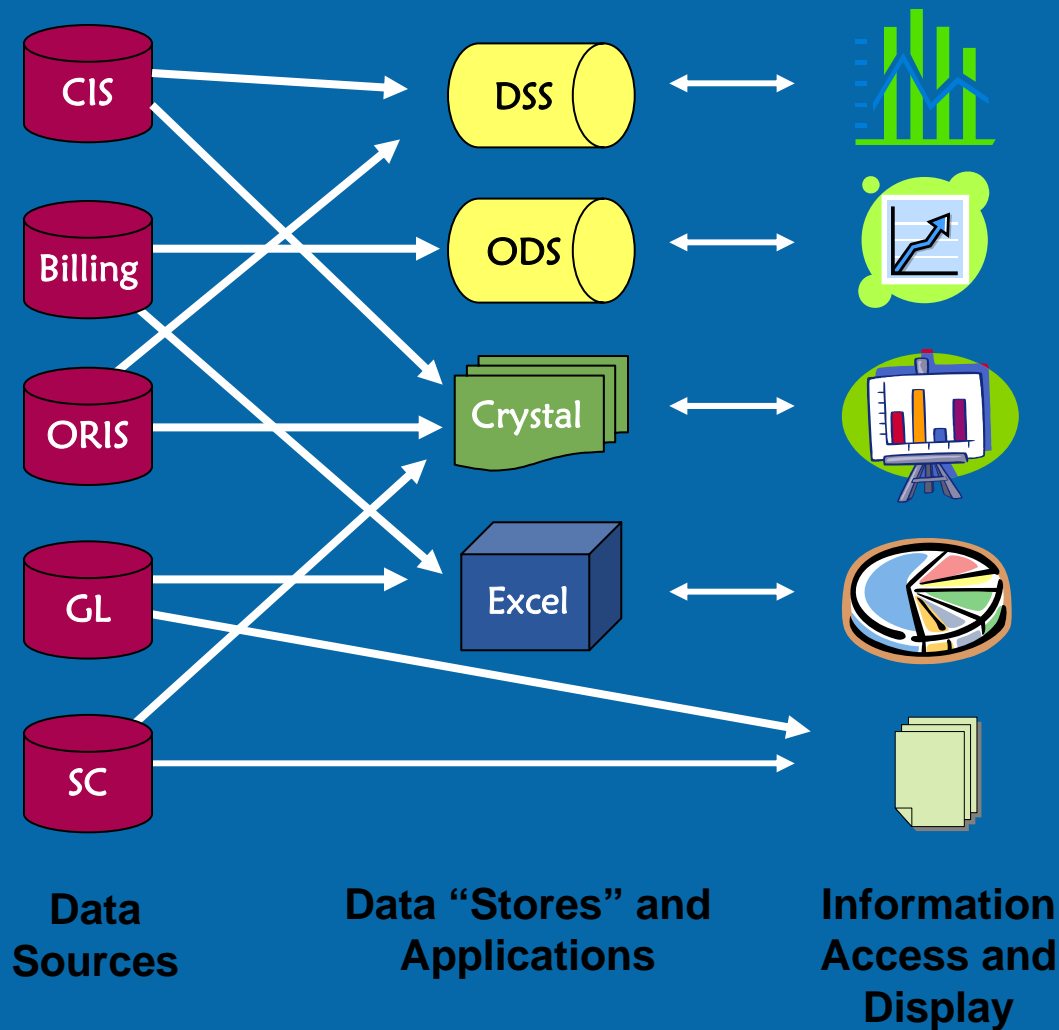
From Data to Performance Management



From Data to Performance Management



Why 'Enterprise' BI?



- Many 'silo' technology solutions with limited integration
- Data stores developed and independently owned – duplicative and expensive
- Inefficient and untimely delivery of information
- Disjointed approach to access and display
- Duplicate and inconsistent data and definitions – no 'single source of truth'

Why 'Enterprise' BI?



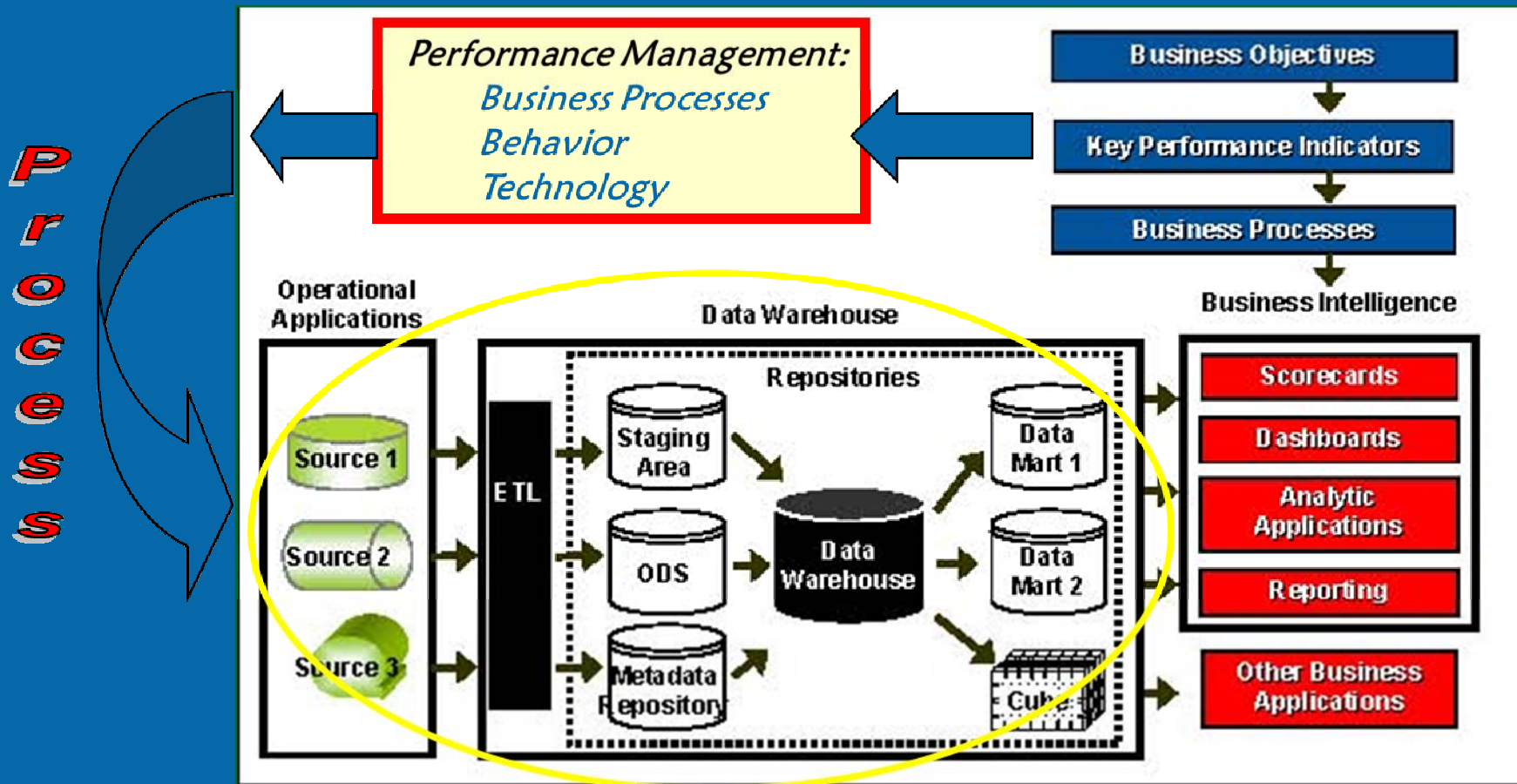
From Data to Performance Management



- Data Architecture
- Data Governance (Initial Concepts)

EBI Operating Model

Enterprise Data Assets and Governance are a must!



