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Annual Conference
& Exhibition

APRIL 12–16, 2015
Chicago, IL

Realizing Value. **Transforming Health.**

Data Governance:
Measure Twice, Cut Once
April 14, 2015

CARILIONCLINIC

encore
A Quintiles Company

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Conflict of Interest

Stephen Morgan, MD

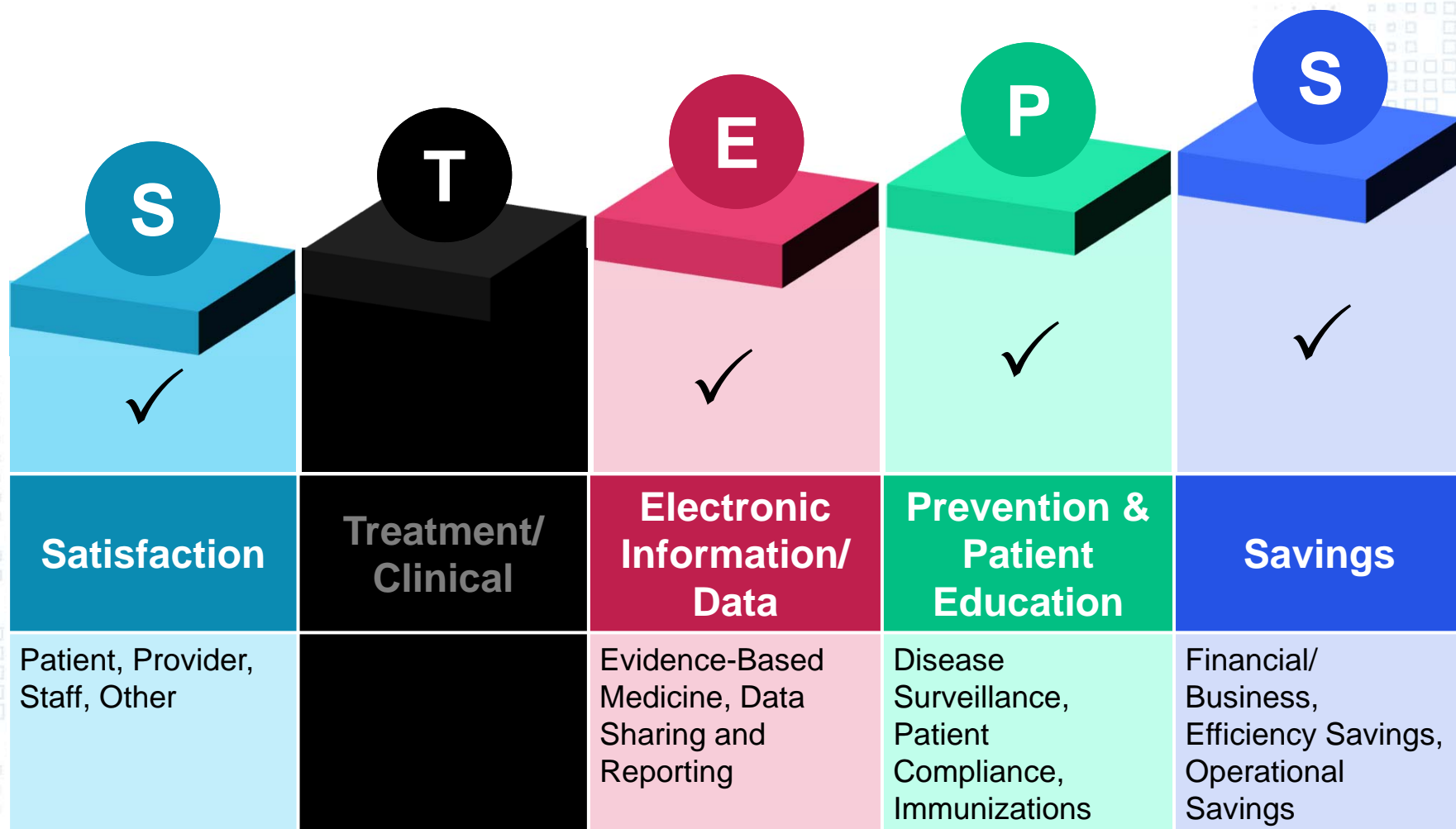Has no real or apparent conflicts of interest to report.

Randy L. Thomas

Has no real or apparent conflicts of interest to report.

Learning Objectives

- Define data governance and its role in an organization evolving to fee-for-value

- Describe how an organization can establish an effective data governance structure and process

- Identify the specific steps needed to ensure engaged executive leadership involvement

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An Introduction to the Benefits Realized for the Value of Health IT

Satisfaction	Treatment/ Clinical	Electronic Information/ Data	Prevention & Patient Education	Savings
✓		✓	✓	✓
S	**T**	**E**	**P**	**S**
Patient, Provider, Staff, Other		Evidence-Based Medicine, Data Sharing and Reporting	Disease Surveillance, Patient Compliance, Immunizations	Financial/ Business, Efficiency Savings, Operational Savings

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What We'll Cover

- What's driving data governance adoption in healthcare?
- Data governance definition
  - 8 components of data governance
  - Data governance maturity model
- Illustrative approach to data governance:
  - Structure
  - Policies
  - Monitoring
- Some best practice examples
- Wrap up and next steps

Drivers for Adopting a Formal Data Governance Discipline

1 The organization gets so large that traditional management isn't able to address data-related cross-functional activities.

2 The organization's data systems get so complicated that traditional management isn't able to address data-related cross-functional activities.

3 The organization's data architects, SOA teams, or other horizontally-focused groups need the support of a cross-functional program that takes an enterprise (rather than confined) view of data concerns and choices.

4 Regulation, compliance, or contractual requirements call for formal data governance.

## All four conditions currently exist in healthcare!

What Is Data Governance?

…the   **discipline**   of formally organizing and managing

data and information assets across an organization from a

business, technical, and administrative   perspective for

the purpose of   **managing data as an asset,**   driving

information quality, and optimizing data outcomes that

enhances decision making.

