



# Workshop 5 – MCC Clinical Trial Performance Metrics: Improve Timelines, Cost and Quality to Enhance CRO and Sponsor Performance in Clinical Outsourcing Collaborations

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STRATEGIES*

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IIR Partnerships in Clinical Trials ♦ March 30, 2011 ♦ Phoenix , AZ



<http://www.metricschampion.org>

Part I: Metrics Champion Consortium (MCC) Clinical Trial Performance Metrics Initiative Update

- MCC CTPM version 1.0
- MCC Quality Scoring Tool User Groups
- MCC Member Blinded Database Project

Part II: Cognizant – Implementing metrics / balanced scorecard

*BREAK*

Part III: AstraZeneca Case Study

Part IV: Participant Breakout Group Discussions

Part V: Wrap -Up



# Part I: Metrics Champion Consortium (MCC) Clinical Trial Performance Metrics Initiative Update

Guy Mascaro  
President  
**MCC**

Dave Zuckerman  
President  
**CUSTOMIZED IMPROVEMENT  
STRATEGIES**



The Metrics Champion Consortium (MCC) is a not-for-profit organization comprised of biotechnology, pharmaceutical, medical device and service provider organizations who work collaboratively to develop and implement *standardized performance metrics* with the intent of *jointly improving* the efficiency and effectiveness of managing and tracking resources needed to successfully run clinical trials.

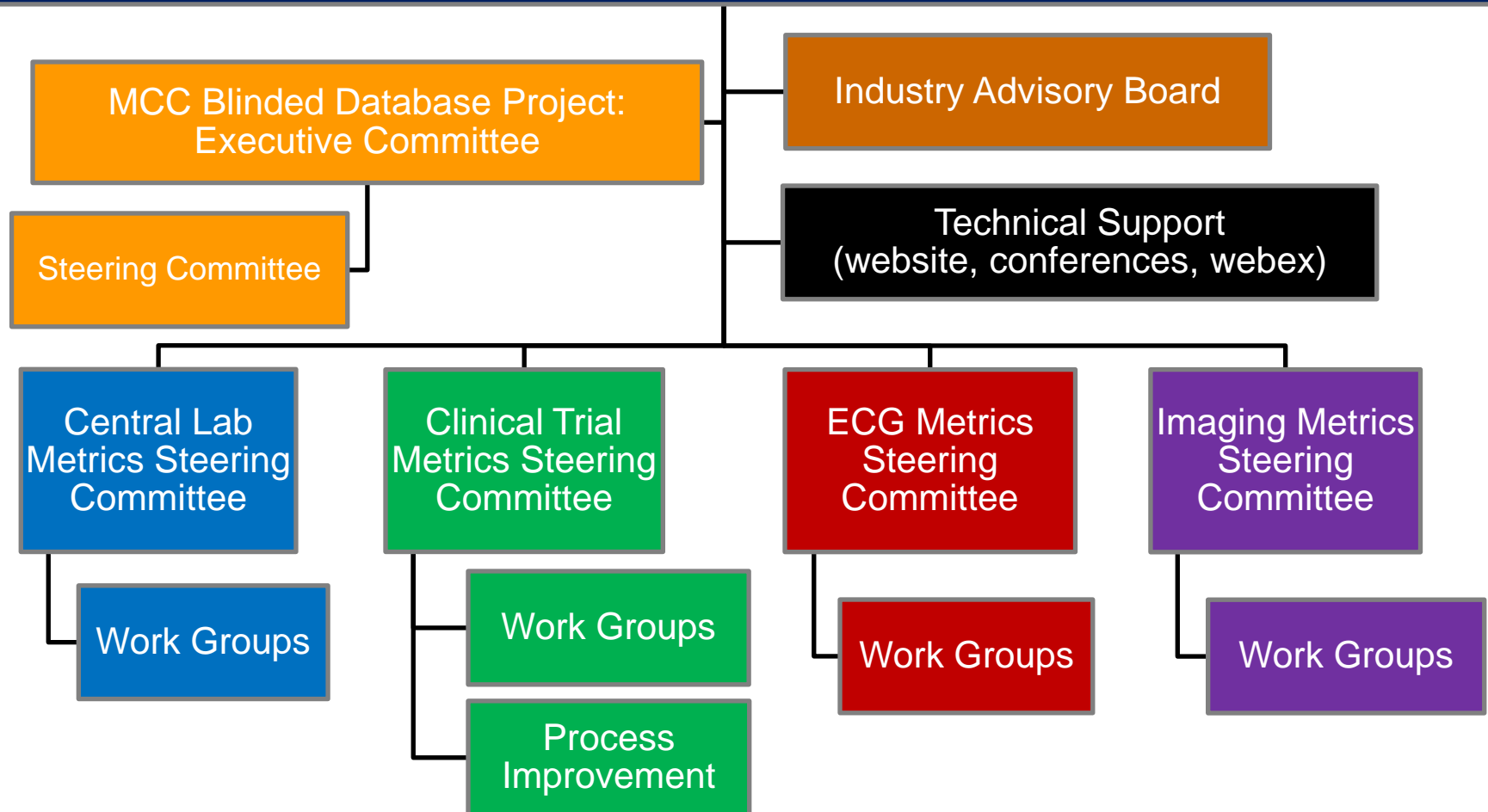
- Establish defined sets of standard performance metrics that facilitate the management of clinical trials
- Encourage the use of the standard metrics by sponsors and service providers to identify areas for improvement
- Facilitate the sharing of metric data among MCC member organizations (through a blinded database)
- Provide a common basis for constructive discussion between sponsor and service providers that will lead to a common understanding for the need to improve performance



# MCC Member Organizations

<b>Abbott Laboratories</b>	<b>ERT</b>	<b>Merck</b>
<b>Actelion Pharma</b>	<b>Esoterix Clinical Trial Services</b>	<b>New England Research Institute</b>
<b>Acorda Therapeutics</b>	<b>Eurofins Medinet</b>	<b>Novartis</b>
<b>AG Mednet</b>	<b>ExecuPharm</b>	<b>Paragon Biomedical</b>
<b>AstraZeneca</b>	<b>GE Healthcare</b>	<b>Parexel / Perceptive Informatics</b>
<b>BARC Global Central Lab</b>	<b>Genentech</b>	<b>Pfizer</b>
<b>BioClinica</b>	<b>Genzyme</b>	<b>PharmaNet</b>
<b>Biogen Idec</b>	<b>i3</b>	<b>PPD</b>
<b>Biomedical Systems</b>	<b>iCardiac Technologies</b>	<b>PRA International</b>
<b>CardiaBase</b>	<b>ICON</b>	<b>QD-Quality &amp; Training Solutions</b>
<b>Cardio Analytics</b>	<b>Imaging Endpoints</b>	<b>Quest Diagnostics</b>
<b>Cardiocre</b>	<b>INC Research</b>	<b>Quintiles</b>
<b>Cerexa</b>	<b>Incyte</b>	<b>RadMD</b>
<b>CHDI</b>	<b>Intrinsic Imaging</b>	<b>Regeneron</b>
<b>Clinical Reference Laboratory</b>	<b>Ixico</b>	<b>Research Point</b>
<b>Clinsys Clinical Research</b>	<b>Lilly</b>	<b>Roche</b>
<b>Cognizant</b>	<b>M2S</b>	<b>Synarc</b>
<b>CoreLab Partners</b>	<b>Medidata Solutions</b>	<b>Virtual Scopics</b>
<b>Covance</b>	<b>Medtronic</b>	<b>WorldCare Clinical</b>
<b>Duke Clinical Research Institute</b>		