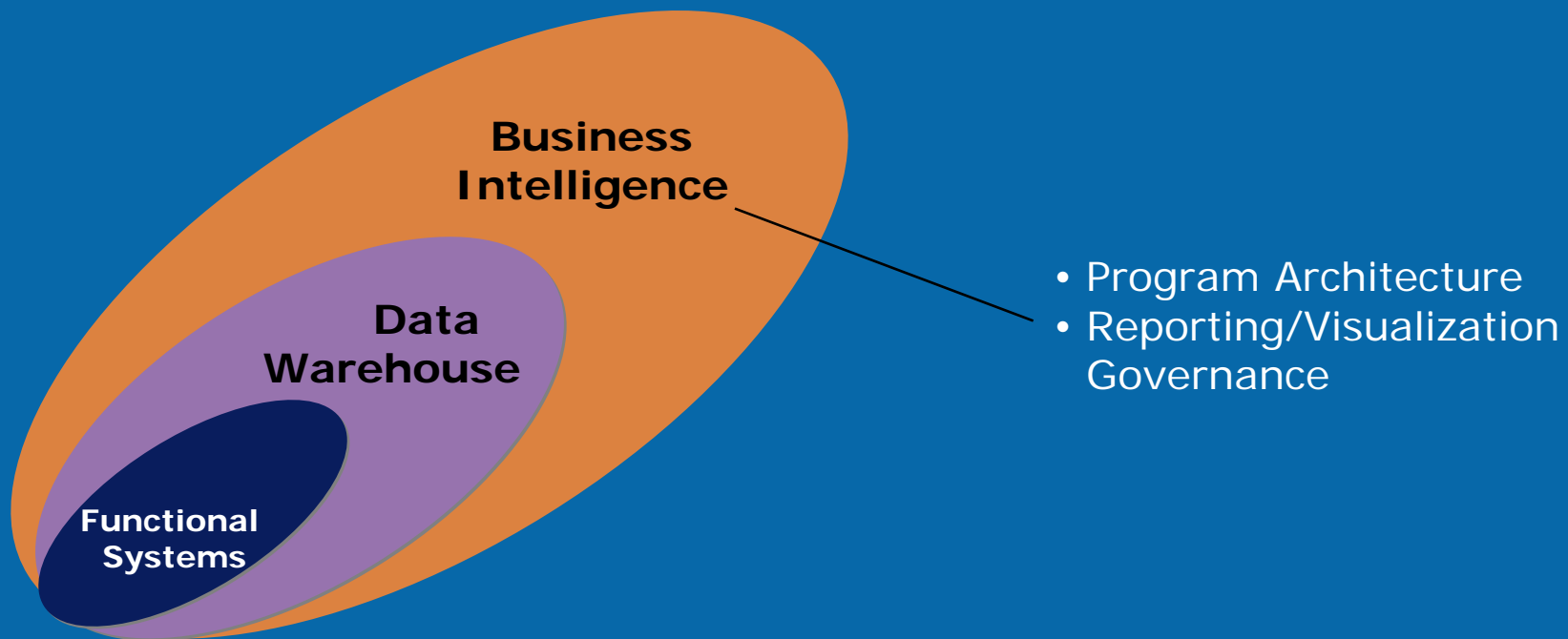
Source: STS Consulting Group, LLC modified Gartner BI Model

From Data to Performance Management

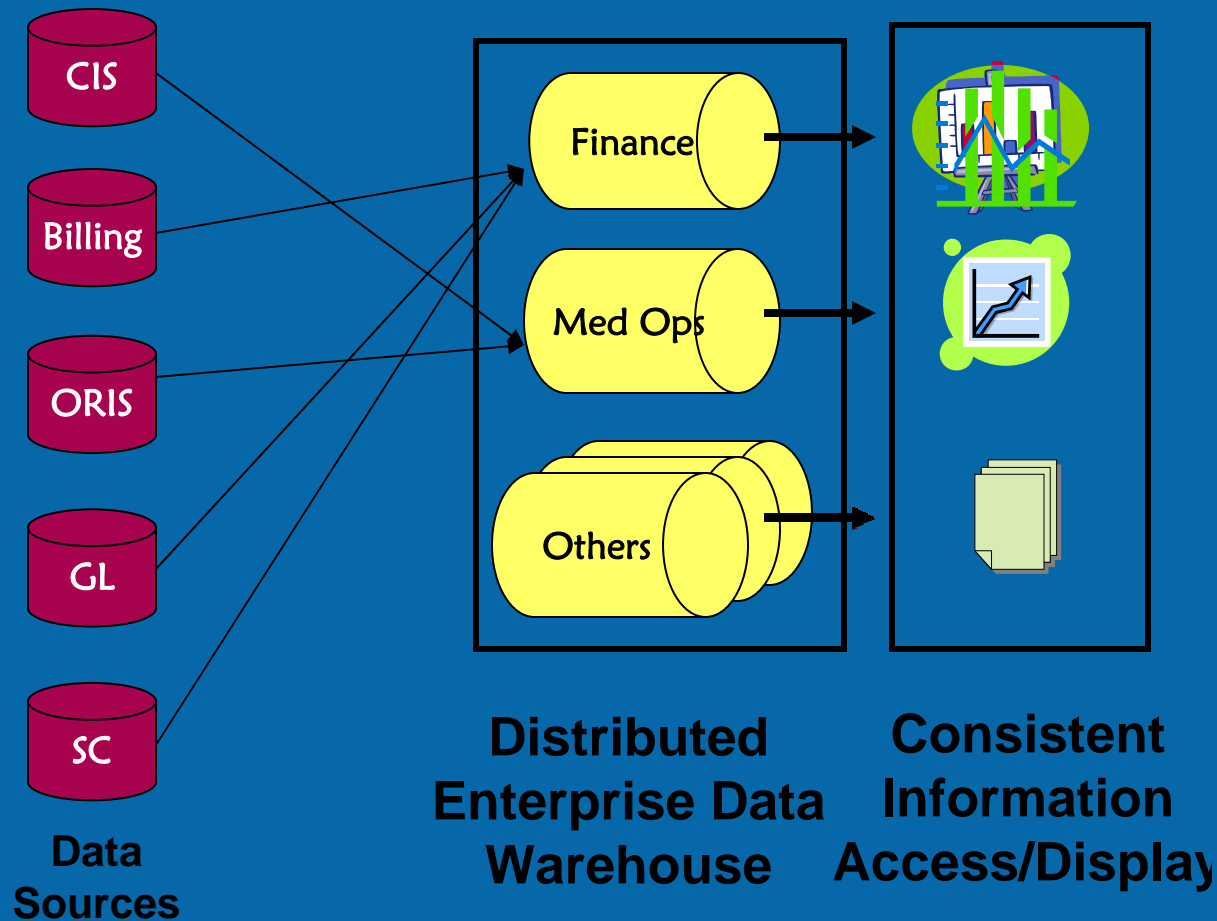


- Data Architecture
- Data Governance (Initial Concepts)
- ✓ Initiative-driven
- ✓ Introduce Standard Definitions

From Data to Performance Management



EBI Architectural Approach



Characterized by:

Coordinated approach regarding:

