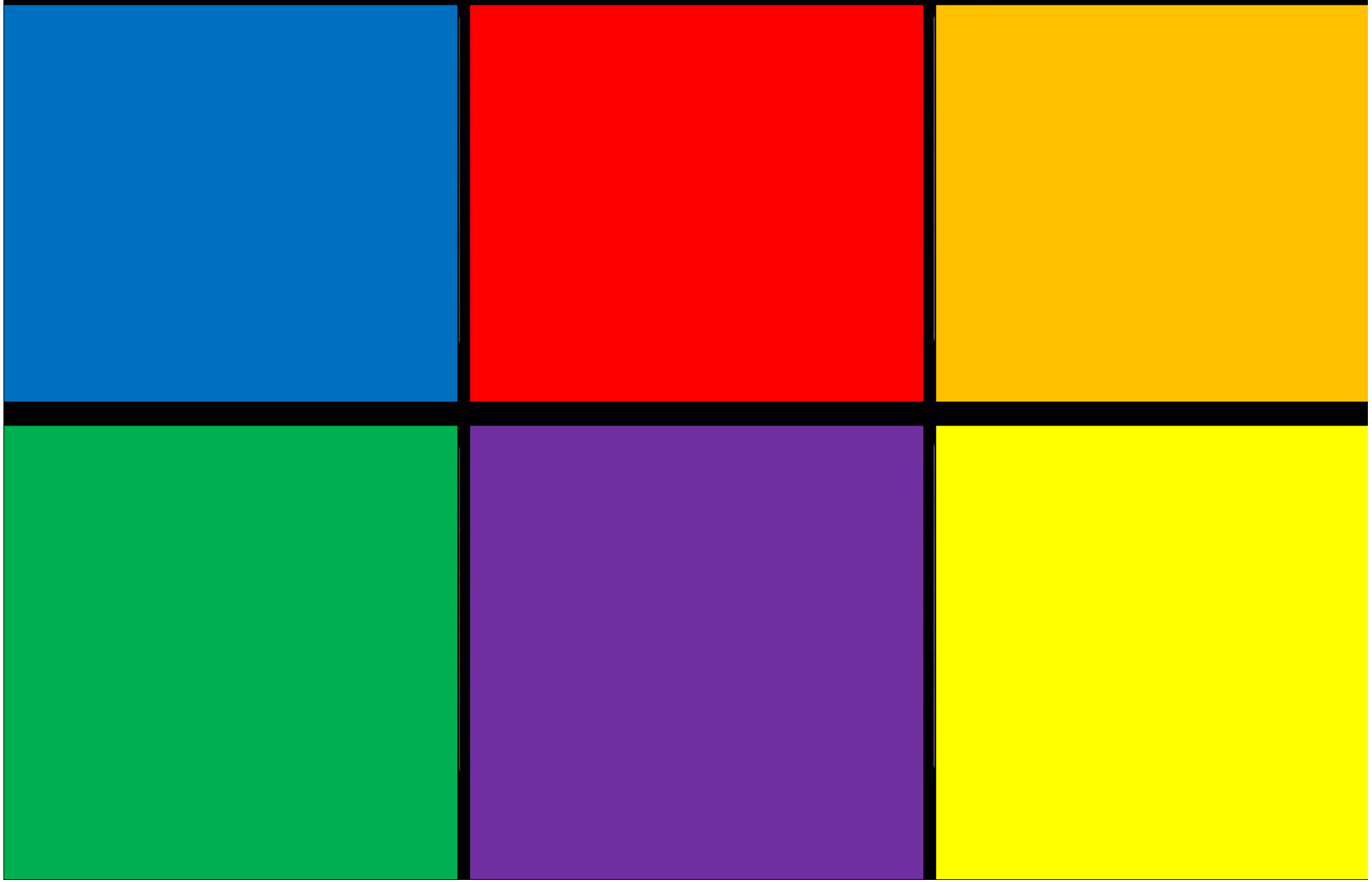
Transforming Care: Leveraging Healthcare Technology To Improve Health For The Pediatric And Adolescent Population

Albert Oriol, CIO
Rady Children's

IT Leaders



Agenda

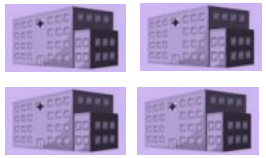
- Context: Rady Children's Hospital – San Diego
- The Strategic Process: Engagement From The Top
- Transforming Healthcare
  - mHealth
  - Telemedicine
  - Sequencing
- Changing The World