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What Data Governance Is Not
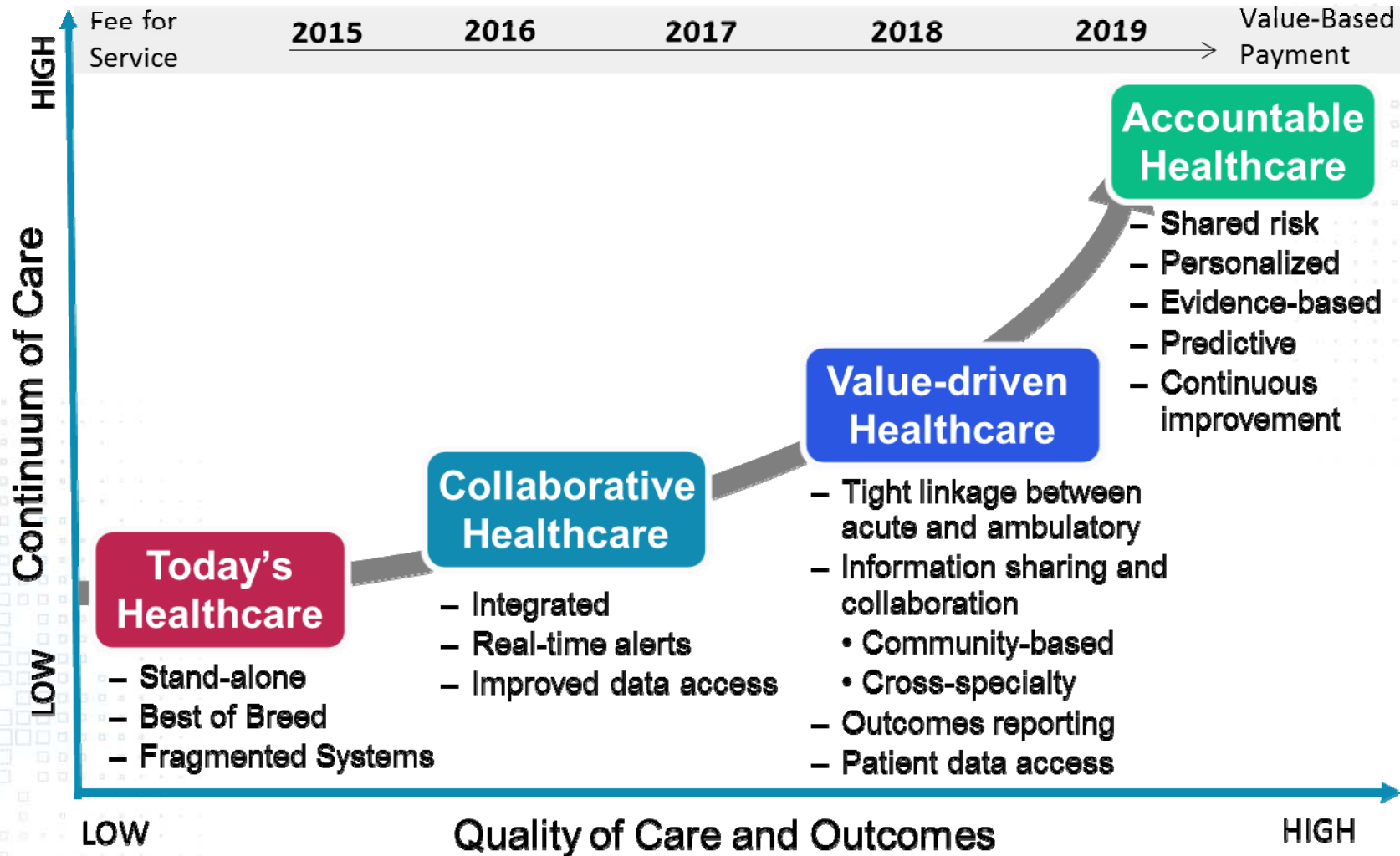
Interfaces
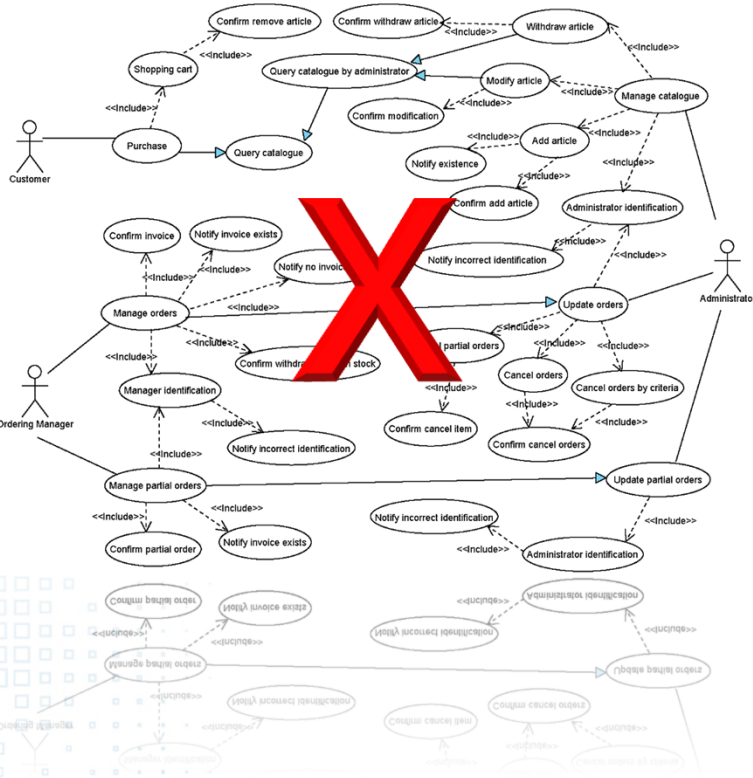
Management Hierarchy

STANDARDIZED APPLICATIONS

Business Drivers for Adopting Data Governance

Anatomy of a Data Element:
From Source to Re-purpose

Medicare Shared Savings Pilot	Partnership for Patients

that support focused initiatives

Population Health	Quality Metrics	Cost & Margin	Growth

that are re-purposed in analytics apps

generate individual data elements

Source systems

ED	Practice Mgmt	EHR	Patient Billing	ADT	Other

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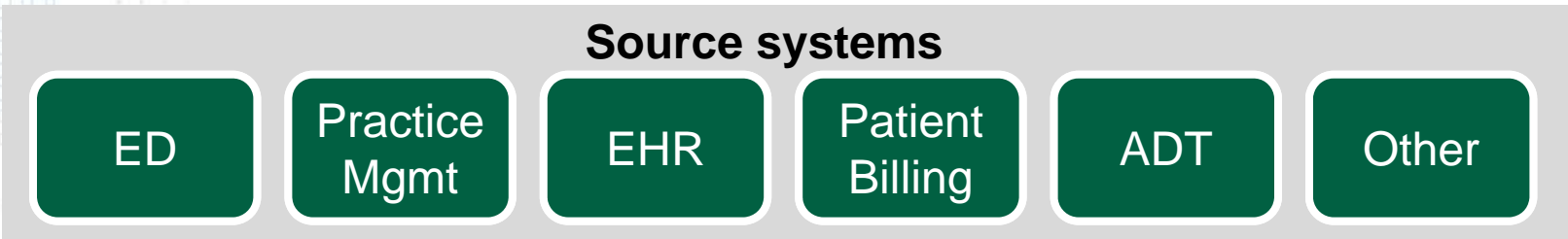
Keeping It Clean:
The Role of Data Governance