Data ETL and storage

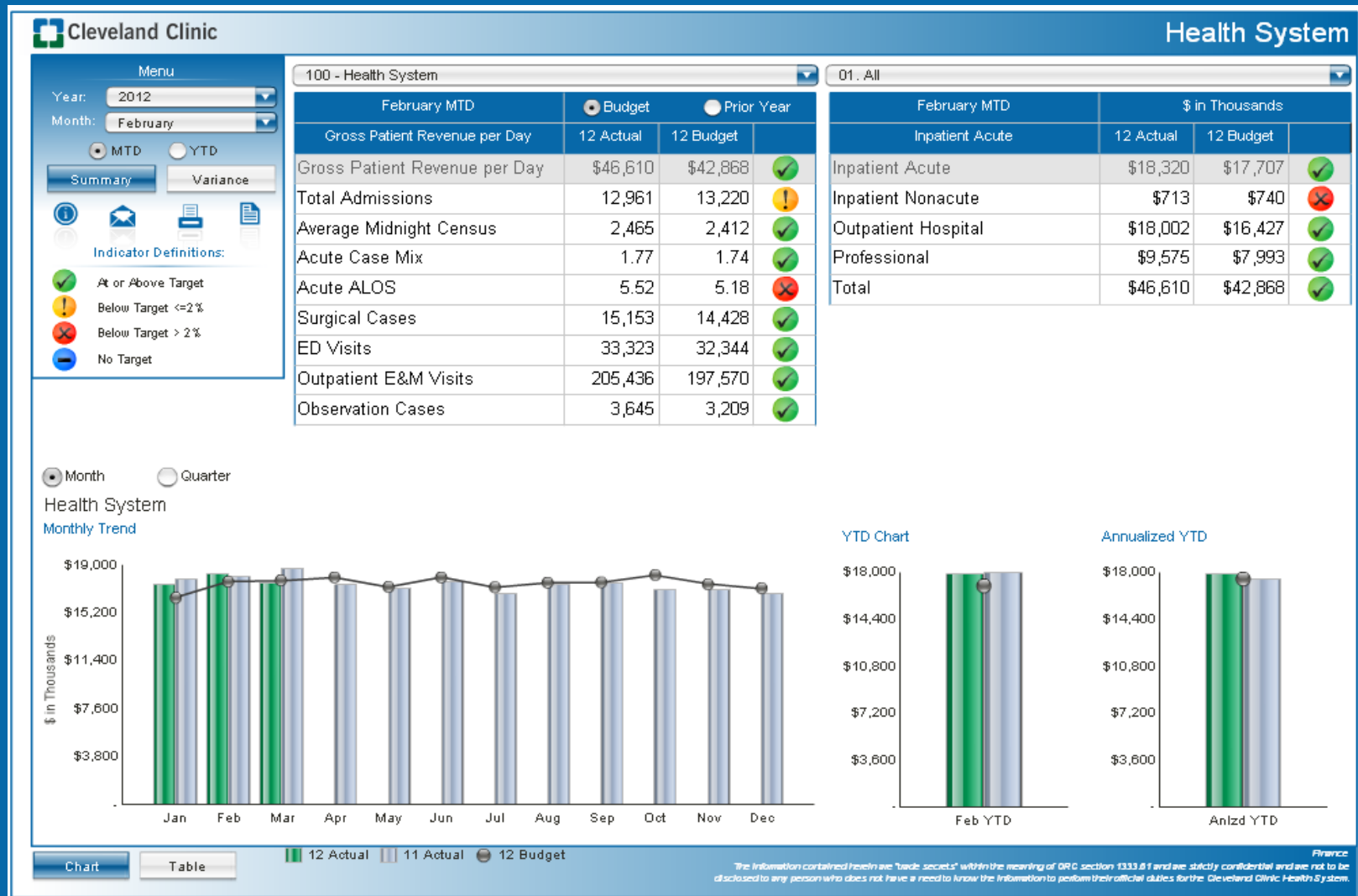
Data visualization and reporting

Data stores developed and owned by independent departments

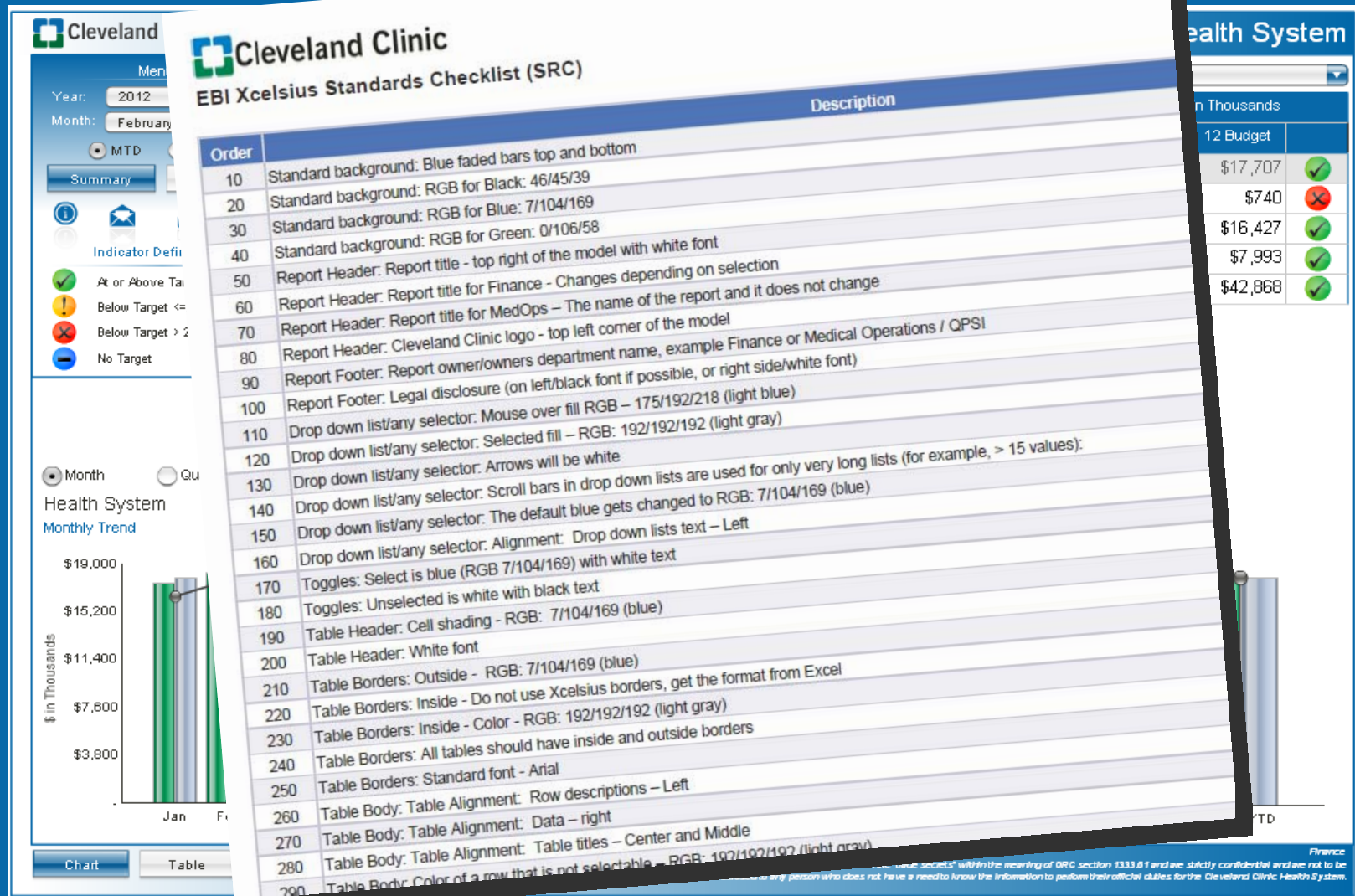
Efficient and timely delivery of information

Coordinated representations of data with consistent definitions – moving towards a single source of truth