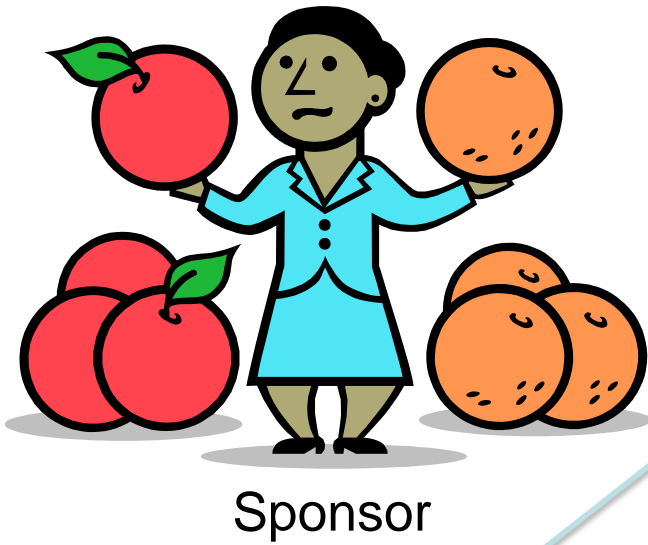
## Board of Directors



# Lack of Standardized Performance Metrics Creates Challenges

Provider 1

Provider 2



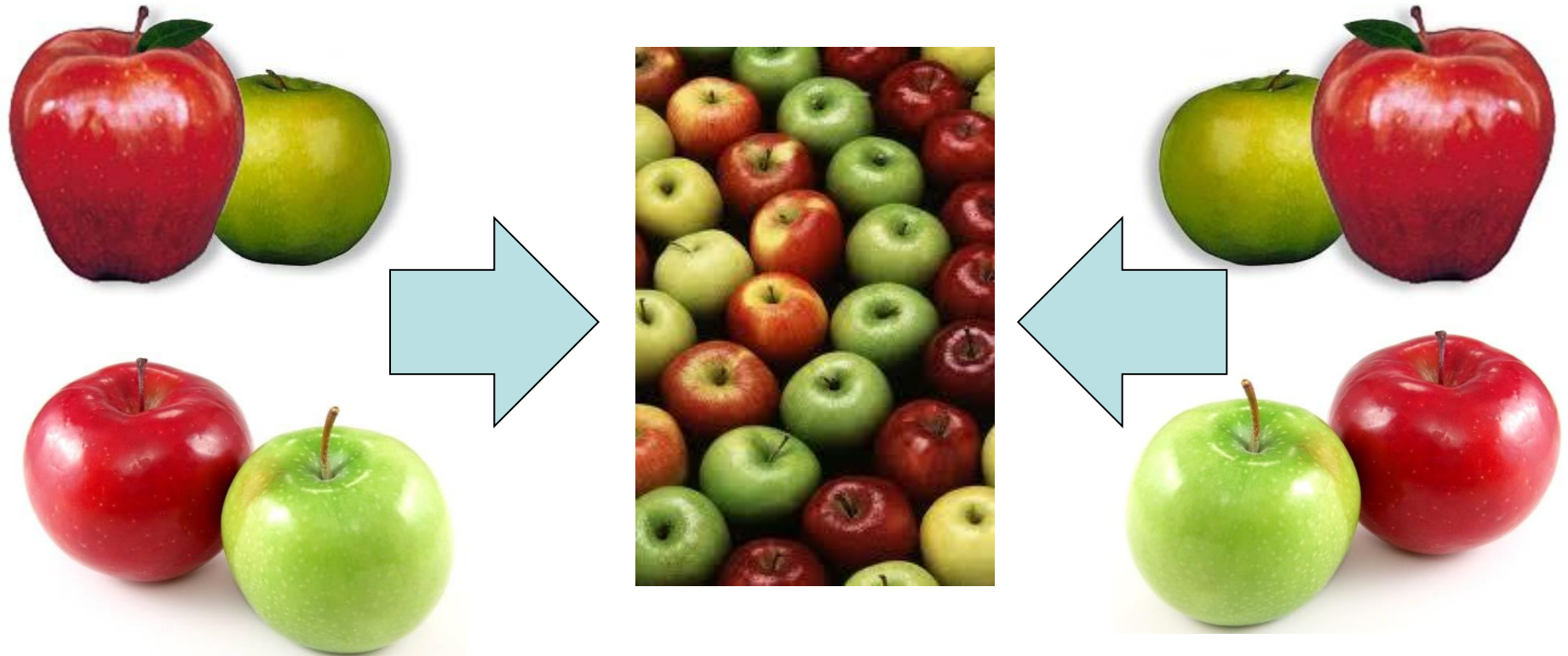
Service Provider

Sponsor A

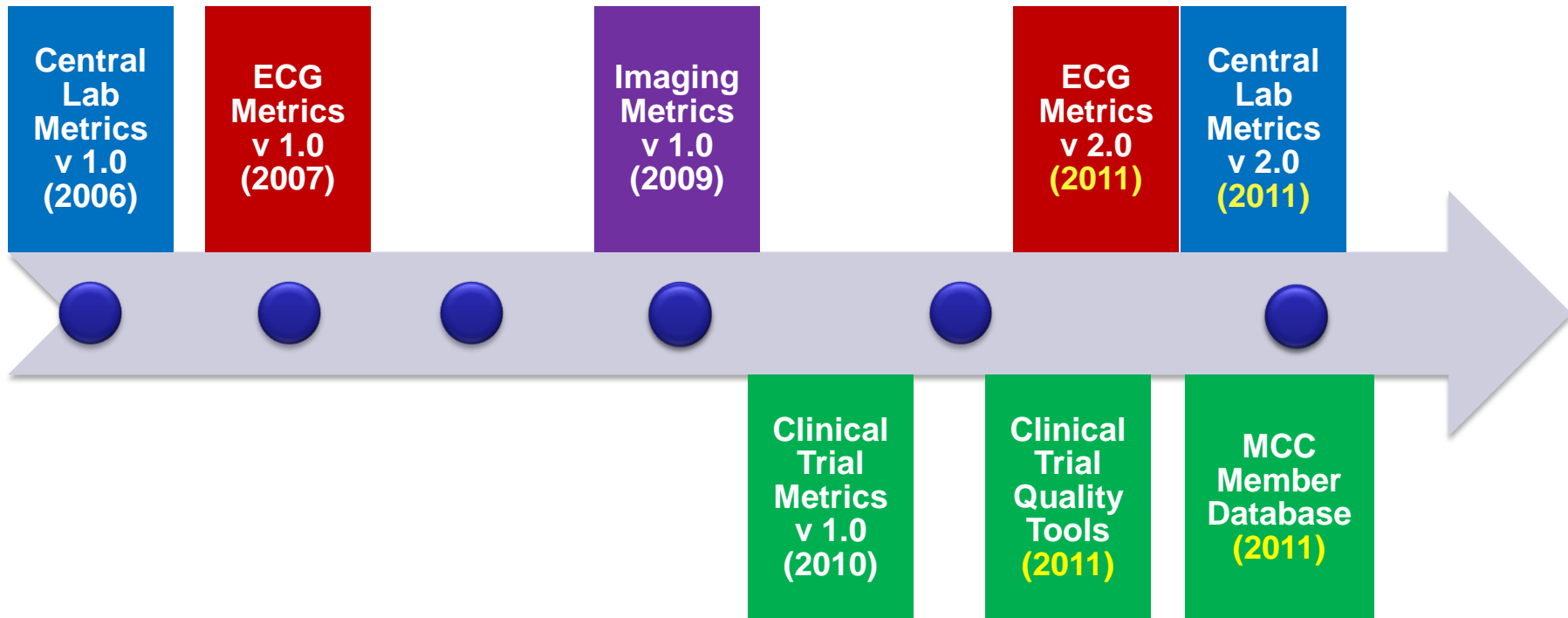
Sponsor B



Mutually beneficial standardized performance metrics can be achieved and fruitful for all parties