Medicare Shared Savings Pilot

Partnership for Patients

Population Health

Quality Metrics

Cost & Margin

Growth

Source Systems

ED

Practice Mgmt

EHR

Patient Billing

ADT

Other
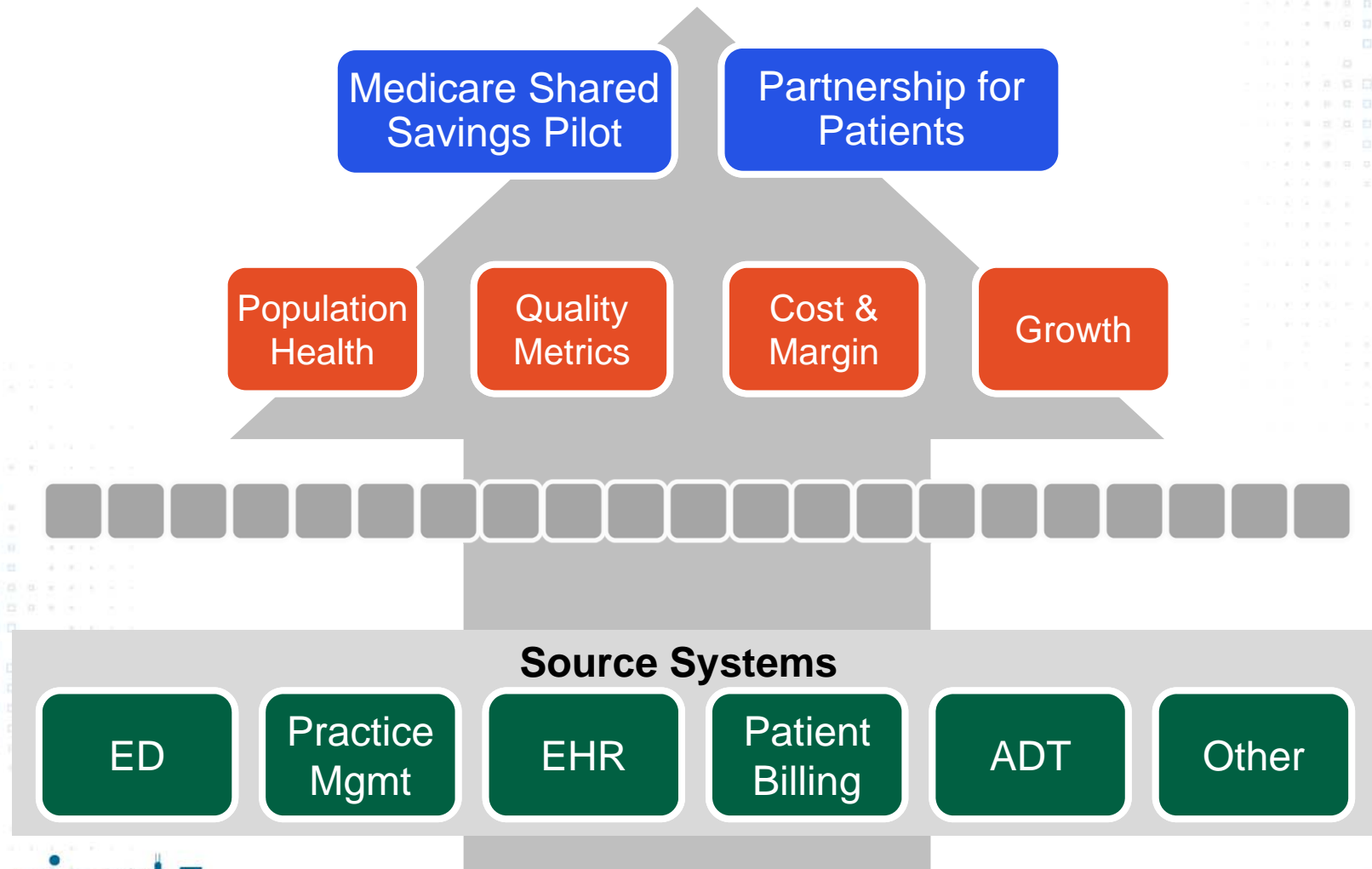
What Can Happen without Data Governance?

Role of Terminologies in Clinical Settings. National Center for Biomedical Ontology Developer Conference, July 25, 2008. Downloaded from web 5/15/2013.

Think Fast!

Role of Terminologies in Clinical Settings. National Center for Biomedical Ontology Developer Conference, July 25, 2008. Downloaded from web 5/15/2013.
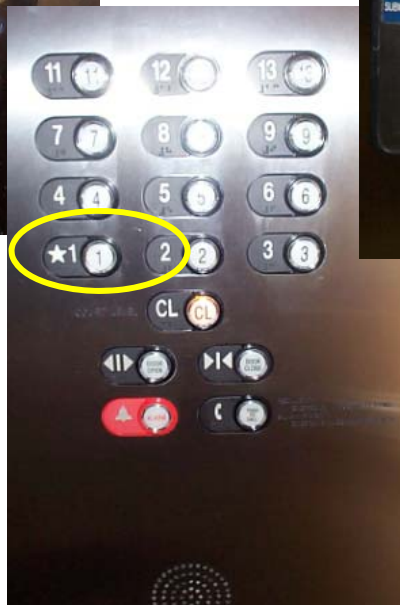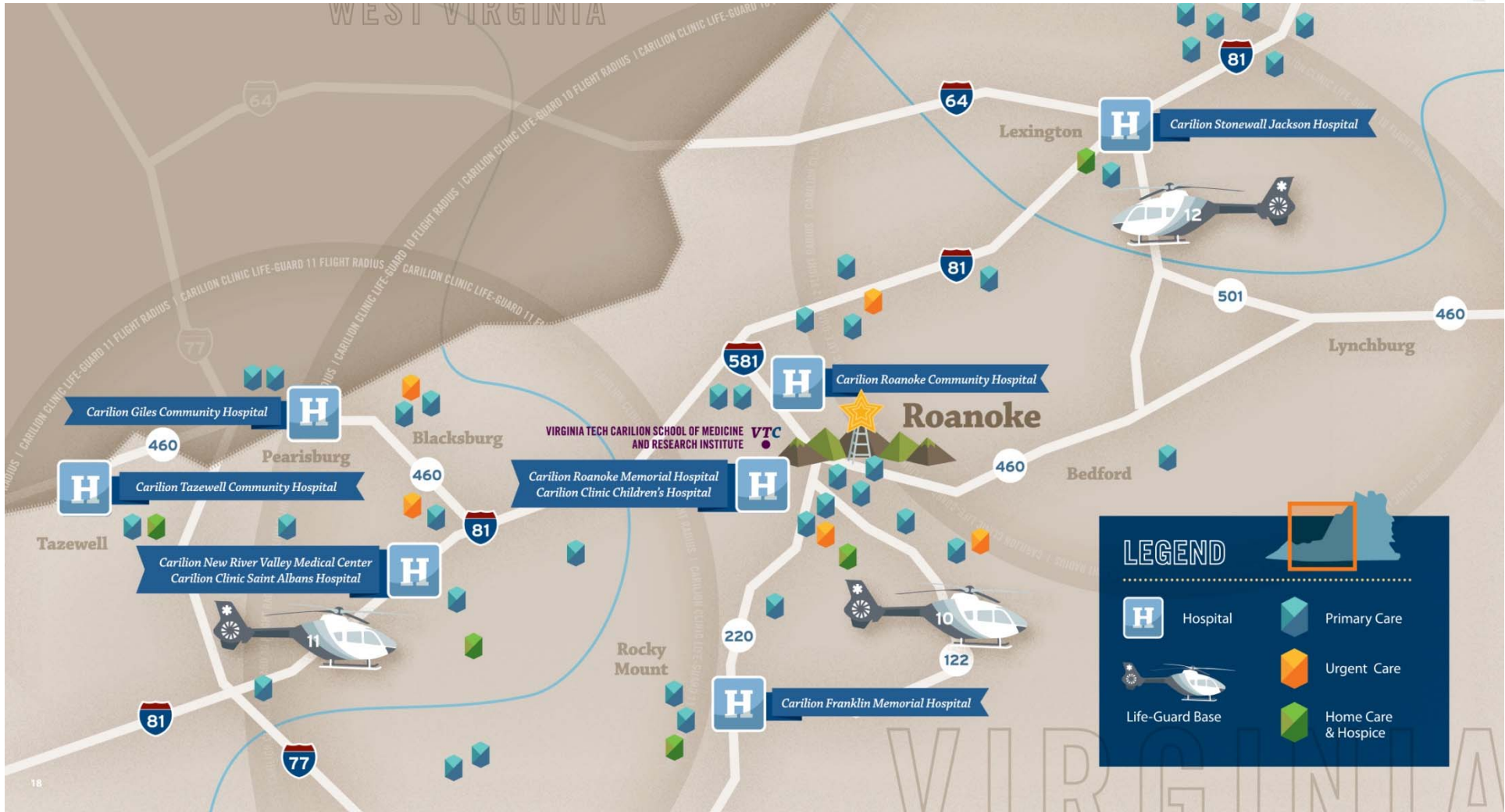
Carilion Clinic