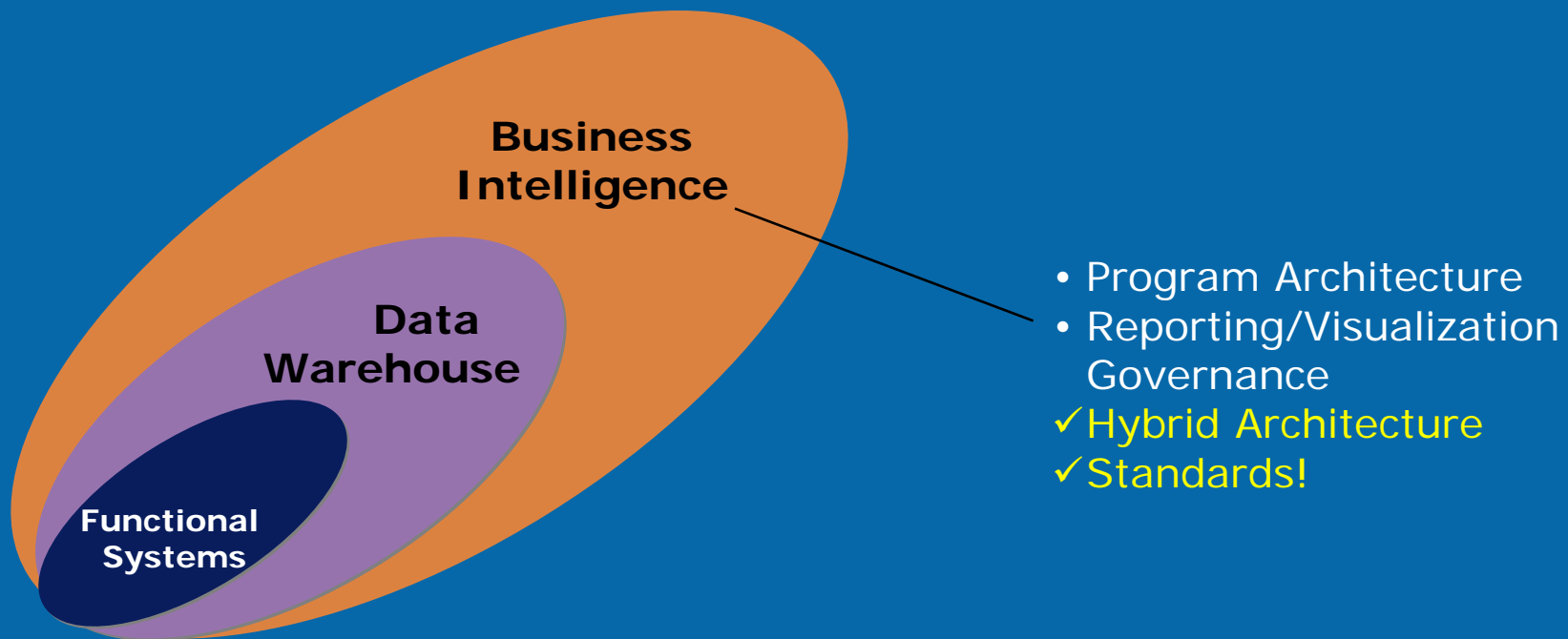
Cleveland Clinic Statistics Dashboard



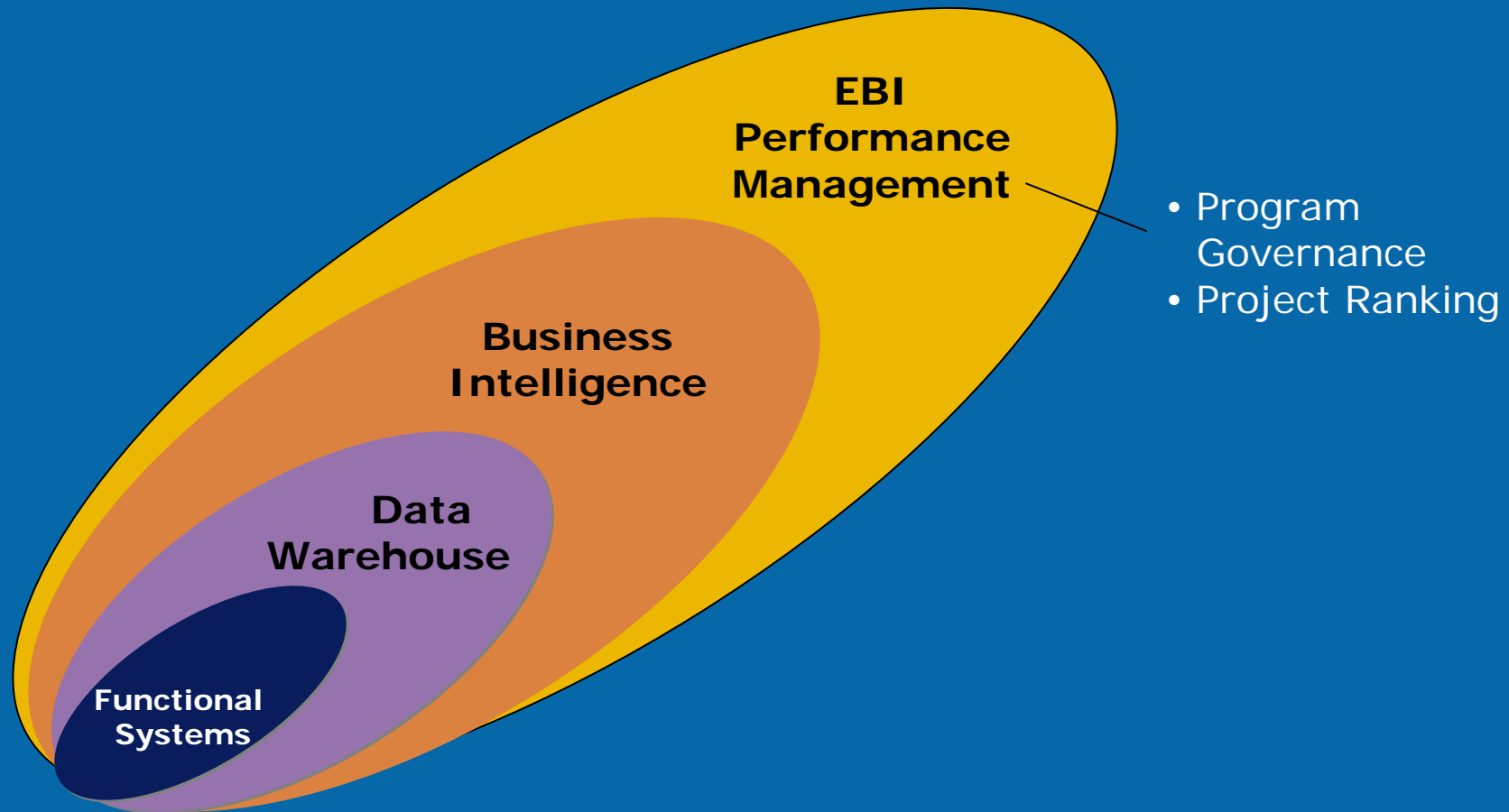
Cleveland Clinic Statistics Dashboard



From Data to Performance Management



From Data to Performance Management



Our EBI Strategy

Cleveland Clinic's Enterprise Business Intelligence - New Request

EBI Project Ranking / Prioritization

START	RATINGS	5
	4	Significant impact on known financial

Enterprise Business Intelligence

Home Documents and Lists Create Site Settings Help

Enterprise Business Intelligence > EBI Project Summary

EBI Project Summary

View All Site Content

Sites

Documents

- Standards
- Organizational Structure
- Teams & Meetings
- Project Prioritization
- Production Development

Pictures

Lists

- Meetings
- Current Dashboards
- Issue Management Log
- Issue Log

Actions

Title	Status	Phase	Estimated Complete Date
Phase : 1 - In Queue (85)			
Phase : 2 - Requirements & Design (23)			
Phase : 3 - Execution (25)			
Phase : 4 - On Hold (30)			
Phase : 5 - Completed (279)			
Phase : 6 - Canceled (75)			