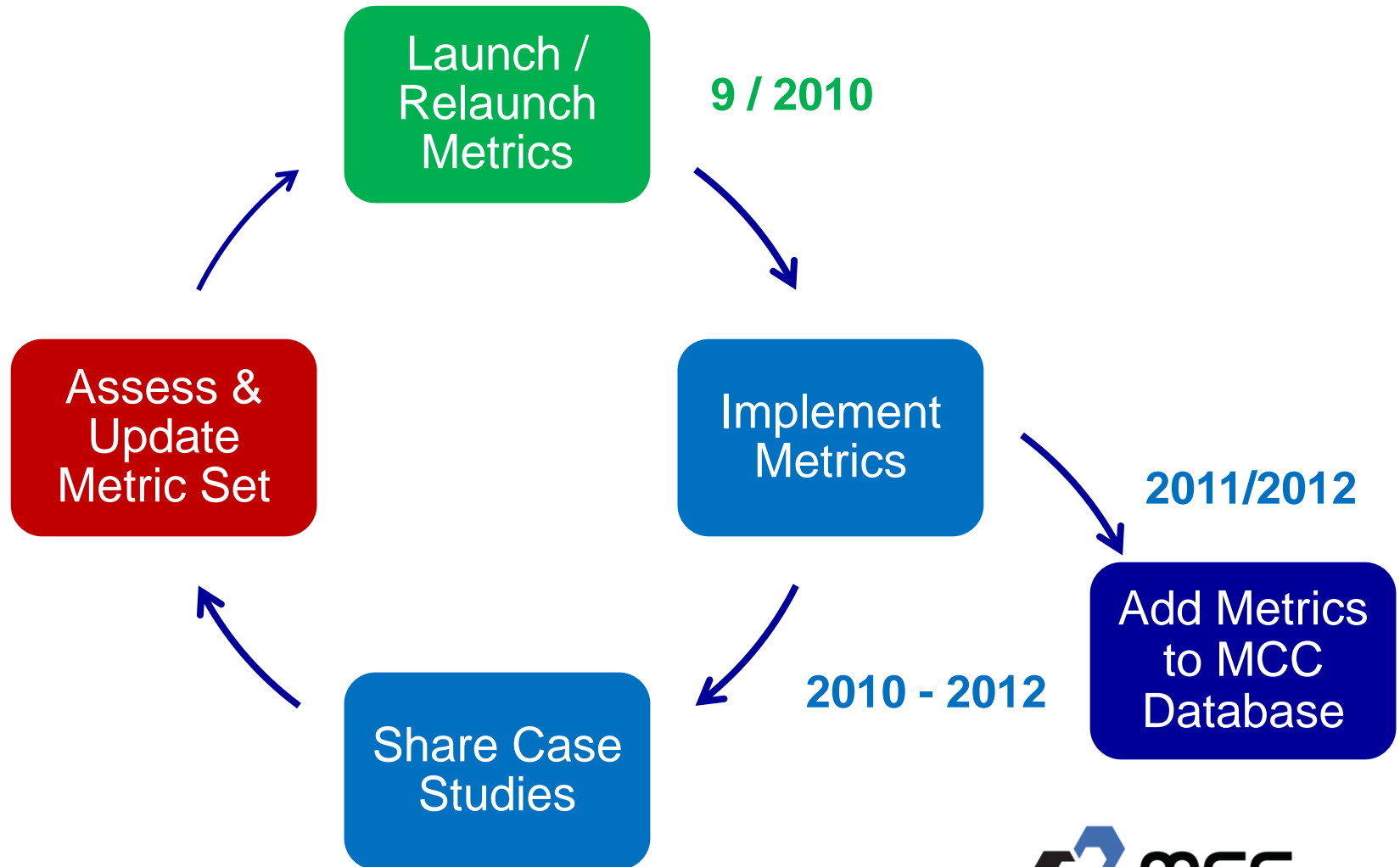
# Metrics Development Timeline

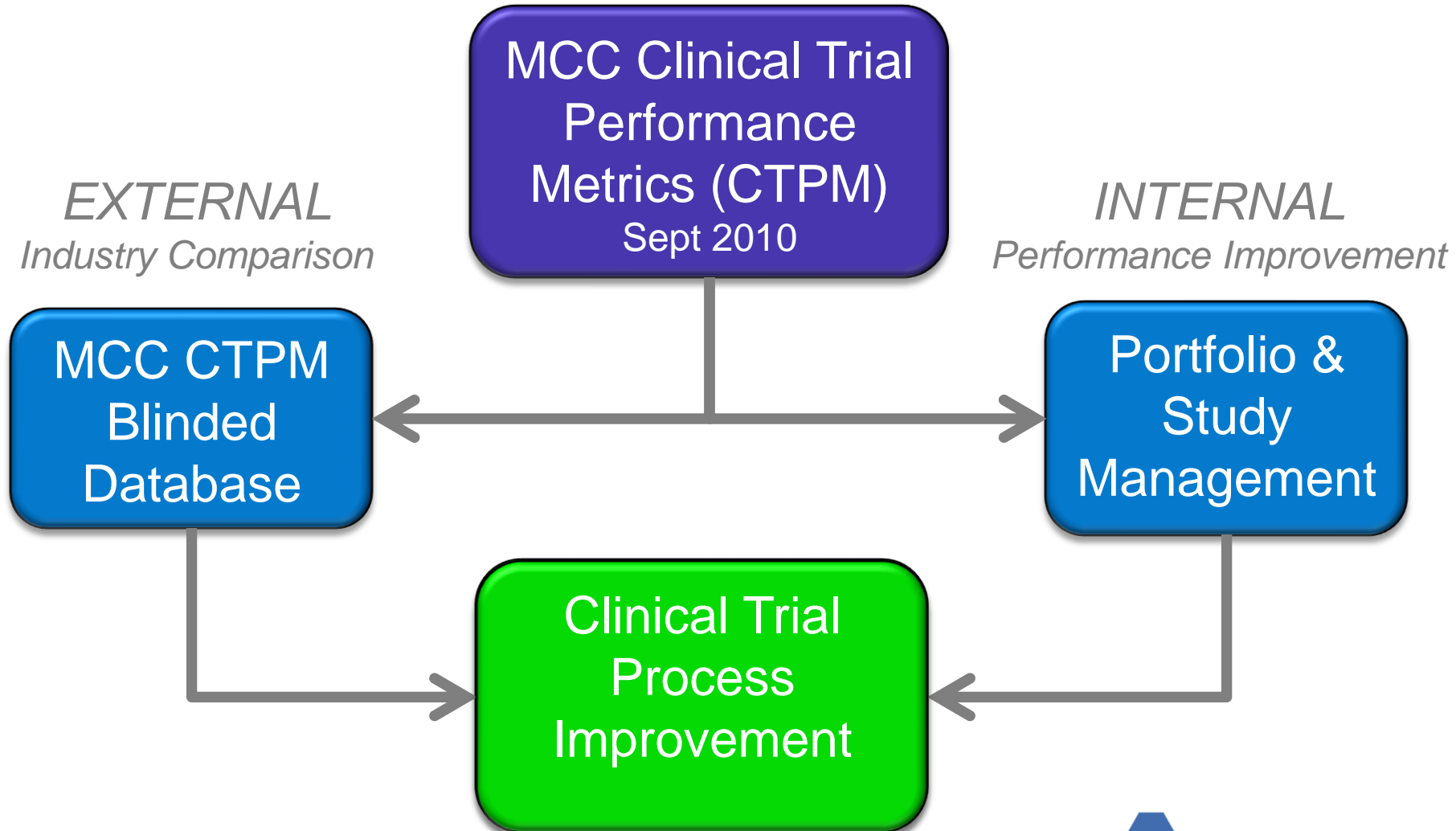




**CLINICAL TRIAL**  
metrics champion

# *Clinical Trial Performance Metrics Initiative*





# MCC Members Can Access Metrics on the MCC Website

Metrics Champion Consortium

Welcome MCC Administrator

**Member Tab**

**Log onto MCC website**

**Metrics files**

**Wiki Area**

**MCC Performance Metrics**

**Version 1.0**

Link to launch session **Recording & Presentation (Metrics spreadsheet) (how to use spreadsheet) (process maps)**  
 Special Note: Please contact Linda Sullivan for additional information about Metrics 3, 5 and E4. [Click here to sign up for the implementation WG](#)

**LABORATORY metrics champion** Version 1.1  
 (Information packet) (spreadsheet with budget reconciliation worksheet)

**ECG metrics champion** Version 1.1  
 (Information packet) (pdf) (spreadsheet) (spreadsheet with updates highlighted) (summary)

**IMAGING metrics champion** Version 1.0  
 (pdf) (spreadsheet) (summary) (exploratory variability metrics)

**MCC Member Case Studies**

**MCC Lab Metrics** → Preparation of Version 2.0  
 → Input to Quality Tools

**MCC ECG Metrics** → Preparation of Version 2.0  
 → Input to Quality Tools

**MCC Imaging Metrics** → Implementation Support of Version 1.0  
 → Input to Quality Tools

**MCC Clinical Trial Metrics** → Implementation Support of Version 1.0  
 → Quality Tool Pilots  
 → Ongoing Process Improvement WG meetings