Carilion Clinic

- Headquarters in Roanoke, Va.
- Multispecialty physician group of 750+ providers
- Largest employer in Virginia west of Richmond
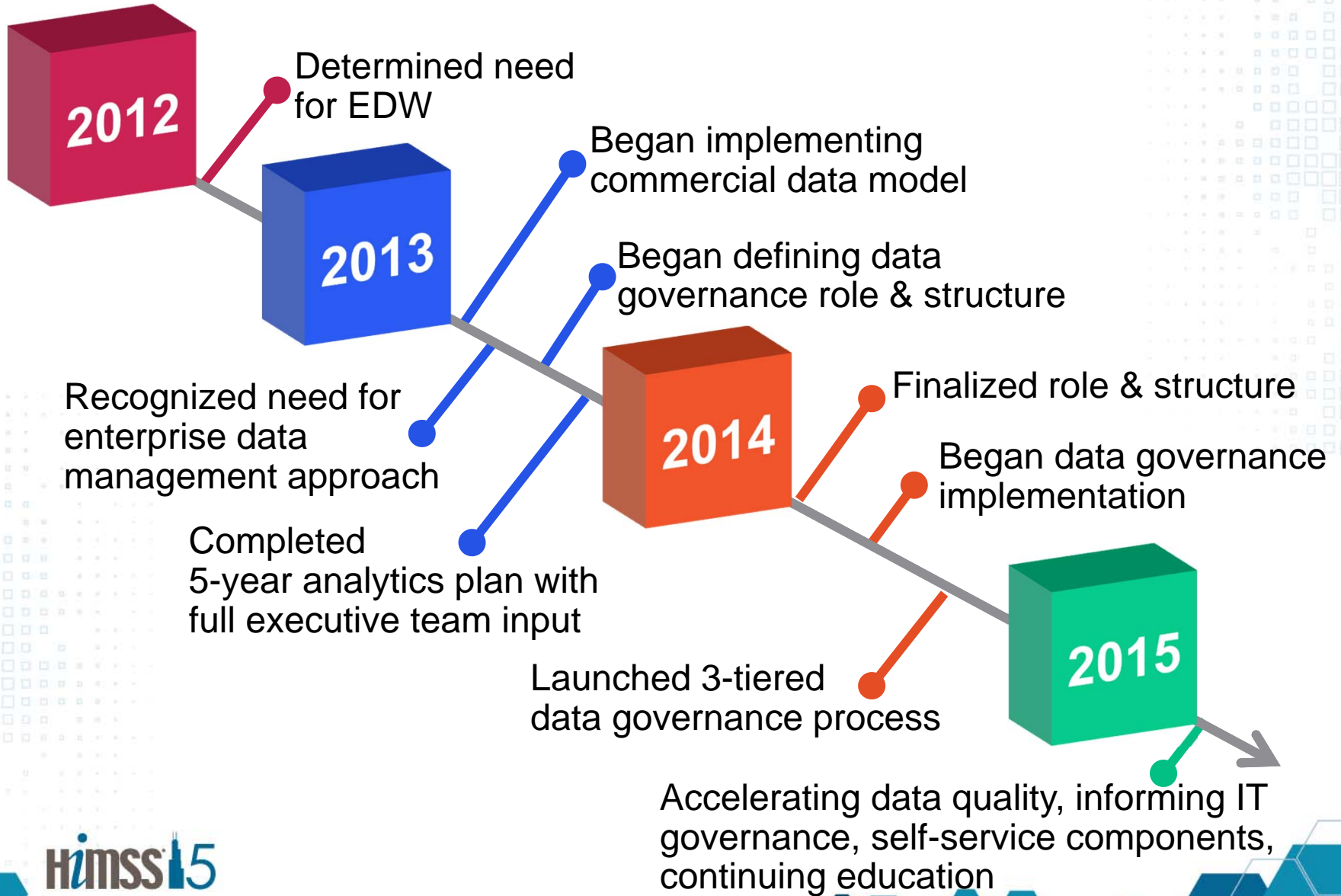- 7 hospitals include Carilion Roanoke Memorial Hospital, the third-largest in Virginia (703 beds)
- Emergency Department ranks among the nation's busiest (top 15% - 182,900 visits)
- Only Level 1 Trauma Center serving southwest Virginia (CRMH)
- $1.4 billion net revenue
- Serving approximately 1 million population
- Not-for-profit, safety net provider

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Carilion Clinic's Journey to Robust Data Governance

2012

Determined need for EDW

2013

Began implementing commercial data model

Began defining data governance role & structure

Recognized need for enterprise data management approach

2014

Finalized role & structure

Began data governance implementation

Completed 5-year analytics plan with full executive team input

Launched 3-tiered data governance process

2015

Accelerating data quality, informing IT governance, self-service components, continuing education

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Carilion Clinic's Data Governance Program Objectives

Data Governance

- Build infrastructure, technology, and supporting organization
- Define processes and business rules
- Develop common, standard data domain definitions
- Develop practices and standards
- Monitor and improve data quality