Project M develops a P Scope Sta "In Queue" & over to Lead Team for ap

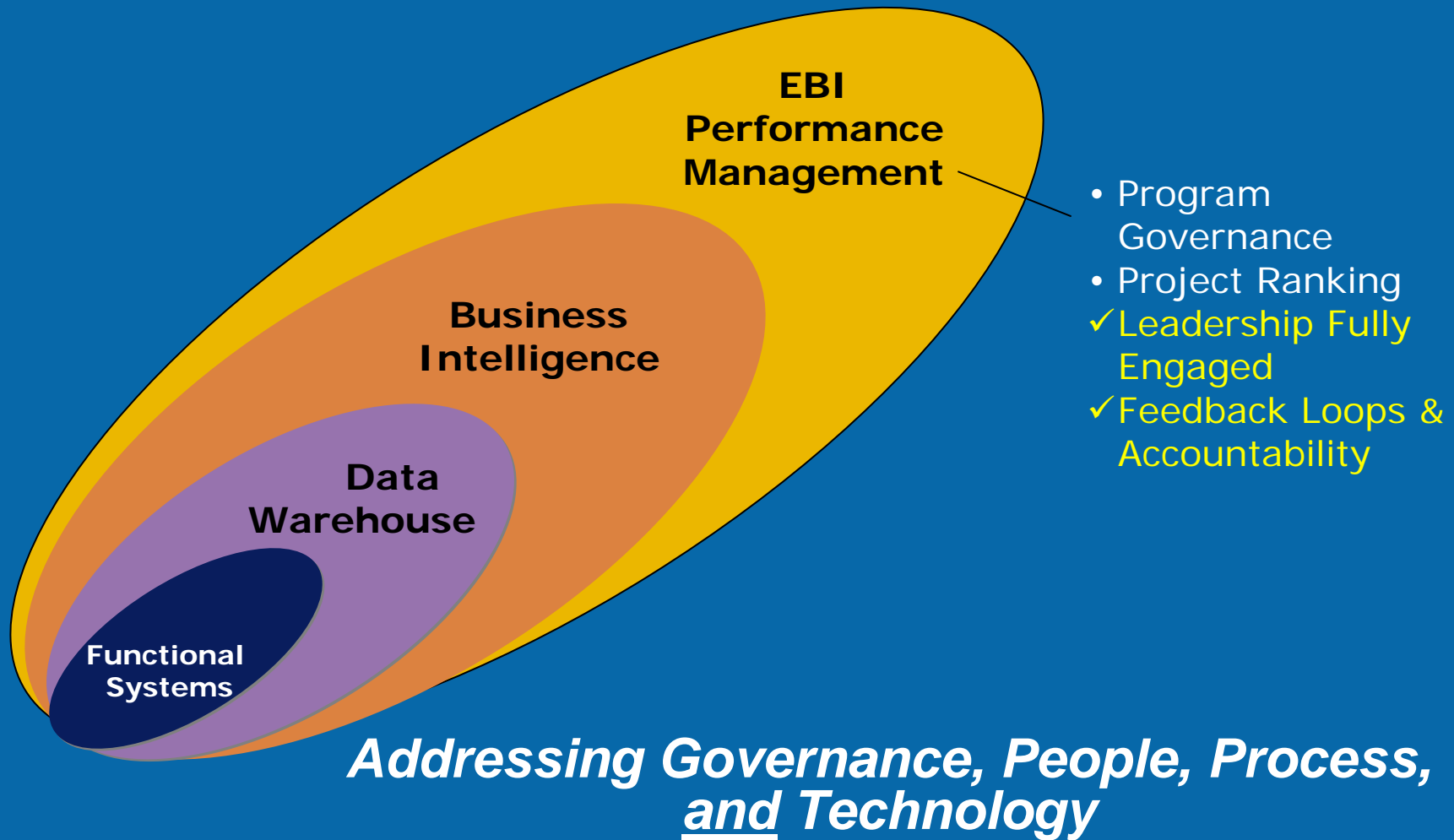
Reviews requ mail

Operational B

Employee Engagement

No expected impact

From Data to Performance Management



Cleveland Clinic - Access Initiative

Challenge

- Improve patient access and wait times for appointments
- From CEO: “The Clinic is a great place to get care – but you have to know somebody to get an appointment”
- Traditional measures of access ineffective

Cleveland Clinic - Access Initiative



Data Dictionary

Outpatient Access

December

Page 1

Performance

Detail

Institute	Pre Vs. Post 9/7/07*	% Filled	% Unavailable
Cancer Institute	↑	↓	38%
Derm/Plast Institute	↓	↓	36%
Digestive Institute	↑	↓	29%
Endo/Bariatric Institute	↓	↓	42% ↓
Eye Institute	↑	↓	32%
Head & Neck Institute	↑	↓	33%
Heart/Vasc Institute	↑	↓	36%
Lorain County	↓	↑	34%
Medicine Institute	↑	↑	32%
Neurological Institute	↓	↓	34%
OB/GYN Institute	↑	↓	34%
Ortho Institute	↑	↓	36%

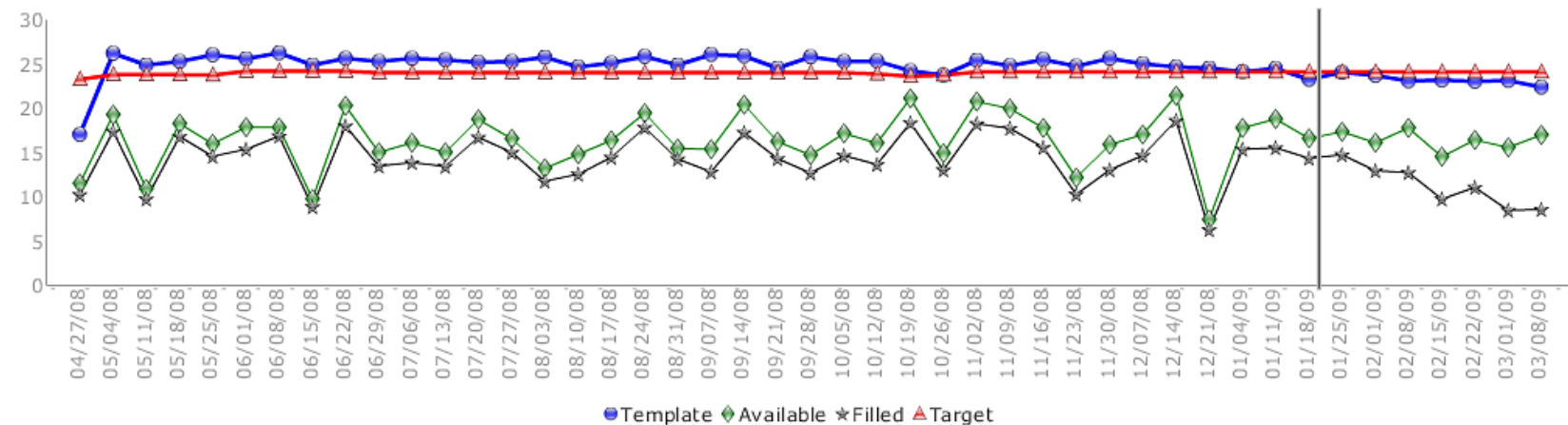
Center	Pre Vs. Post 9/7/07*	% Filled	% Unavailable
Bariatrics	↑	↓	31% ↓
Endocrine Surgery	↑	↓	72%
Endocrinology	↓	↑	43%

Endocrinology & Metabolism Institute

Hours per Clinical FTE by Week

Institute

Center



Medical Operations

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*Per Week Per Clinical FTE

Cleveland Clinic - Access Initiative



Cleveland Clinic

Data Dictionary

Appointment When Wanted

November

Page 1

Institute	Actual	Target	
Anesthesia	65%	73%	↓
Cancer Institute	84%	73%	↑
Derm/Plast Institute	62%	73%	↓
Digestive Institute	74%	73%	↑
Endo/Bariatric Institute	77%	73%	↑
Eye Institute	84%	73%	↑
Head & Neck Institute	74%	73%	↑
Heart/Vasc Institute	82%	73%	↑
Medicine Institute	74%	73%	↑
Neurological Institute	70%	73%	↓
OB/GYN Institute	71%	73%	↓
Ortho Institute	76%	73%	↑

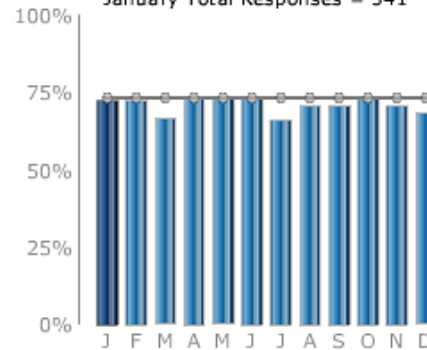
How would you rate the ease of getting an appointment when you wanted one?

Source: QDM 1=Excellent (E); 2=Very Good (VG); 3=Good (G); 4=Fair (F); 5=Poor (P)
Calculation = (Total Excellent Responses + Total Very Good Responses) / Total Responses