<http://www.metricschampion.org>



# EXAMPLE: MCC Clinical Trial Performance Metrics v 1.0


Metric #	Metric Type	Metric Title	Category	Metric Indicator	Part of Study
8	CT	Final Approved Protocol to Final Approved eCRF - EDC	CRF Design	LAGGING Indicator	Study Startup
		<b>Definition (see Wiki for detailed definitions)</b>	<b>Formula / Example</b>	<b>Reporting Detail</b>	
		Number of calendar days from <i>final approved protocol</i> to final approved eCRF.  <i>See MCC Wiki for definitions</i>	Formula: X-Y=# calendar days X = date eCRF final Y= date protocol final  Example: Final Protocol Date = 01Jan2008; Actual approval of eCRF is 26Jan 2008 [26 Jan -1 Jan] = 25 calendar days	Study / Therapeutic Area / Portfolio levels	
				<b>Unit of Measure</b>	
				Calendar days	
		<b>Business Driver(s) / Benefit Statement</b>	<b>Additional Analysis on a "for cause" basis</b>	<b>Reporting Frequency</b>	<b>Threshold Target</b>
		This task is critical in starting the remaining Data Management tasks. For example, once the eCRF is approved, edit checks can be created, tested etc. Therefore, this is really the starting point for Data Management to begin. The completion of the eCRF should also be completed before PPFV	Additional analysis on a "for cause" basis: Delays in the timeline could be due to the # of eCRF pages, complexity of the study, # of review rounds, pending protocol amendment, lack of agreement/ specificity on design, too many people to provide feedback, very burdensome review process, or lack of clinical trial development experience. Shorter ....	Once	15 calendar days
		<b>Companion Metrics</b>	Need to develop e-CRF Quality metric		

New feature

New feature

New feature

This List



## Clinical Trial Initiative

MCC Home
Members
Central Lab Initiative
ECG Initiative
Clinical Trial Initiative
Imaging Initiative
Board of Directors
Industry Advisory Board
Admin
Site Actions

View All Site Content

**Documents**

- Steering Committee
- Biometrics WG
- Business Ops / Finance WG
- Clinical Ops WG
- Drug Supply WG
- Project Mgmt WG
- Quality Assurance WG
- Beta Metrics Feedback
- Process Improvement WG
- MCC Clinical Trial Performance Metrics Wiki

**Lists**

- Clinical Trial Initiative WG

**Discussions**

- Steering Committee Discussion Area
- WG Discussion Area

**Sites**

**People and Groups**

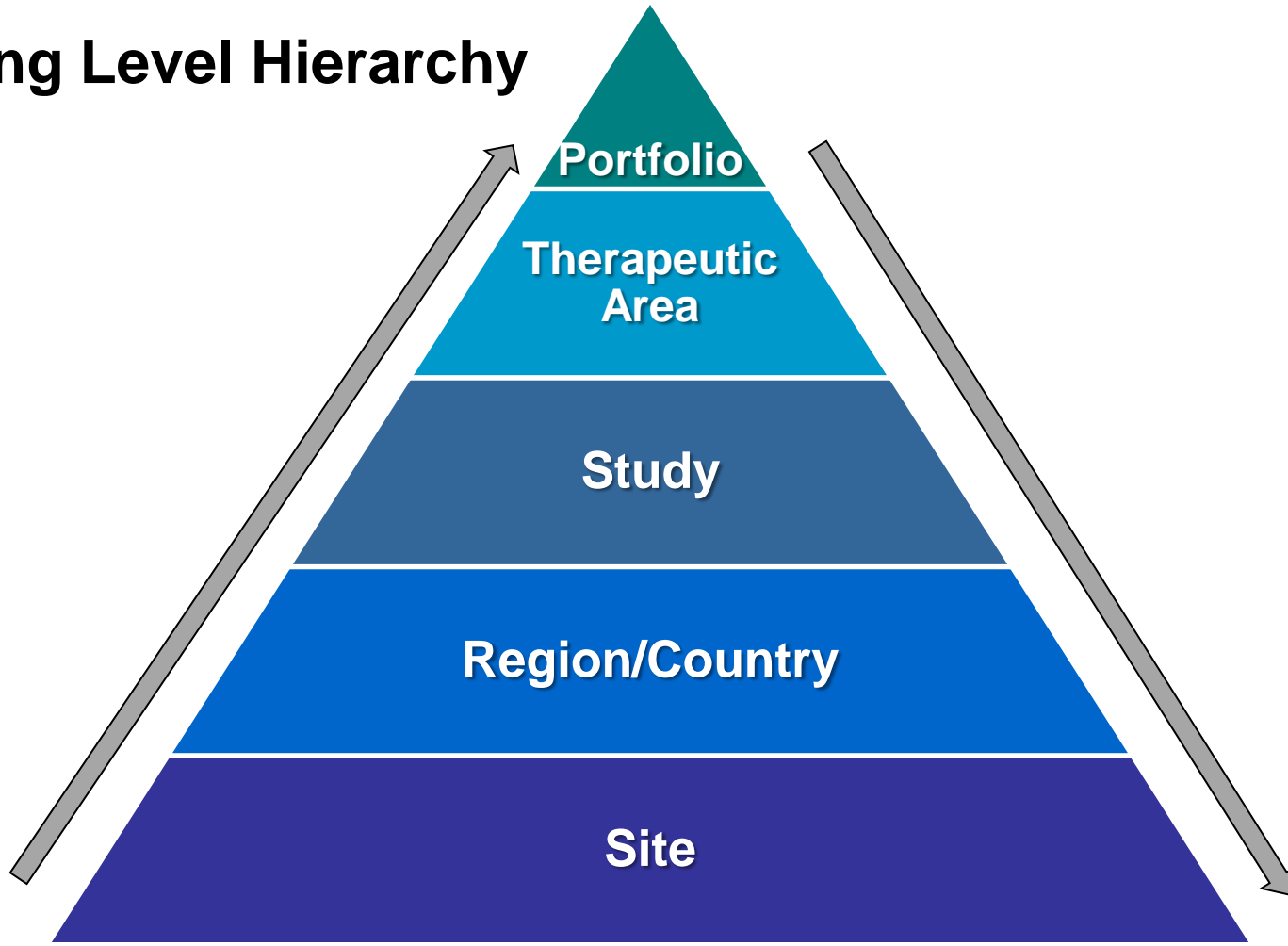
Metrics Champion Consortium > Clinical Trial Initiative > MCC Clinical Trial Performance Metrics Wiki

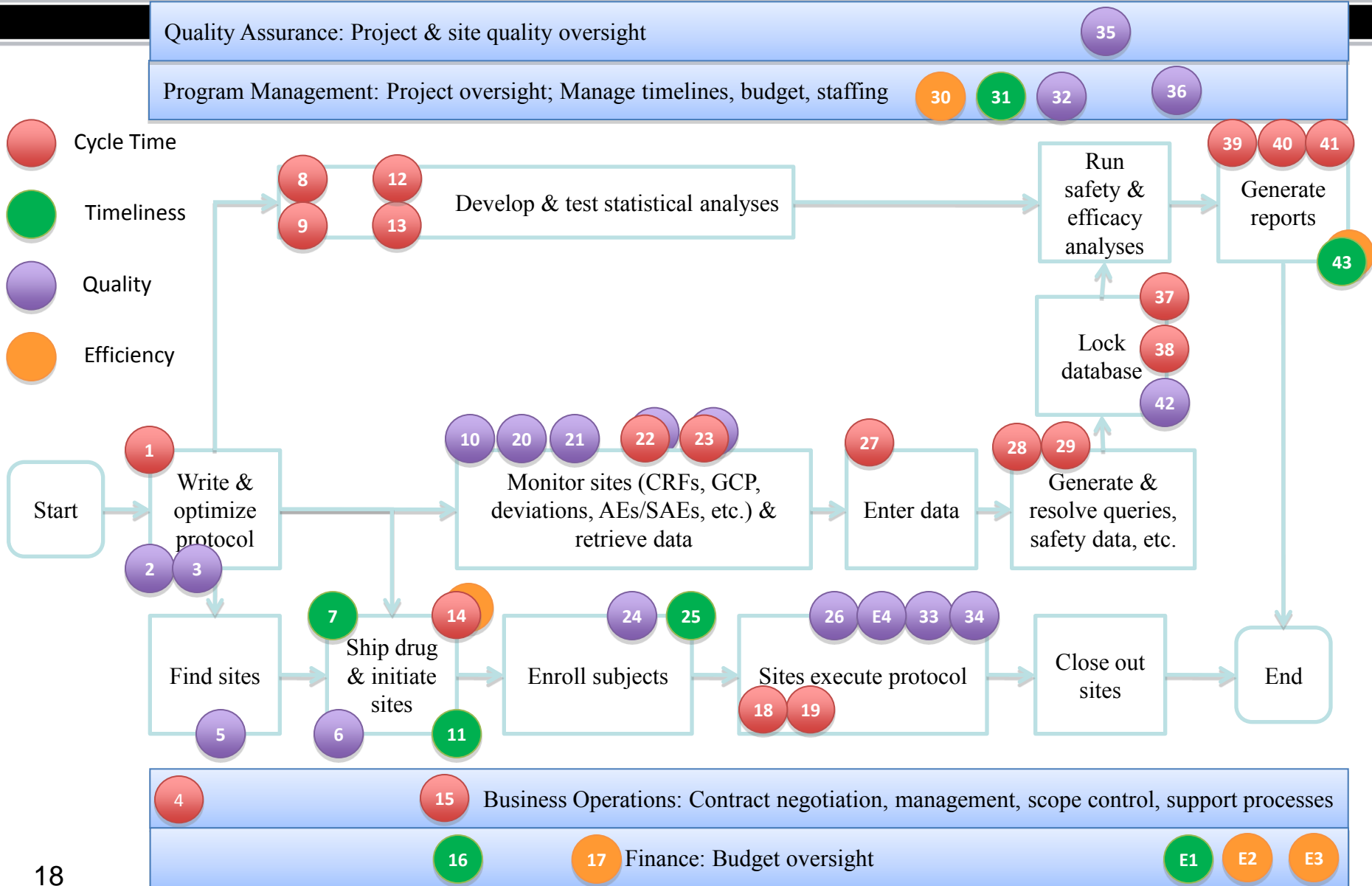
## MCC Clinical Trial Performance Metrics Wiki