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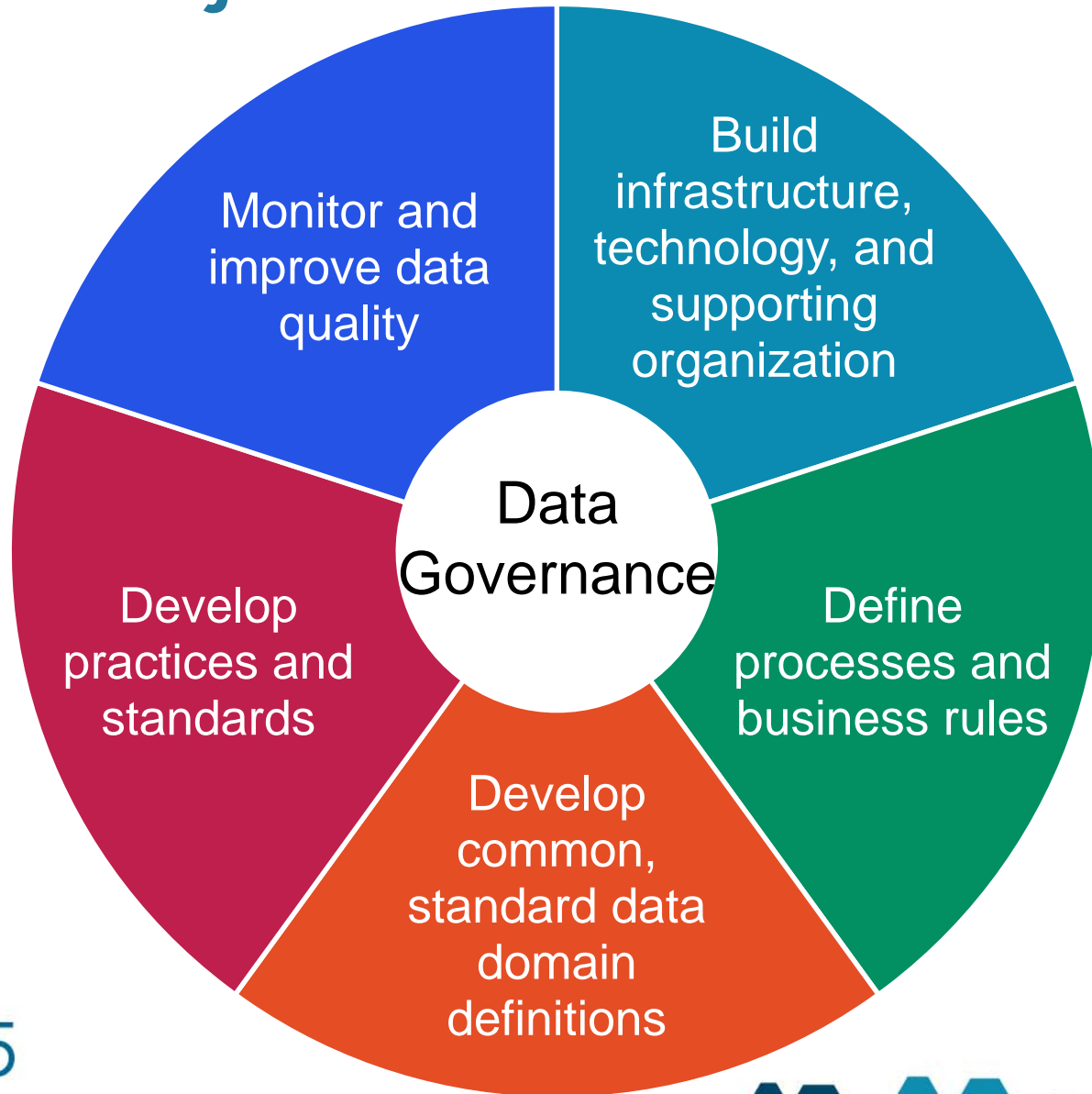
Initial Focus of Data Governance

Information Lifecycle Management

Risk Management

Data Quality

Security, Privacy, Compliance

Stewardship

Metadata Management

Organizational Awareness

Data Governance

Audit & Reporting

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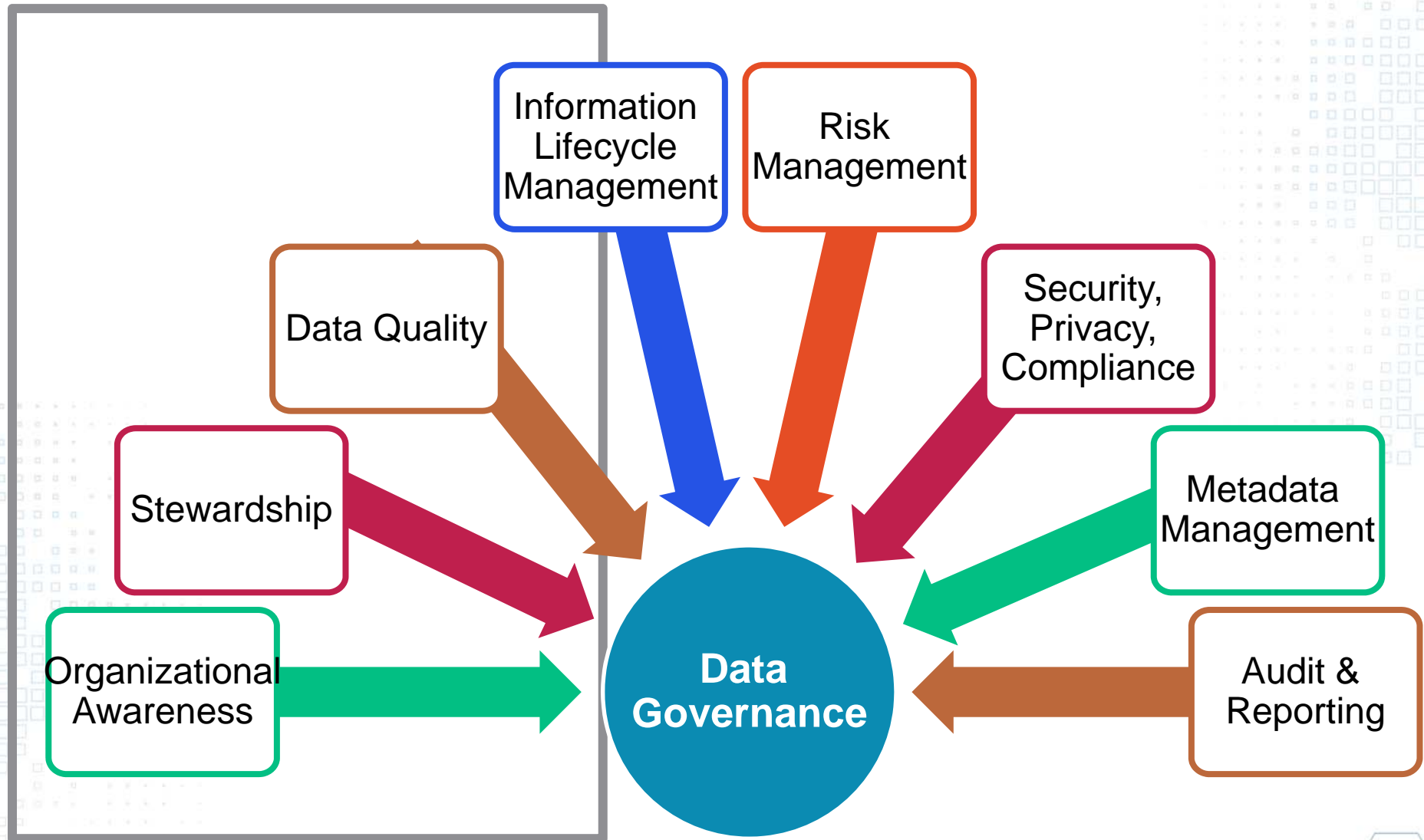
Data Quality Is a Core Component of Data Governance