Neurological Institute

12 Month Trend

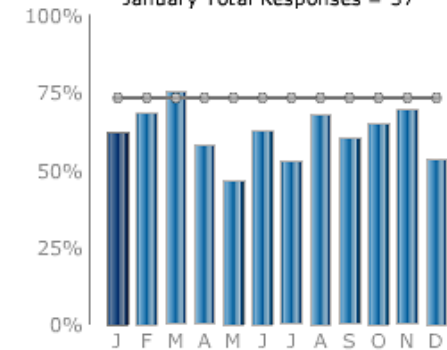
January Total Responses = 541



Neurology

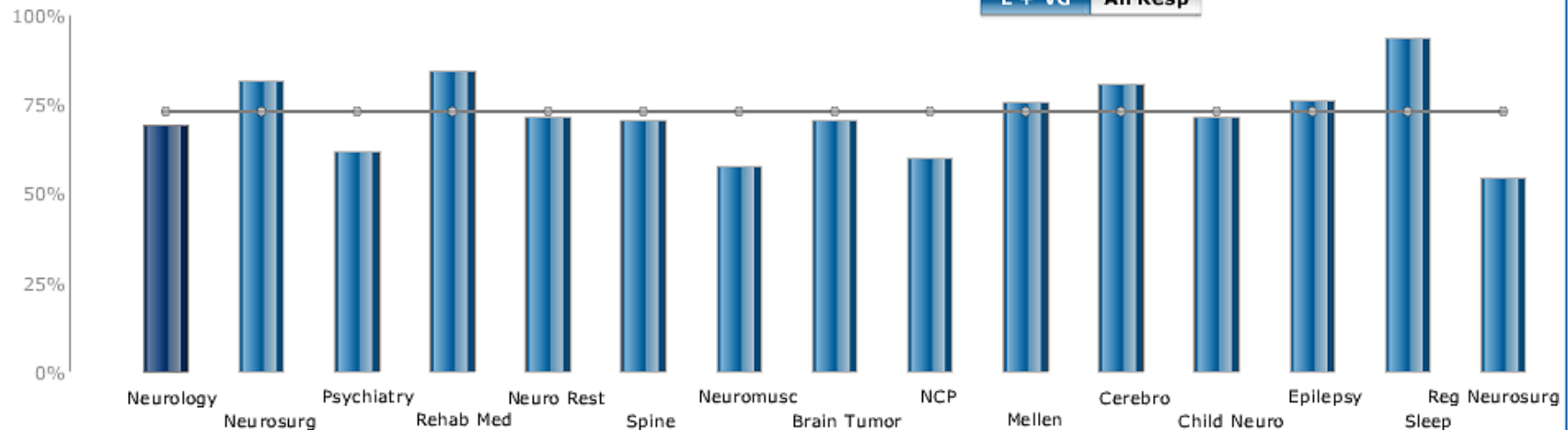
12 Month Trend

January Total Responses = 37



Centers

November

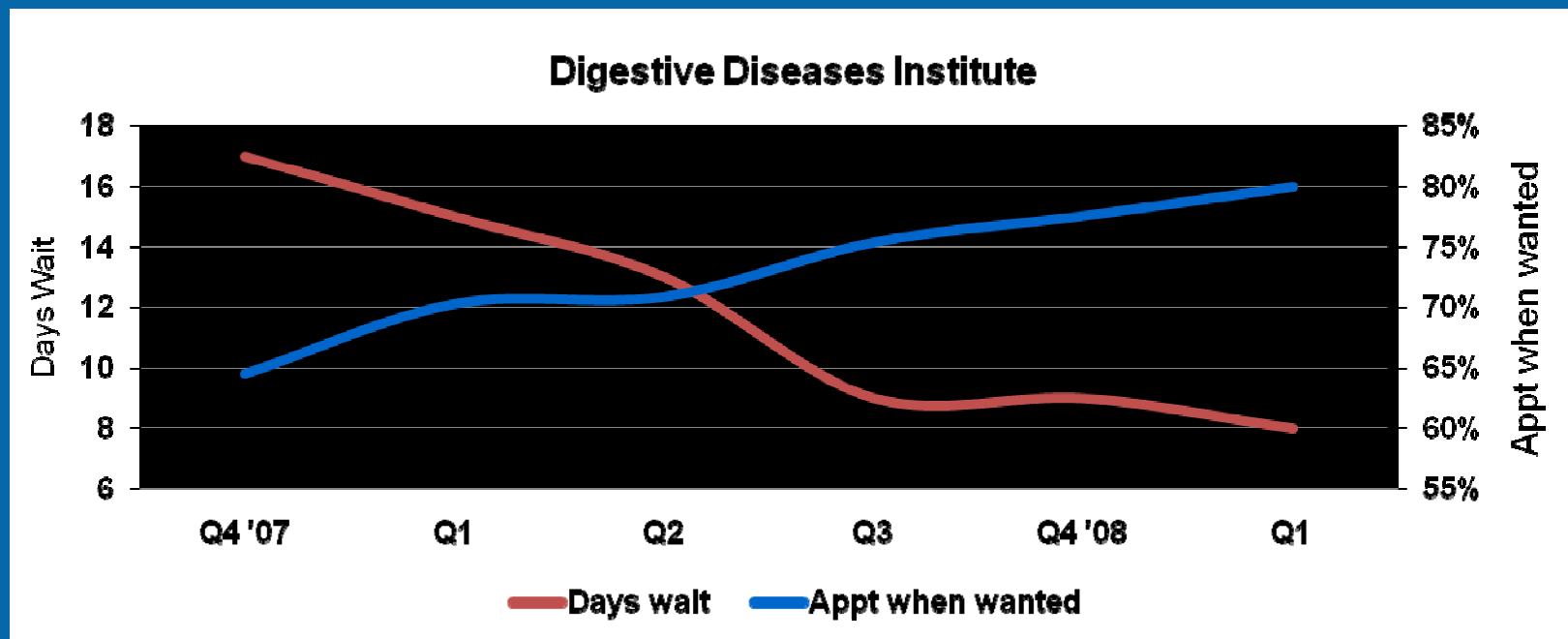


Medical Operations

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Cleveland Clinic Value Delivered!

- Outpatient Visits: 1,000 additional slots per week added
- Multi-million dollar impact
- Improved satisfaction with appointment wait times