New Actions Settings View: All Pages

Type	Name	Modified By	Modified	Created By	Created
	Benchmarking	Jeanne Green	2/24/2010 3:59 PM	Jeanne Green	2/24/2010 3:34 PM
	Country Regulatory Package	Gary Urban	3/25/2010 5:25 PM	Gary Urban	3/25/2010 5:25 PM
	CRA	MCC Administrator	4/2/2010 1:03 PM	MCC Administrator	2/4/2010 2:11 PM
	CRF (Case Report Form)	MCC Administrator	4/2/2010 1:03 PM	MCC Administrator	2/4/2010 2:08 PM
	Critical Audit Findings	Yvonne Baran	3/31/2010 11:53 AM	MCC Administrator	3/31/2010 11:28 AM
	CSR (Clinical Study Report)	MCC Administrator	4/2/2010 3:04 PM	MCC Administrator	4/2/2010 3:04 PM
	Cycle Time (CT) Metric	MCC Administrator	2/4/2010 3:51 PM	MCC Administrator	2/4/2010 3:51 PM
	Dashboard	Jeanne Green	2/24/2010 3:44 PM	Jeanne Green	2/24/2010 3:36 PM
	DBL (Database Lock)	Gary Urban	3/25/2010 5:23 PM	Jeanne Green	2/24/2010 3:31 PM
	EDC	Jeanne Green	2/24/2010 3:46 PM	MCC Administrator	2/4/2010 2:35 PM
	Enrollment	Gary Urban	2/25/2010 10:46 AM	Jeanne Green	2/24/2010 3:32 PM
	Final Approved Protocol	MCC Administrator	2/19/2010 2:38 PM	MCC Administrator	2/19/2010 2:12 PM
	For Cause Analysis	Jeanne Green	2/24/2010 3:51 PM	Jeanne Green	2/24/2010 3:34 PM
	FPFV (First Patient First Visit)	Jeanne Green	2/24/2010 3:44 PM	MCC Administrator	2/4/2010 2:27 PM
	How To Use This Wiki Library	MCC Administrator	2/4/2010 1:56 PM	MCC Administrator	2/4/2010 1:56 PM
	IP (Investigational Product)	MCC Administrator	3/30/2010 9:42 AM	Gary Urban	3/25/2010 5:20 PM

## Reporting Level Hierarchy



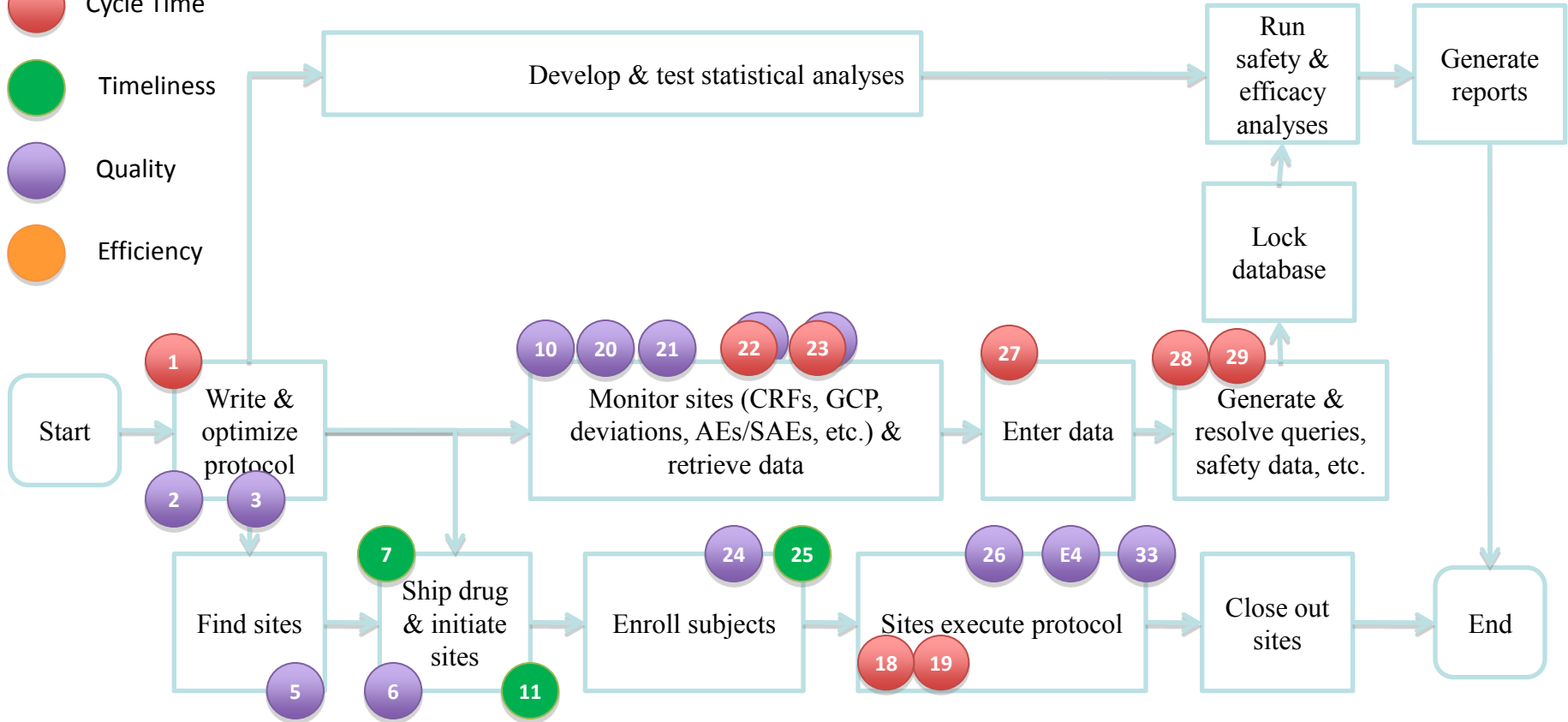


Quality Assurance: Project & site quality oversight

Program Management: Project oversight; Manage timelines, budget, staffing

30 31

- Cycle Time
- Timeliness
- Quality
- Efficiency



Business Operations: Contract negotiation, management, scope control, support processes

Finance: Budget oversight

E2 E3

Metric #	Metric Type	Metric Title
1	CT	Protocol Feasibility
2	Q	Protocol Versions
3	Q	Protocol Quality Score
4	CT	Contract execution timeliness for non functional outsourcing models
5	Q	Site Selection Quality Score
6	Q	Regulatory Authority Package Approval Rate
7	T	Protocol approval to first site activated
8 - EDC	CT	Final Approved Protocol to Final Approved eCRF - EDC
9 - paper	CT	Final Approved Protocol to Final Approved CRF - paper
10	Q	Monitoring Plan Availability
11	T	% Planned Sites Activated
12 - EDC	CT	Final eCRF to Database "Go Live" - EDC

Metric #	Metric Type	Metric Title
13 - paper	CT	Final CRF to Database "Go Live" - paper
14	CT	Site Activation to First Patient First Visit
	E	
15	CT	Change Order execution
16	T	Timeliness of Invoice payment
17	E	Budget and pricing accuracy
18 - EDC	CT	Patient Visit Complete to eCRF data entered - EDC
19 - paper	CT	Patient Visit Complete to CRF data entered - Paper
20	Q	Monitoring Visit Frequency
21	Q	Monitoring Visit Report Completion
22	CT	Documented Monitoring Visit Report Review
	Q	