How effectively does the data support the transactions and decisions needed to meet an organization's strategic goals and objectives?
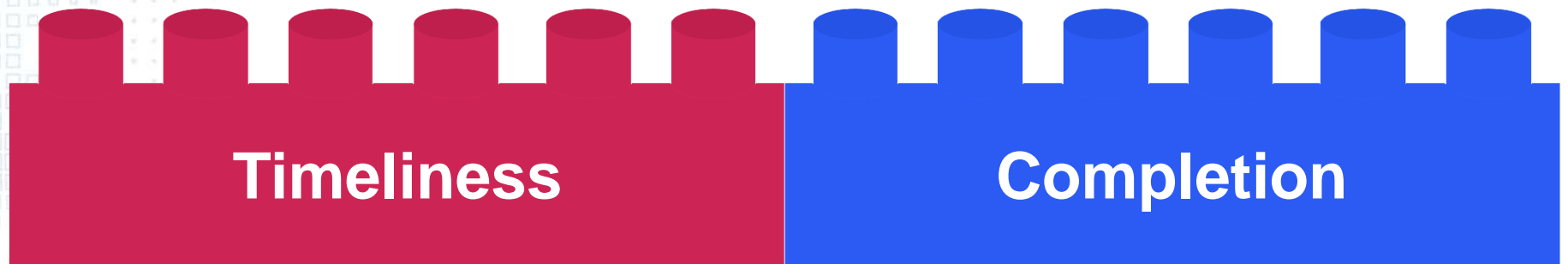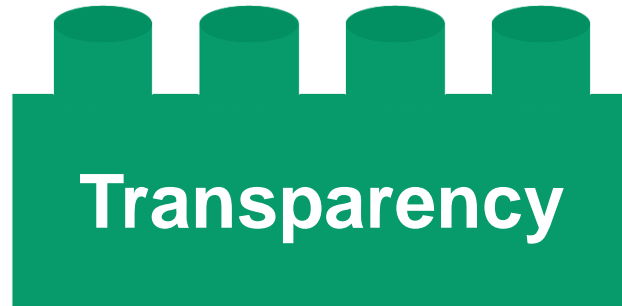
Quality needed varies by information system or business unit

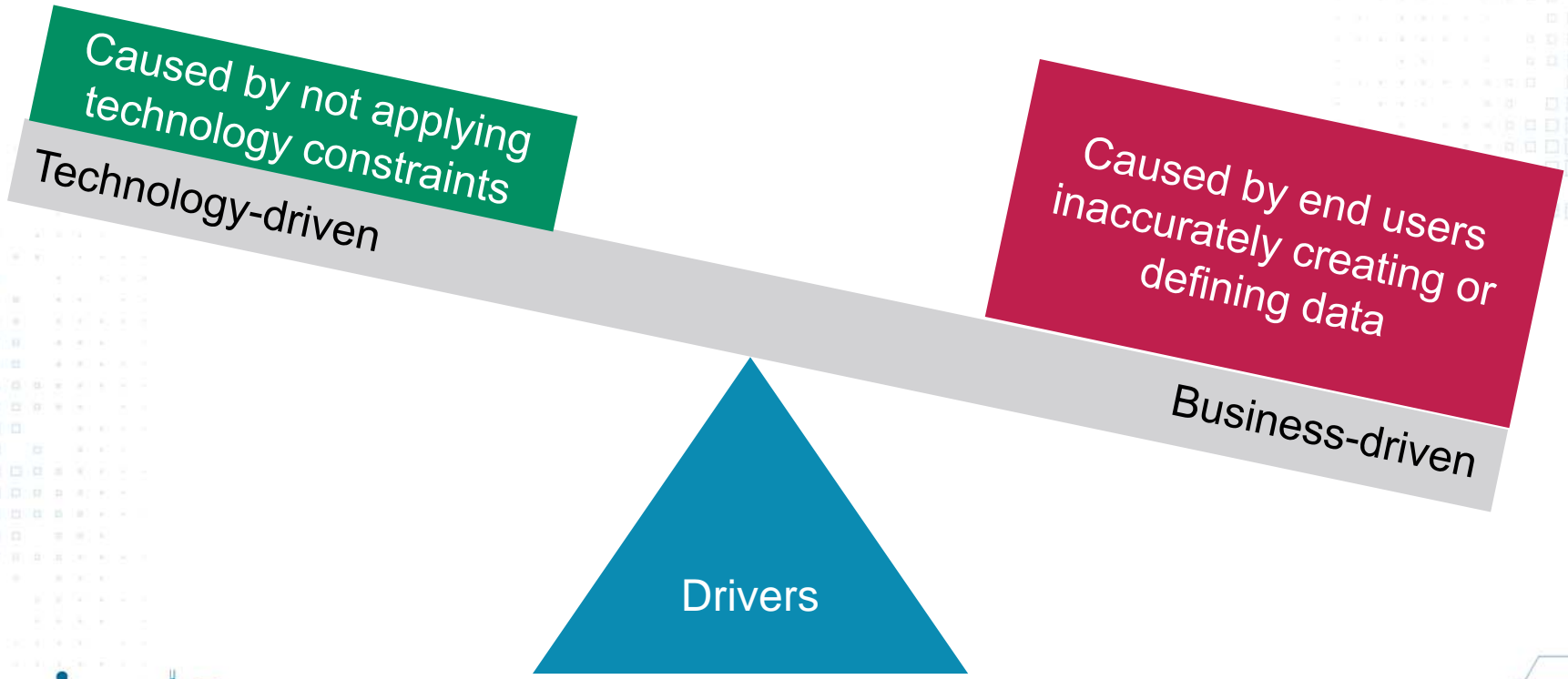The quality bar varies with the intended purpose

Data quality results from adherence to the definition of data quality criteria from both a business process and data design perspective

The Building Blocks of Data Quality

Transparency

Accuracy

Consistency

Timeliness

Completion

Two Drivers for Bad Data Quality

Caused by not applying technology constraints

Technology-driven

Caused by end users inaccurately creating or defining data

Business-driven

Drivers

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Technology-Driven Examples

Lack of database or data integration constraints	
Invalid Data	By not applying constraints, e.g., alphanumeric data is allowed in a numeric data field (or column)
Missing Data	By not applying key constraints in the database, e.g., allowing a required field to be left null

Business-Driven Examples

End user creation or definition	
Inaccurate Data	By inaccurately creating a record for "Ms. Anthony Jones," rather than "Mr. Anthony Jones," bad data quality is created. Inaccurate data also includes the "duplicate data" phenomenon. For example, an organization has a customer record for both "Anthony Jones" and Tony Jones," both the same person.
Inconsistent Definitions	By having disparate views on what the definition of bad data quality is, perceived bad quality is created.

How Carilion Clinic Identified the Right Data Governance Model

Recommendations and conclusions for the initial data governance model

- Culture
  Amount of change required
- People
  Efficient, inclusive, collaborative
- Skills
  Trained resources
- Guiding Principles
  Data as a corporate asset & differentiator

- Market
- Tools
- Process

Data governance models for comparable healthcare organizations and other cross-industry standard models
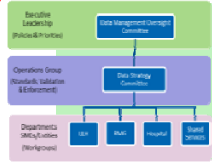
Organizational Characteristics

Best Practices

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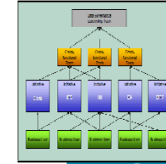# Data Governance Model Options — and Carilion Clinic Decision
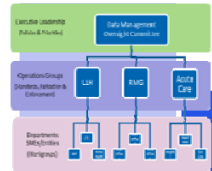
Federated