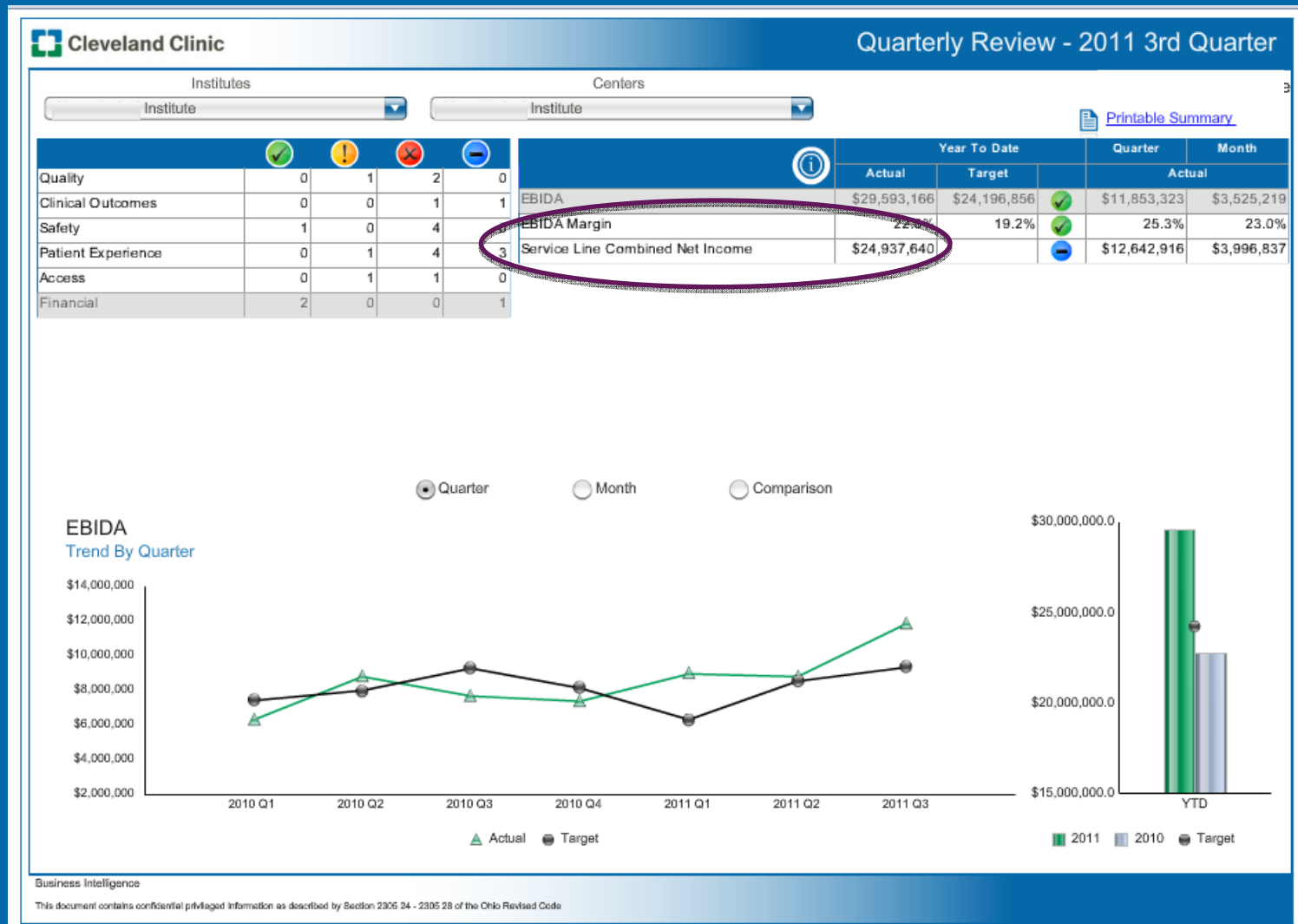


Service Line Financial Performance

Challenge

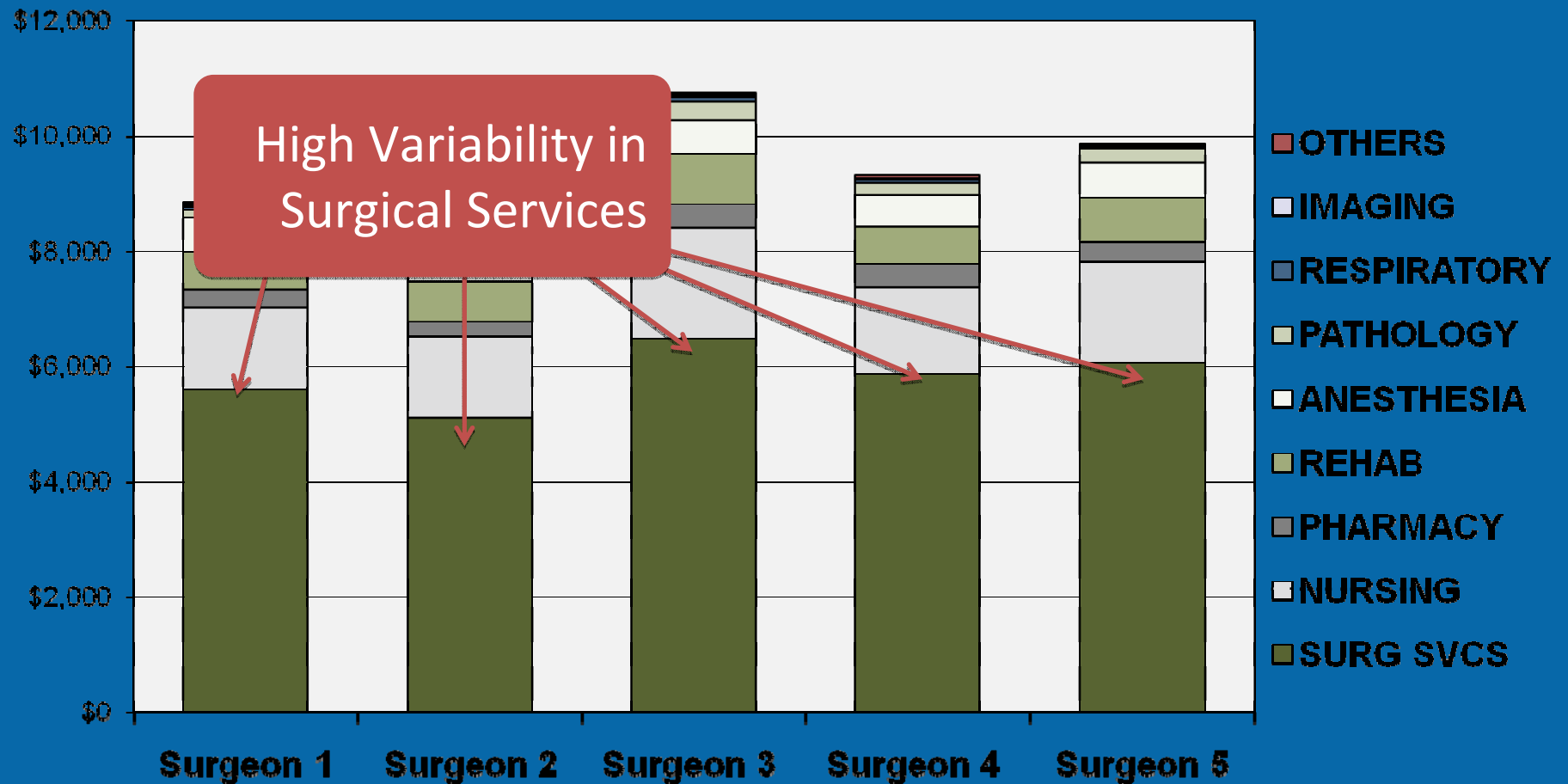
- View financial performance and responsibility from a Service Line perspective
- Drive 4% reduction in cost per case for targeted populations

Service Line Financial Performance



Service Line Financial Performance

Direct Cost by Resource Area



Service Line Financial Performance

Supply Category	Surgeon 1	Surgeon 2	Surgeon 3	Surgeon 4	Surgeon 5
Implants	\$3,811			\$65	\$4,002
OR Time	36			60	357
Misc. Supplies	258			3	200
Blades & Knives	79				138
Sutures	21				27
Others	580				650
Total	\$5,120	\$1,540	\$5,979	\$5,301	\$5,374



Service Line Financial Performance

Challenge

- View financial performance and responsibility from a Service Line perspective
- Drive 4% reduction in cost per case for targeted populations

Results

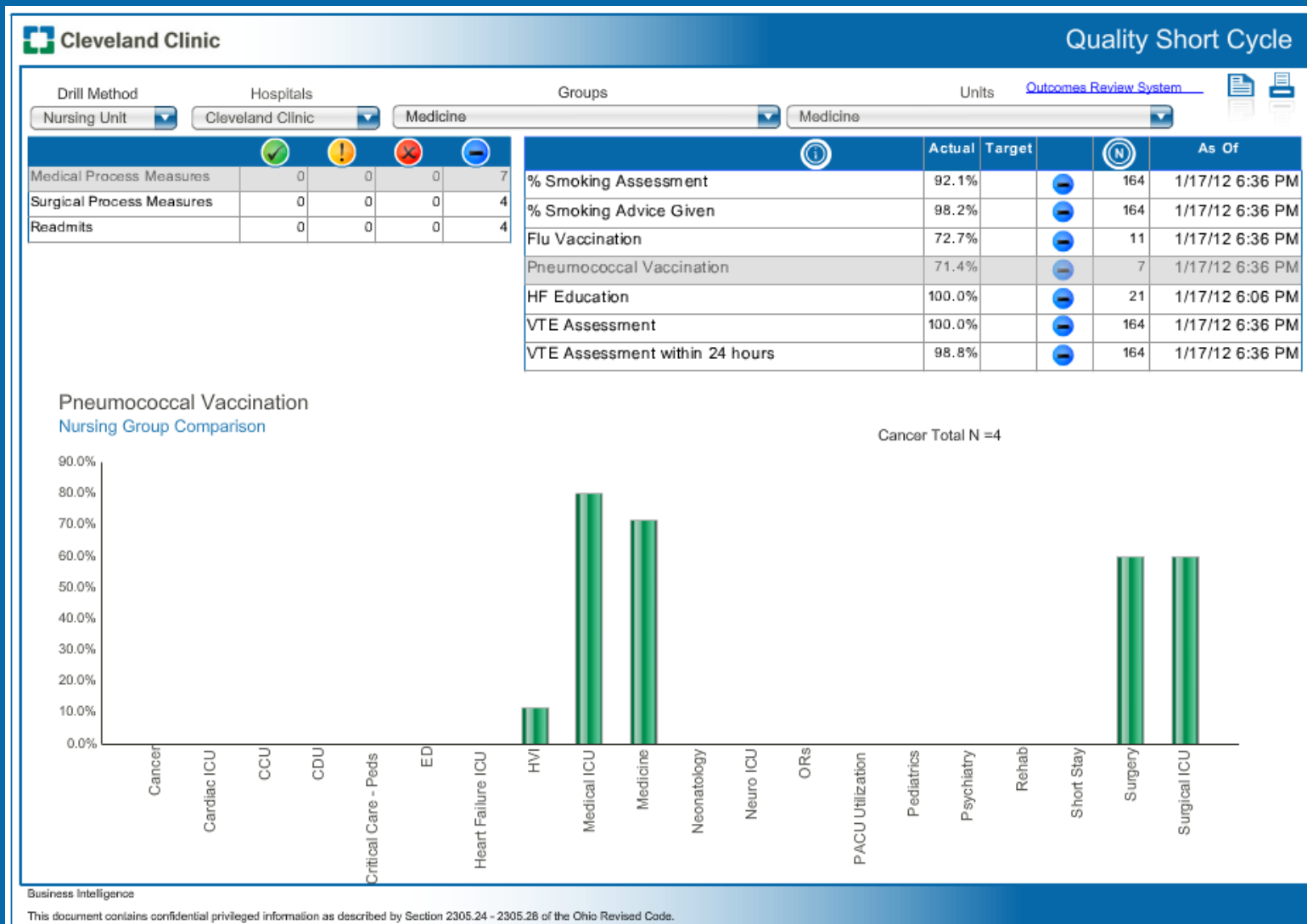
- 6.5% reduction in cost per case

Quality – Core Measures Dashboards

Challenge

- Improvement in core measures compliance
- Cycle of improvement with existing process too long

Quality – Core Measures Dashboards



Quality – Core Measures Dashboards



Quality Short Cycle Detail Report

Cleveland Clinic - Patient List - Failed Pneumonia Vaccination as of 11/24/2010 02:40 PM