Metric #	Metric Type	Metric Title
23	CT	Monitoring Follow-Up Letter Completion
	Q	
24	Q	Site Productivity
25	T	% subjects enrolled
26	Q	Patient Retention
27 - paper	CT	CRF Pages Received/scanned to Data Entry Complete - Paper
28 - EDC	CT	Generation of Query to update of query response - EDC
29 - paper	CT	Generation of Query to update of query response - paper
30	E	Drug Supply Forecasting
31	T	Variance of Drug Inventory & Resupply
32	Q	Protocol Amendments
33	Q	Protocol Deviations

Metric #	Metric Type	Metric Title
34	Q	Sites Prematurely Terminated
35	Q	Audit Findings per Site
36	Q	Issue identification, management and criticality
37 - EDC	CT	LPLV to Database Lock - EDC
38 - paper	CT	LPLV to Database Lock - paper
39	CT	DBL (Database Lock) to final TLG/TFL (Tables, Listings and Graphs/Table Figure Listing)
40	CT	Final TLGs to First Draft CSR complete
41	CT	DBL (Data Base Lock) to Final CSR Complete
42 - paper	Q	Final Database Error Rate
43	T	Deviation of final TLGs delivered from final agreed target date.
	E	

## Exploratory Metrics

Metric #	Metric Type	Metric Title
E1	CT	Timeliness of Invoice generation following contractual milestones
E2	E	Determination of project progress versus planned (original contract value)
E3	E	Determination of project progress versus planned (adjusted contract value)
E4	Q	Site Assessment Quality Scores



**CLINICAL TRIAL**  
metrics champion

*MCC Process Improvement Work Group –  
Quality Focus*

Beginning in Q4 2009, a group of Sponsor and CRO Process Improvement & QM specialists began working together to:

- Encourage the use of the metrics for process improvement
- Help MCC members avoid pitfalls such as sub-optimization
- Develop new Quality metrics



The *quality* of something can be determined by comparing a set of inherent characteristics with a set of requirements.

- If those inherent characteristics meet all requirements, high or excellent quality is achieved.
- If those characteristics do not meet all requirements, a low or poor level of quality is achieved

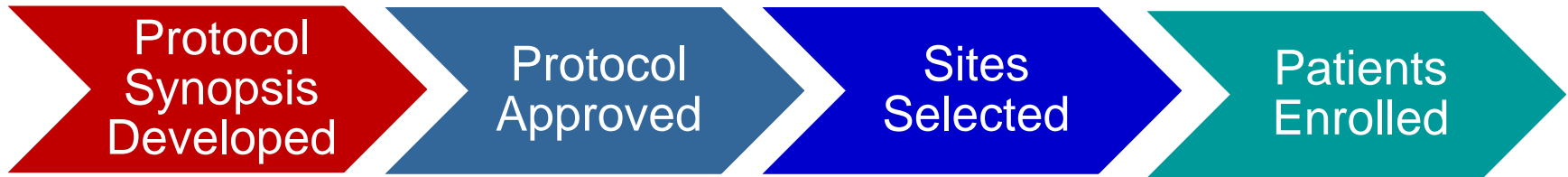
Source: <http://www.praxiom.com/iso-definition.htm>

## **A successful clinical trial is dependent on many factors:**

- Robust, scientifically and ethically sound protocol
- Selection of high-performing, GCP compliant sites that contribute timely, accurate and complete data
- Keen oversight of quality execution throughout the life of the trial

***Recent regulatory agency warning letters highlight deficiencies in GCP compliance and sponsor oversight, both which have the potential to compromise high-quality agency submissions.***

MCC Process Improvement WG expressed frustrations that many organizations focus on whether clinical trials are being executed in a **timely** manner ...



... but do not measure how **well** tasks are being completed.

- **Time** is easy to measure
- **Quality** is difficult to measure - but critical
- Measuring **Time** but not **Quality** can lead to unexpected results



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***Reducing the time and cost of a task should be balanced with maintaining / improving quality***

**High Quality  
Protocol**

+

**Good Site  
Selection**

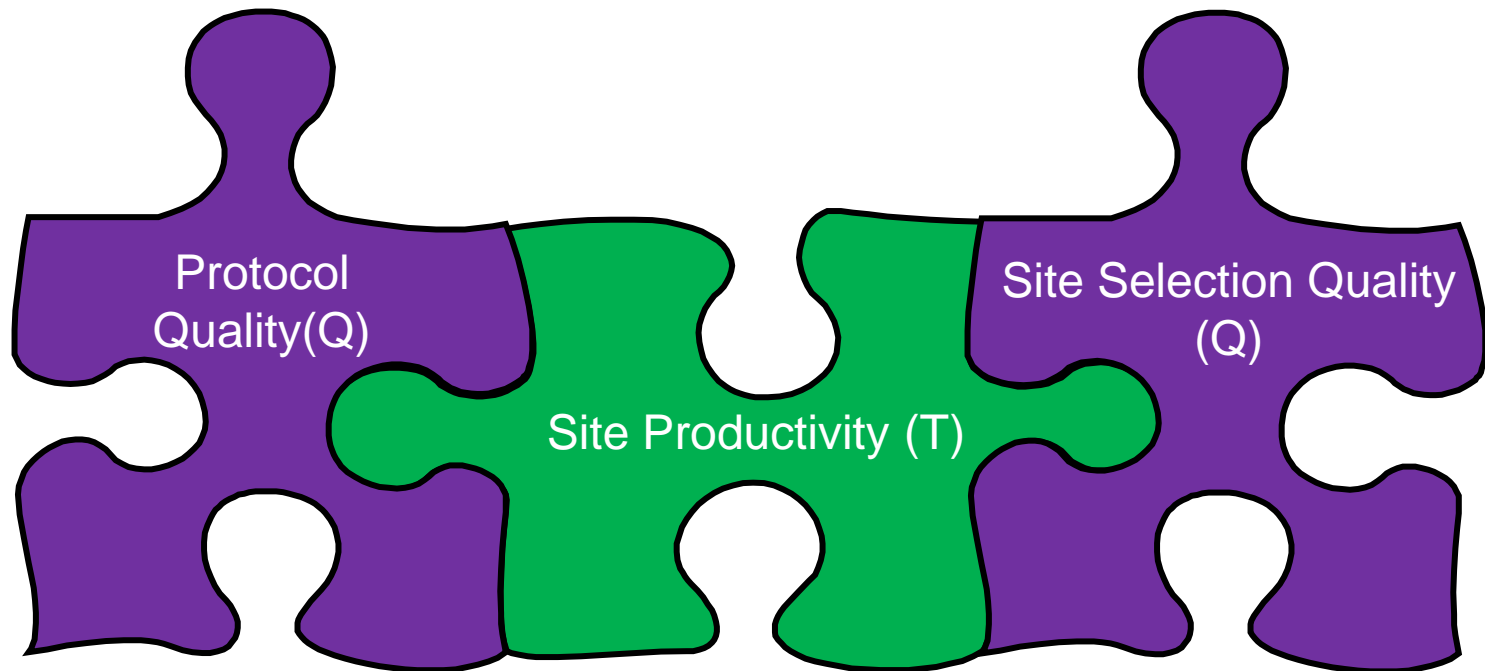
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**High Chance of  
Successful Trial**



- Three new Quality Metrics:
  - **MCC #3: Protocol Quality Score**
  - **MCC #5: Site Selection Quality Score**
  - MCC E4: Site Assessment Quality Score

MCC Companion Metrics show the interrelationship of clinical trial tasks ....



.... the quality of the protocol and the sites selected for the trial have a direct impact on site productivity

Each **MCC Quality Scoring Tool** contains a set of requirements against which organizations can compare study start-up activities in order to determine a quality score and look for quality improvement opportunities.