- Centralized executive leadership

- Operations Group – by service line/function

- SMEs represent service line/function
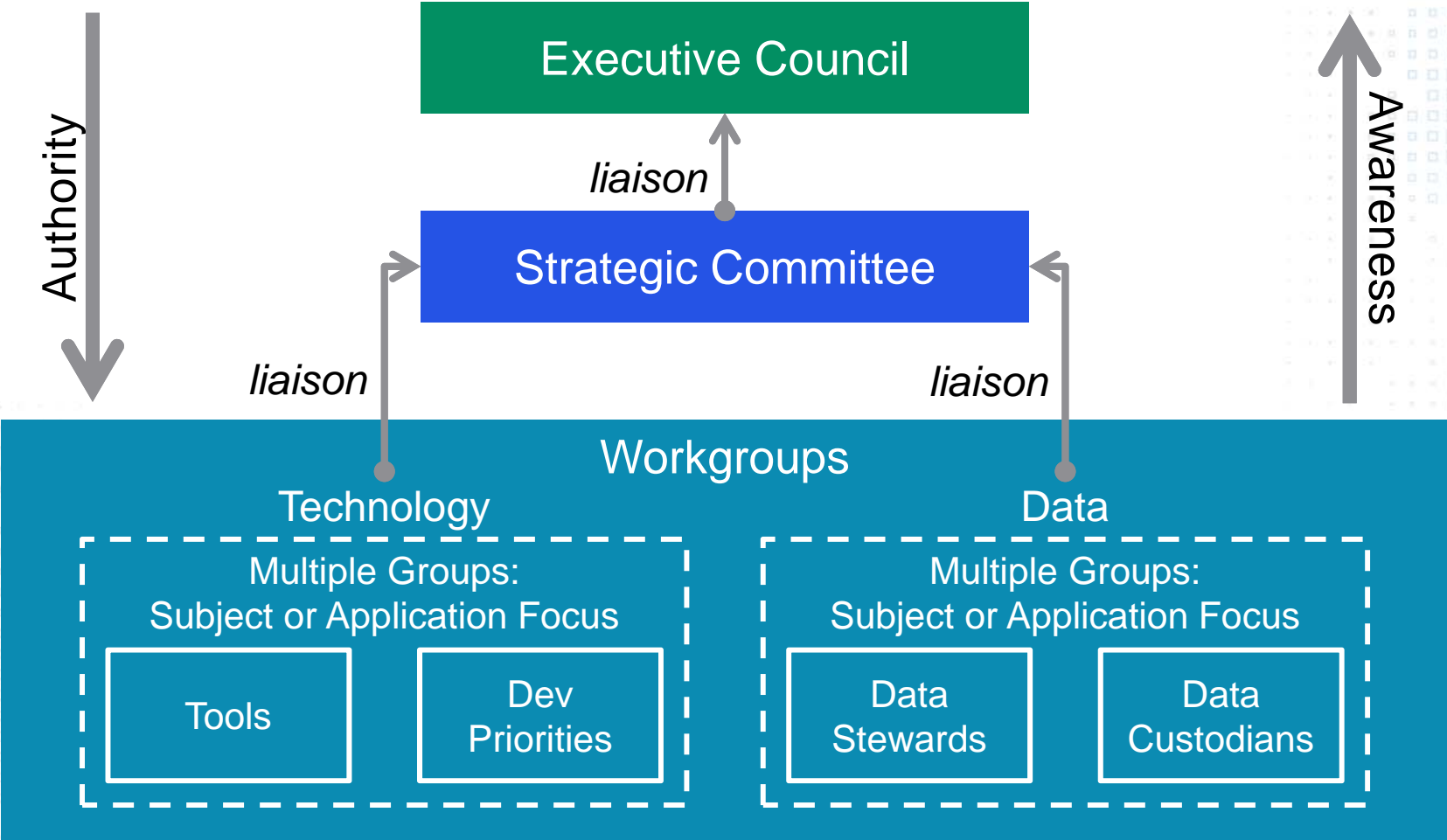
Centralized

- Centralized executive leadership

- Centralized Operations Group - representing organization

- SMEs represent service line/function AND organization

Hybrid

- Centralized executive leadership

- Temporary project-based operations group

- Temporary project-based working groups (SMEs)

- Excludes departments that are not common across all entities

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Data Governance at Carilion Clinic

Authority

Awareness

Executive Council

liaison

Strategic Committee

liaison

liaison

Workgroups

Technology

Data

Multiple Groups:
Subject or Application Focus

Tools

Dev Priorities

Multiple Groups:
Subject or Application Focus

Data Stewards

Data Custodians

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Executive Council Roles & Responsibilities

Policies and priorities

Representation		Tasks/Focus
• CFO • CSO • CNO • CMIO • CIO • COO	• VP Physician • EVP Administration • SVP Quality • VP HR	• Ensure C-level support • Ensure health analytics and data governance activities and direction are in alignment with corporate values • Provide funding and resource support • Oversee Strategic Committee

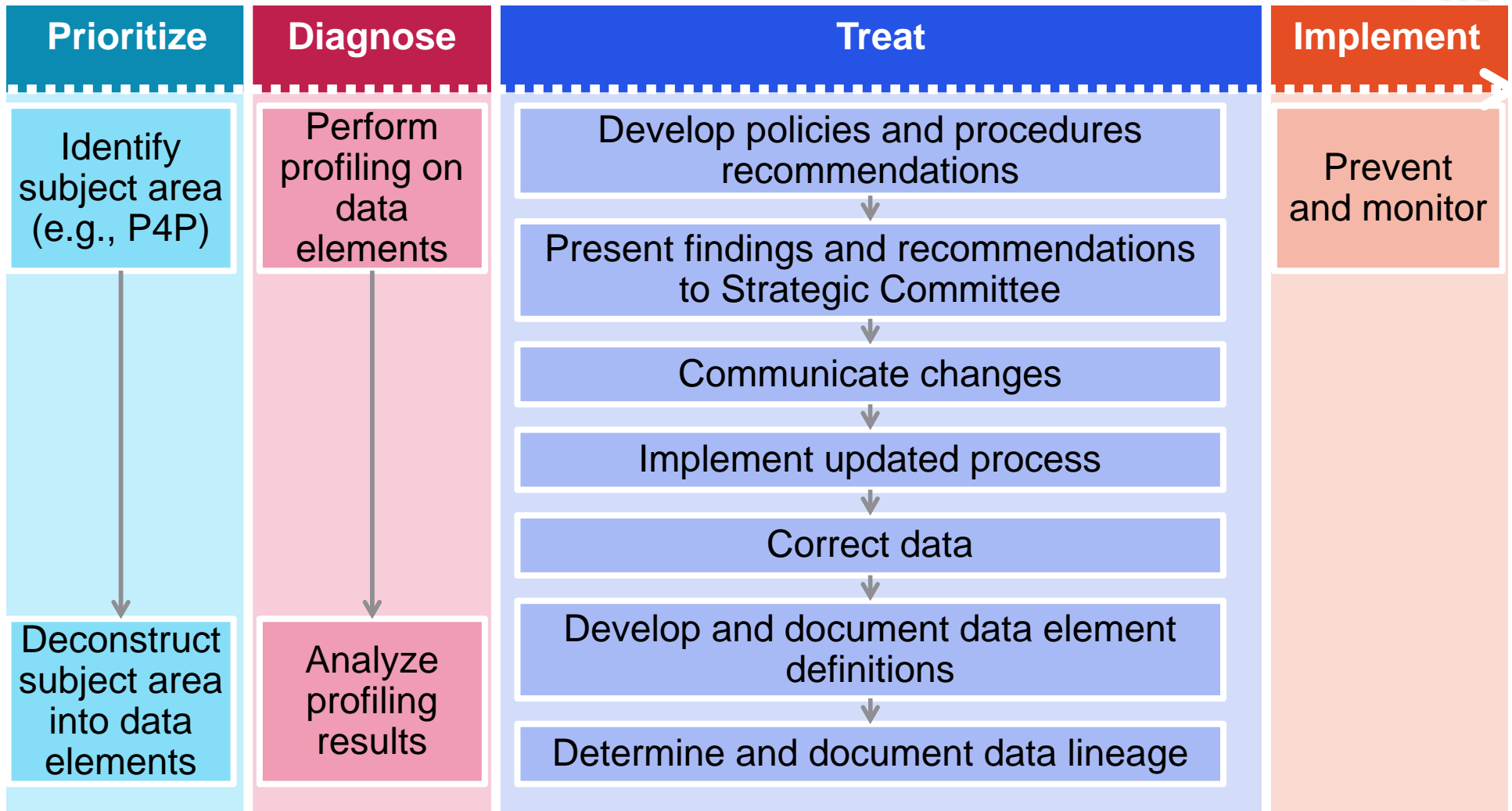# Strategic Committee Roles & Responsibilities