Percent= 58.3% Numerator (Pass)= 42 Denominator= 72 Eligible Count= 30

Nursing Unit	Bed Number	Admit Date	MRN	Attending Physician
G020	09	Nov 6 2010 11:12PM		P. RASMUSSEN
G061	12	Nov 21 2010 10:55PM		C. CHOUDHARY
G080	17	Nov 22 2010 6:08PM		V. NAGARAJAN
G100	31	Nov 23 2010 9:15PM		W. CAREY
H022	07	Nov 12 2010 12:33PM		M. VOGELBAUM
H050	18	Nov 17 2010 10:35PM		S. STRONG
H080	18	Nov 16 2010 1:26PM		R. FACTORA
J031	12	Nov 19 2010 11:48PM		S. NISSEN
J031	14	Nov 15 2010 2:35PM		S. NISSEN
J053	01	Nov 23 2010 10:33AM		G. PETTERSSON
J053	03	Nov 23 2010 4:51PM		T. MIHALJEVIC
J054	01	Nov 18 2010 12:59AM		K. MCCURRY
J054	03	Nov 18 2010 6:10PM		G. PETTERSSON

Quality – Core Measures Dashboards

Challenge

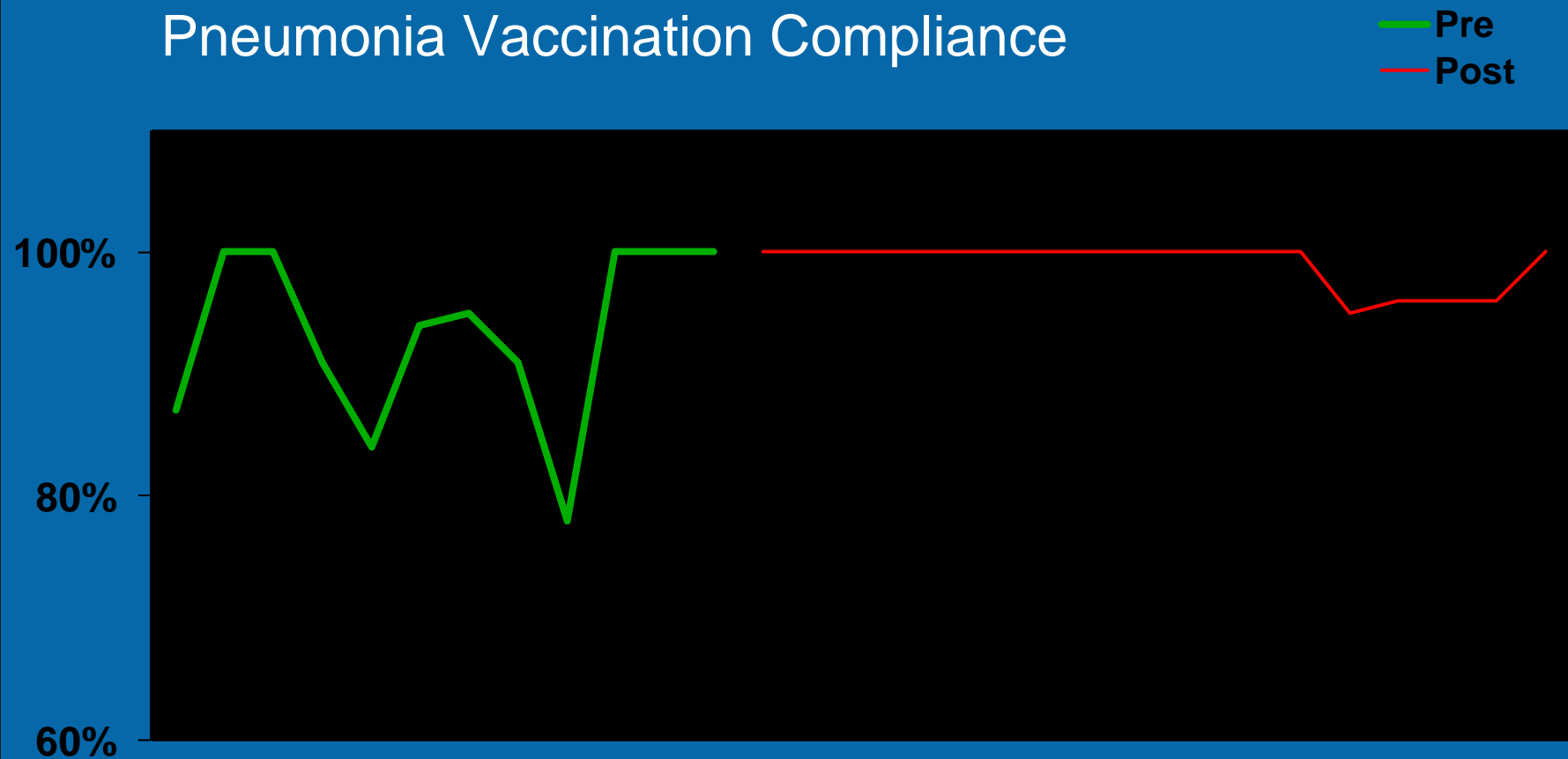
- Improvement in core measures compliance
- Cycle of improvement with existing process too long

Results

- Improved compliance:

Quality – Core Measures Dashboards

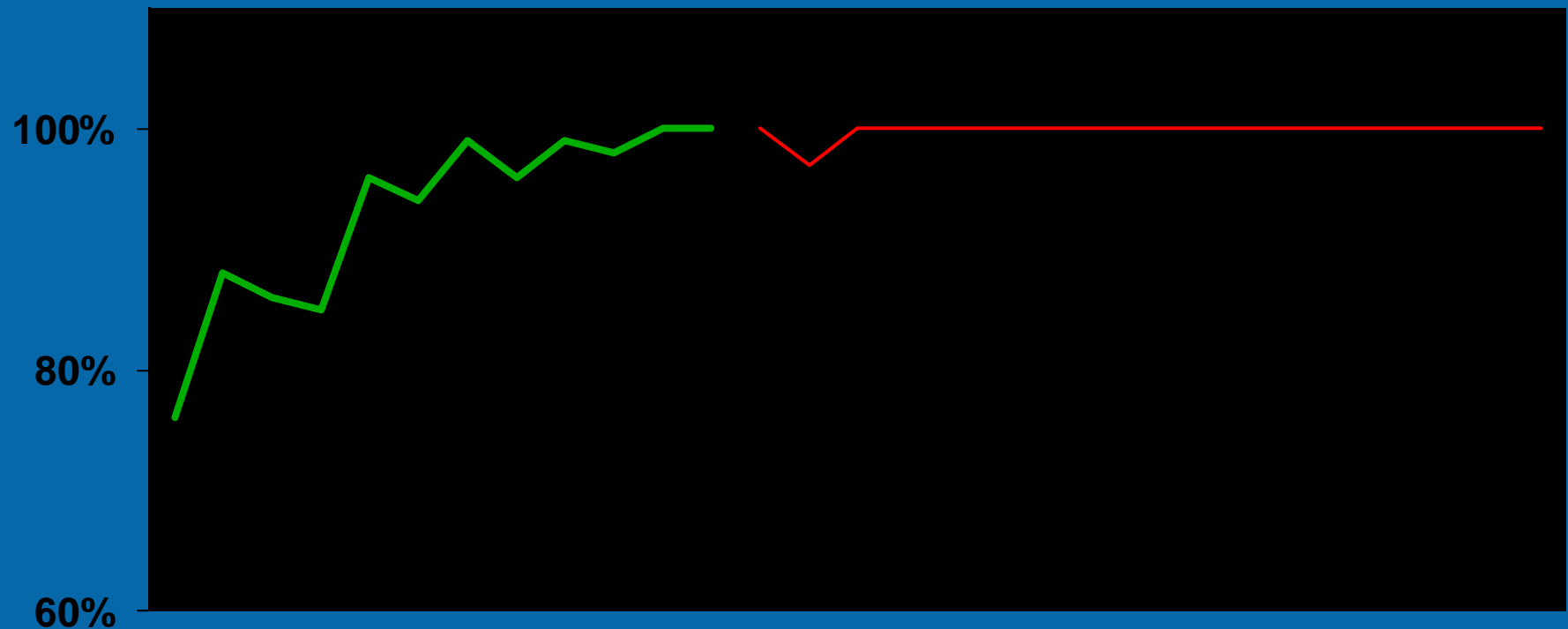
Pneumonia Vaccination Compliance



Quality – Core Measures Dashboards

Smoking Cessation Compliance

Pre
Post



Thank You!

***Questions & Answers ...
about our Journey***