***These scores outline protocol and site attributes that correlate to performance.***

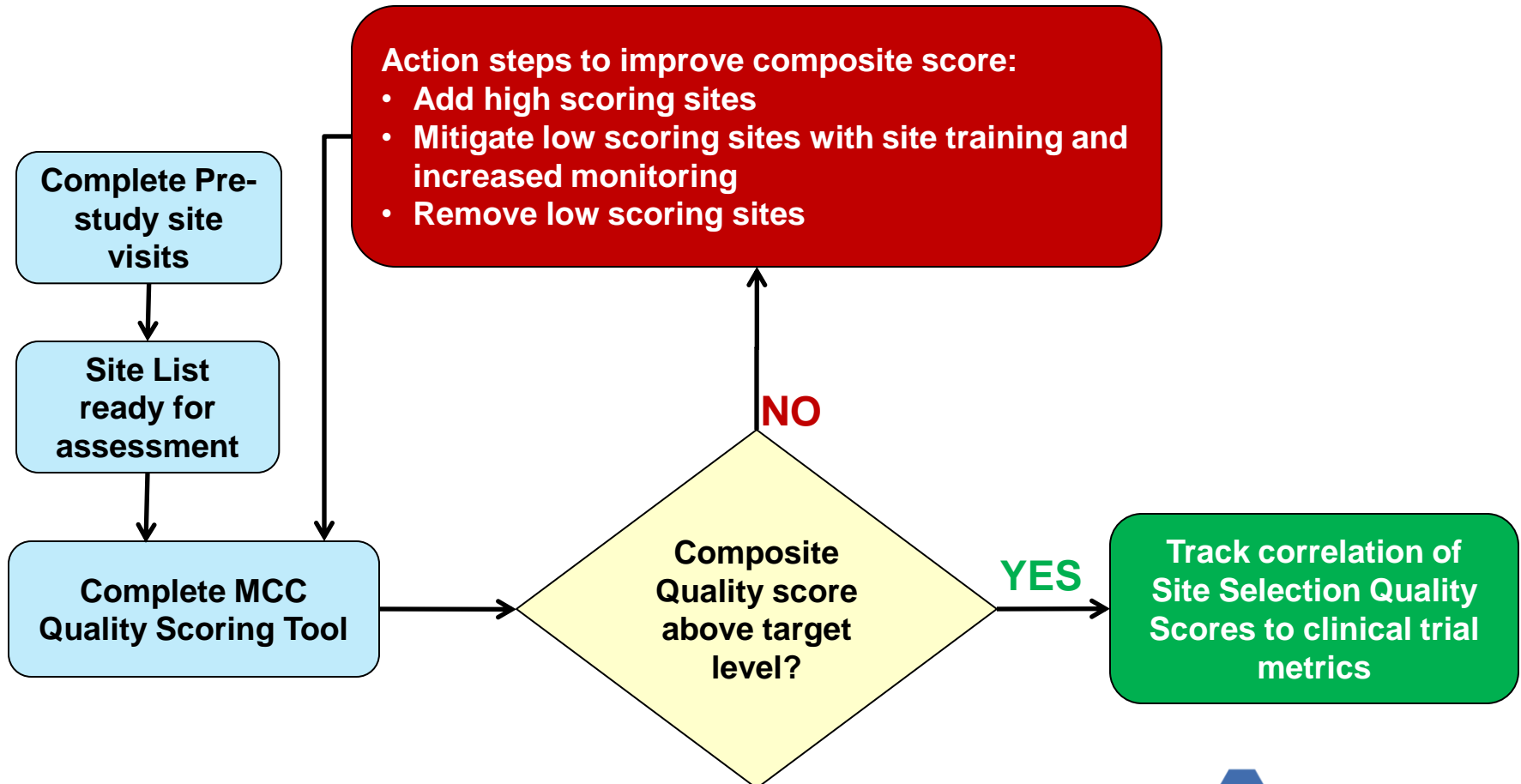
*The **MCC Site Selection Quality Scoring Tool** provides a systematic means of evaluating site **quality** during the site selection process*

- Each site is rated on a standard set of eight site quality criteria
- Criteria are weighted as to relevance per protocol
- Each site score is automatically calculated from responses to these quality criteria

- Sites can be marked as included or excluded in final site selection list
- A total score is derived for individual countries for all sites scored as well as selected sites only
- Final result should be used as a guide in determining final site selection list

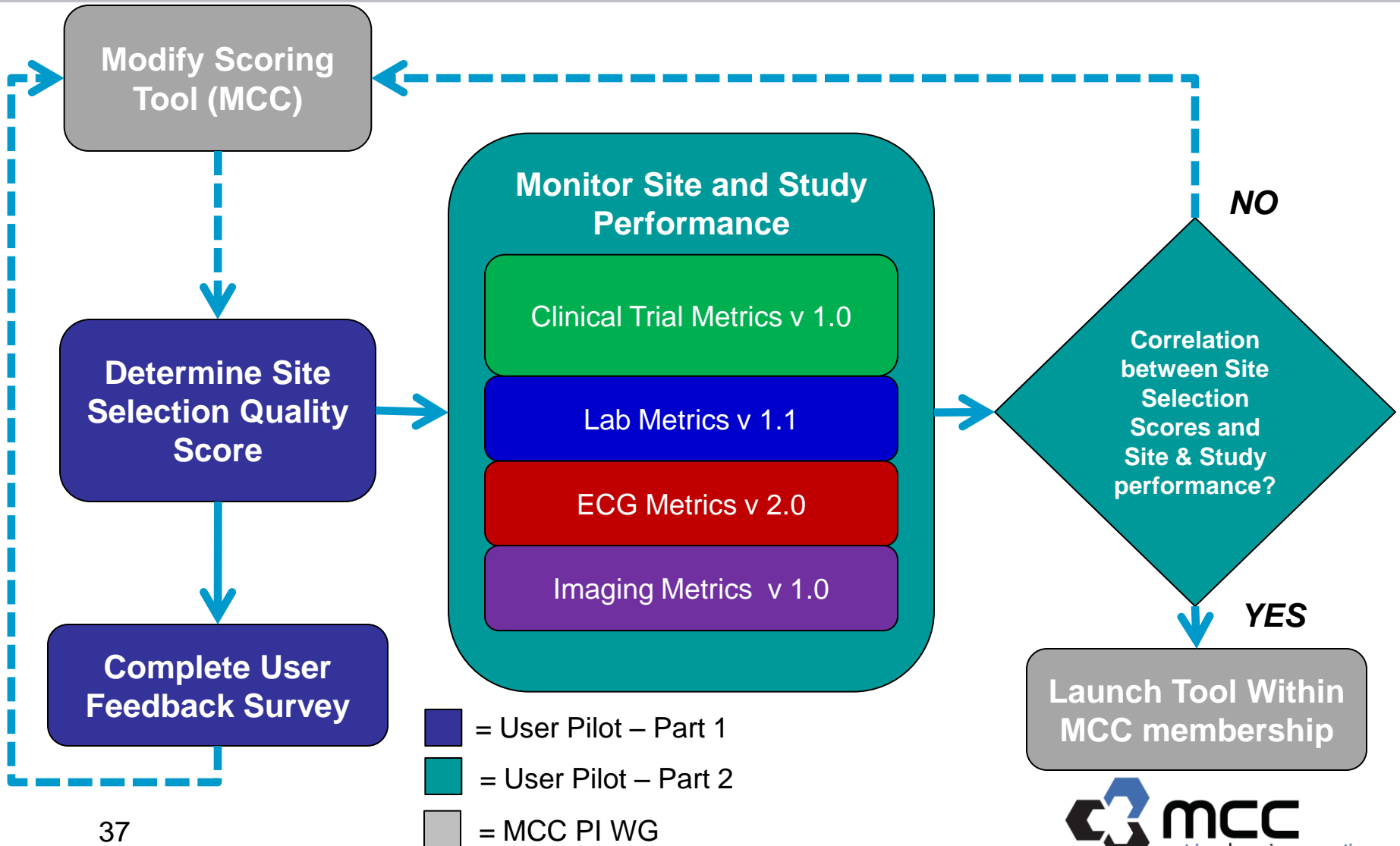
The ***MCC Site Selection Quality Scoring Tool*** is designed to assess the *strengths and weaknesses of potential sites* being considered for a specific protocol.