Standards and enforcement

Representation	Tasks/Focus
VPs and Senior Directors representing: • Clinical • Operations • HR • Finance • IT • Strategic development • Analytics • Research • Compliance • Health plans • Physician groups • Decision support • Revenue cycle	• Fill role as data domain "owners" • Define representation from across organization • Set data governance vision, program design, and priorities within mandate of DGEC • Review work group results and policy and process recommendations • Make decisions on recommendations from work groups

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Work Groups Roles & Responsibilities

Data stewards and custodians

Representation	Tasks/Focus
As assigned	• Apply standards and quality controls • Identify ownership of data elements • Define data elements properly • Develop data quality rules and processes • Bring issues, requirements, recommendations or other needs into data governance process

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Carilion Data Governance Process Flow

Prioritize	Diagnose	Treat	Implement
Identify subject area (e.g., P4P)	Perform profiling on data elements	Develop policies and procedures recommendations	Prevent and monitor
		Present findings and recommendations to Strategic Committee	
		Communicate changes	
		Implement updated process	
		Correct data	
Deconstruct subject area into data elements	Analyze profiling results	Develop and document data element definitions	
		Determine and document data lineage	

Conclusion – Benefits of Data Governance for Carilion

- Recognize data is an asset
- Realize that data quality is paramount to organizational success
- Establish a framework for decision-making
- Talk the same language – drive standards
- Improve efficiency in data management
    - Recognize errors earlier
    - Stop propagation of errors
    - Decrease redundancy
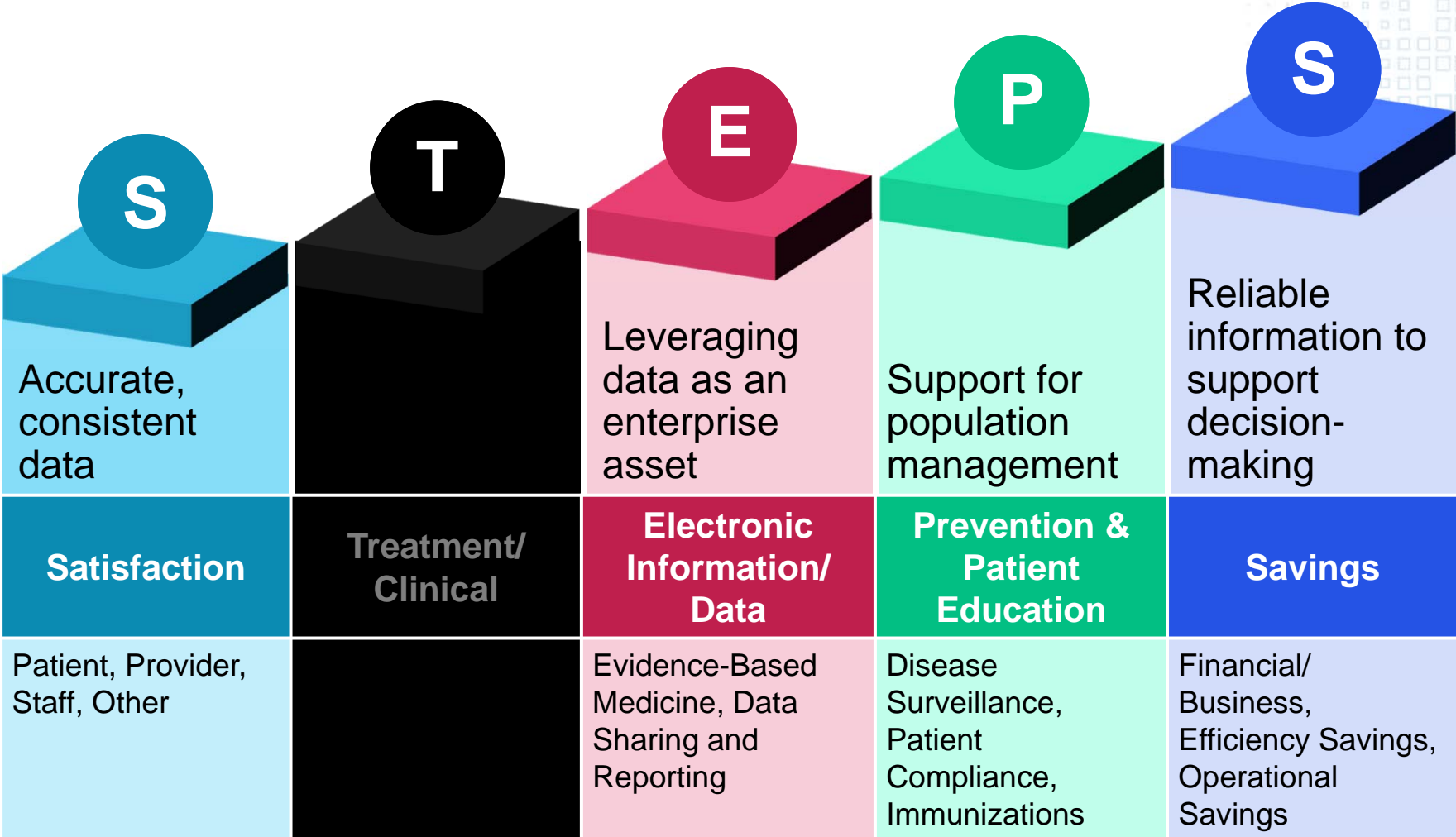- Springboard to other processes, e.g., IT governance, business analysis

Lessons Learned

- "Trust but verify" – data may not exist in source systems as expected
- Engage senior executives in determining the need, structure and process for data governance
- Communicate early and often the importance of data to the organization and the role data governance plays
- Include the broadest possible level of participation across all stakeholder groups
- Focus initial efforts on a set of data that matters to organizational success (e.g., metrics for risk-based contracts)
- "Never give up, never surrender!"

Benefits Realized for the Value of Health IT

S Satisfaction	**T** Treatment/ Clinical	**E** Electronic Information/ Data	**P** Prevention & Patient Education	**S** Savings
Accurate, consistent data		Leveraging data as an enterprise asset	Support for population management	Reliable information to support decision-making
Patient, Provider, Staff, Other		Evidence-Based Medicine, Data Sharing and Reporting	Disease Surveillance, Patient Compliance, Immunizations	Financial/ Business, Efficiency Savings, Operational Savings

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Questions

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