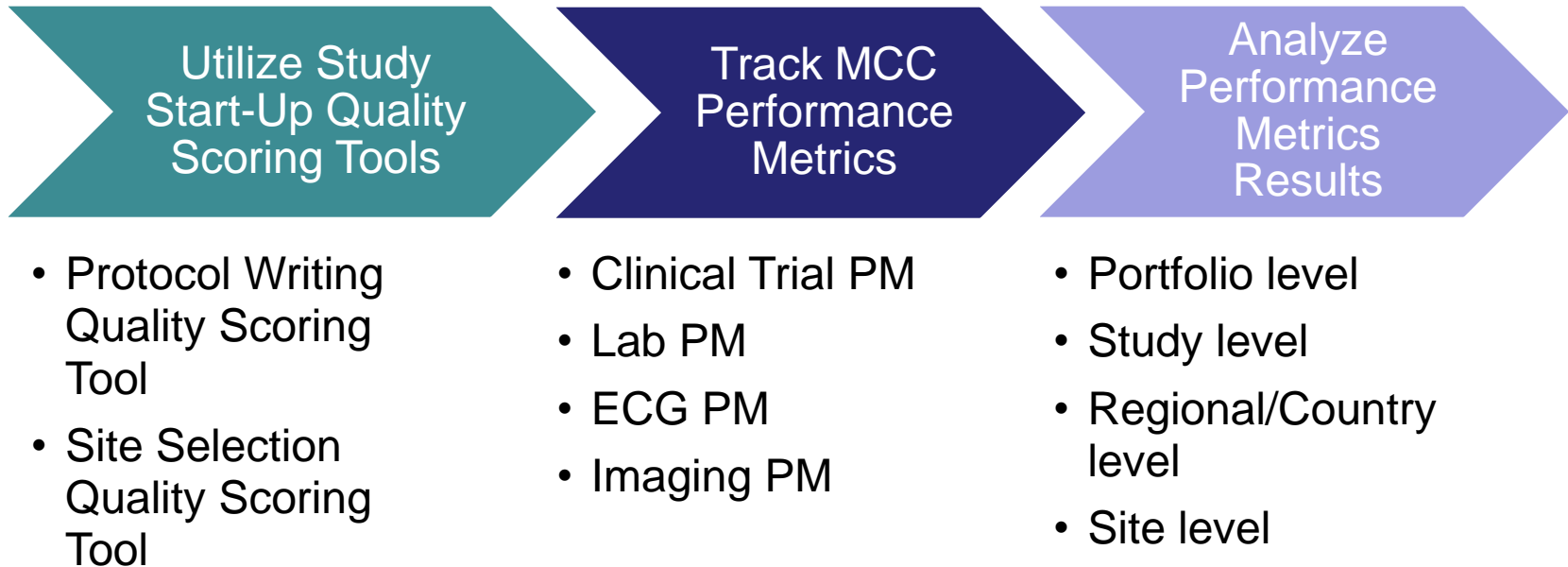
## Site Selection Quality Scoring Tool



- Goal is to establish a reasonable threshold which all sites surpass as a measure of quality
- Focus should not just be on the score - but rather using the tool to assist in rational discussion amongst the team evaluating and selecting sites
- The act of measuring should modify behavior and highlight sites at risk for poor performance:
  - Does a site lack skills and need specific training?
  - Are there enough high quality sites selected in country X?

***By maximizing the overall score for selected sites, organizations maximize your chances of on-time enrollment and successful completion of a trial!***



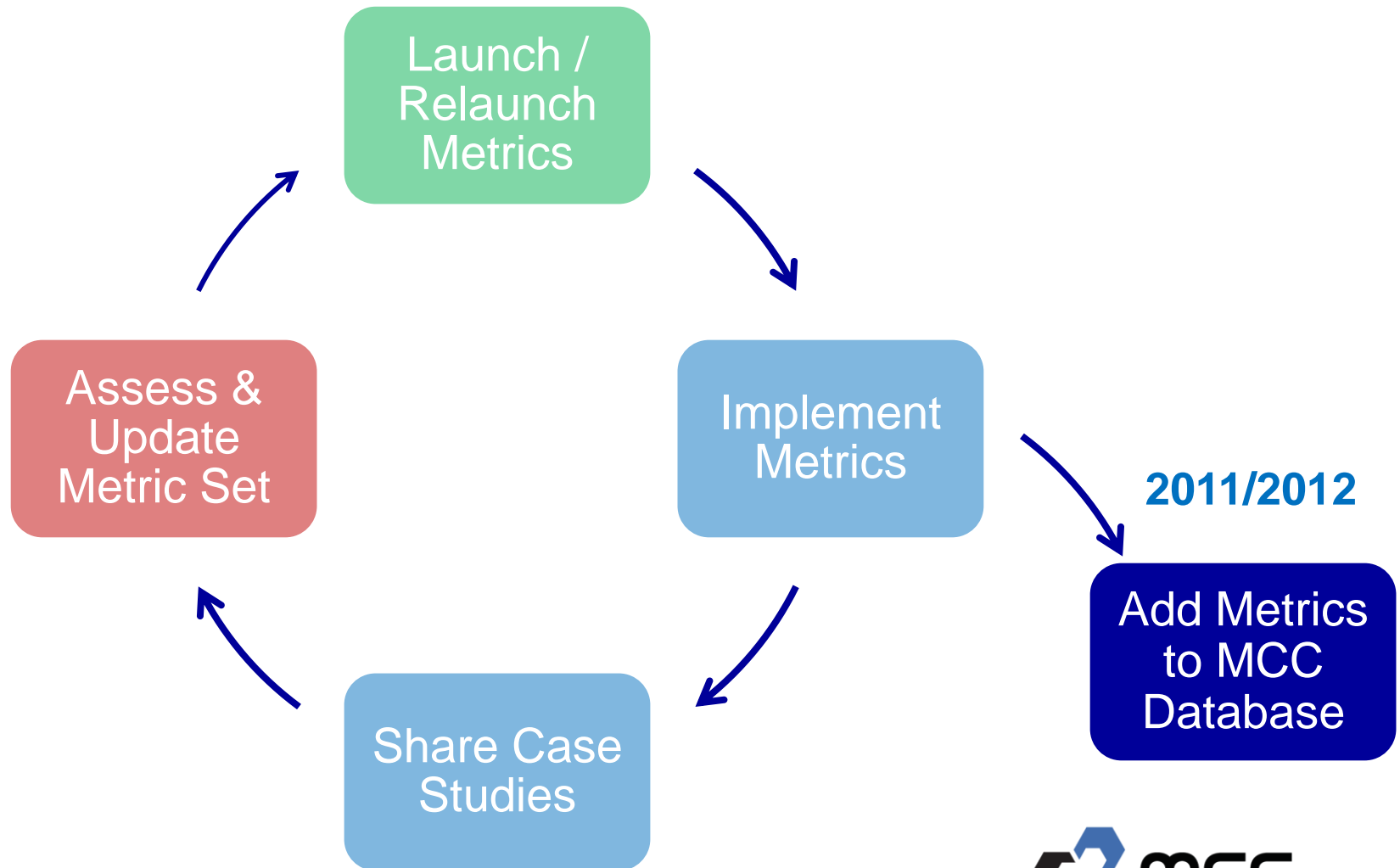


- Recruiting MCC members to pilot the Quality Tools
  - Evaluate criteria included in each prototype tool
  - Provide feedback about the prototype tools (excel)
  - Measure correlation of quality scores to related MCC companion metrics
- Interest in developing additional Quality Scoring Approach for Case Report Forms (CRFs) and Clinical Study Reports (CSRs)



**CLINICAL TRIAL**  
metrics champion

*MCC Member Blinded Database Project*



- MCC Executive and Steering Committees responsible for project oversight and ensuring project deliverables within the parameters of the strategic plan.
- Database Project Key Features:
  - compare company results to other members (blinded manner)
  - online metric analytic reporting tool
  - ability to “drill down & roll up” to different reporting levels

## Database program requirements:

- MCC member organizations will have the option to participate in the database
- Must be MCC member to participate in database program
- Database will not available to non-MCC member organizations

***Expect to begin database pilot in late 2011***

## MCC Lab Metrics

- Preparation of Version 2.0
- Input to Quality Tools

## MCC ECG Metrics

- Preparation of Version 2.0
- Input to Quality Tools

## MCC Imaging Metrics

- Implementation Support of Version 1.0
- Input to Quality Tools

## MCC Clinical Trial Metrics

- Implementation Support of Version 1.0
- Quality Tool Pilots
- Ongoing Process Improvement WG meetings

## MCC Member Blinded Database Project

- Development of database structure
- Database Pilot



## Part II: Cognizant

Krishnan Rajagopalan, PhD  
Global Head of Life Sciences BPO  
**COGNIZANT**





# Part III: AstraZeneca Case Study

Gerri Brown-Broadnax  
Director, Data Management  
***ASTRAZENECA***





# Part IV: Workshop Breakout Groups



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Tara Coughlin  
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Jeff Heilbraun  
CORELAB PARTNERS

Guy Mascaro  
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Mark Milberg  
MEDTRONIC

Krishnan Rajagopalan, PhD  
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Liz Wool  
QD-QUALITY & TRAINING  
SOLUTIONS

Dave Zuckerman  
CUSTOMIZED IMPROVEMENT  
STRATEGIES

1. What challenges does (would) your organization face in order to implement new standardized performance metrics?
2. What does **benchmarking** mean for the drug and medical device industry? How might your organization utilize a blinded benchmarking database?



# Part V: Workshop Wrap-Up