Rady Children's Health Network

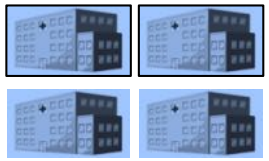
Rady Children's Hospital San Diego

Acute Care Hospital

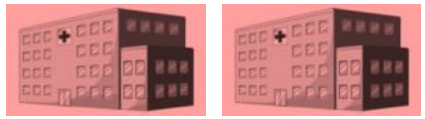
Branded Centers with Multiple Outpatient Services:
Escondido & Oceanside



Urgent Care Centers:
Carlsbad, Escondido, La Mesa, Mid-City San Diego



Satellite NICUs:
Scripps La Jolla, Encinitas, Mercy, Chula Vista, Palomar Medical Center, Rancho Springs



Satellite Pediatric Units:
Sharp Grossmont Hospital, Palomar Medical Center

Institute for Genomic Medicine

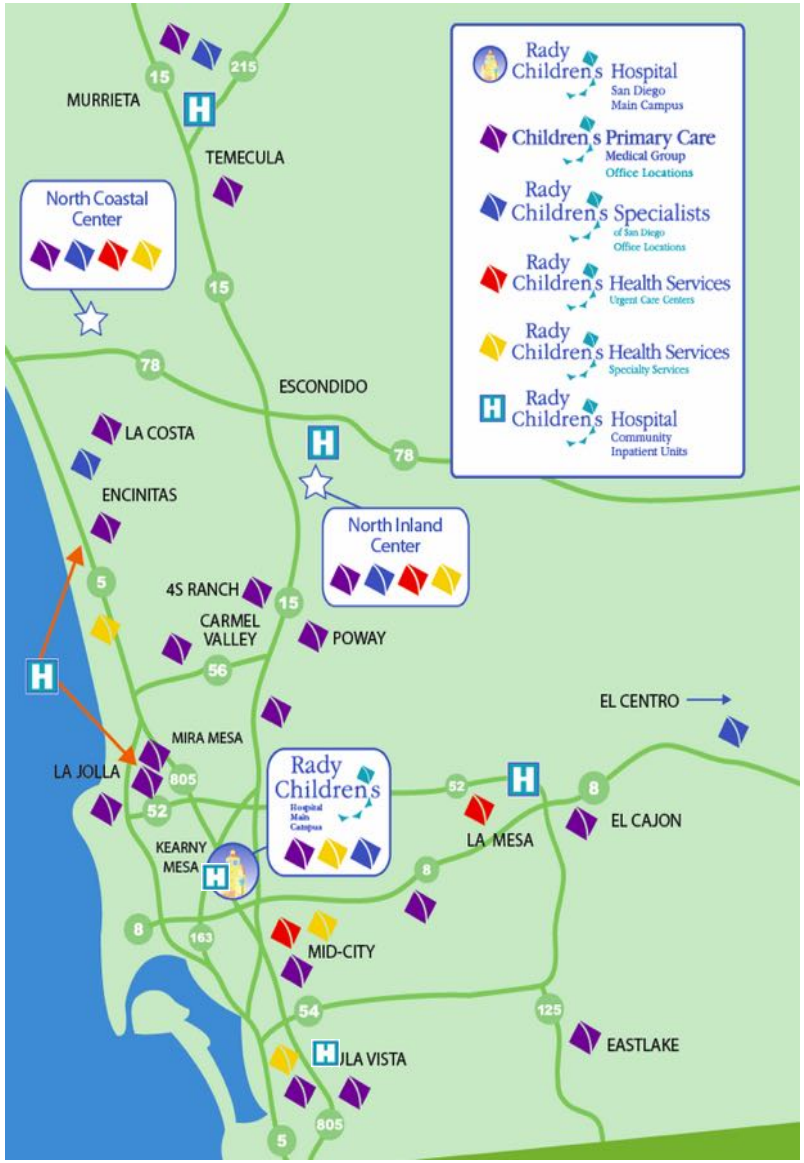
Medical Outreach Locations

Home Health Agency

Primary Care Locations:
CPCMG

Community Health Improvement Services

About Rady Children's



Fast Facts FY2016:

Beds:	550
Revenue:	$1B
Capitated Lives:	250,000
Employees:	5,200
Physicians:	700 affiliated 400 subspecialists
Nurses:	1,000+
Admissions:	19,000+
Surgeries:	20,000+
ED and UC Visits:	147,000+
Outpatient Specialty Visits:	230,000+
Outpatient PCP Visits:	450,000+

Affiliated with UCSD School of Medicine

Region's provider of choice and safety net

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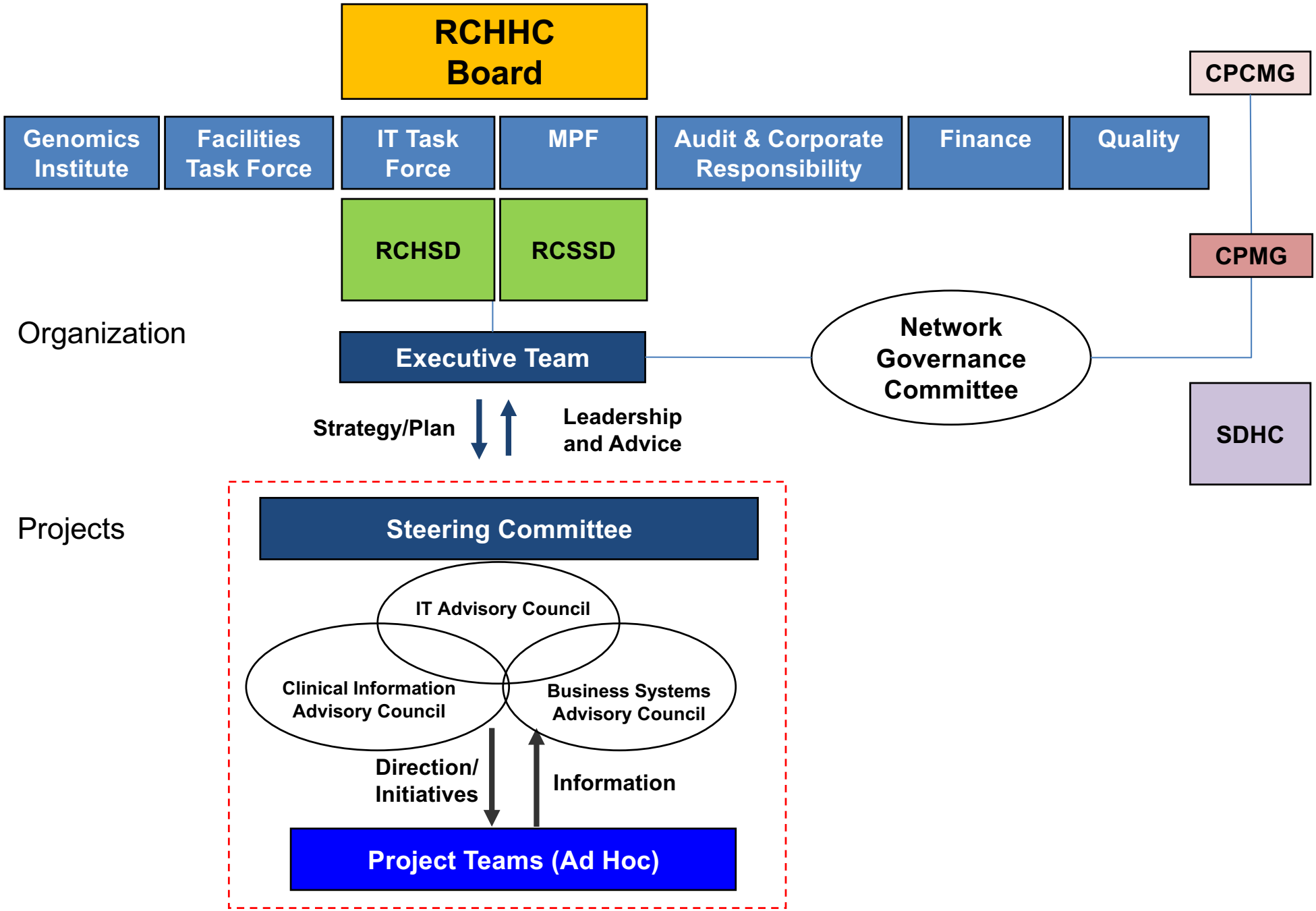
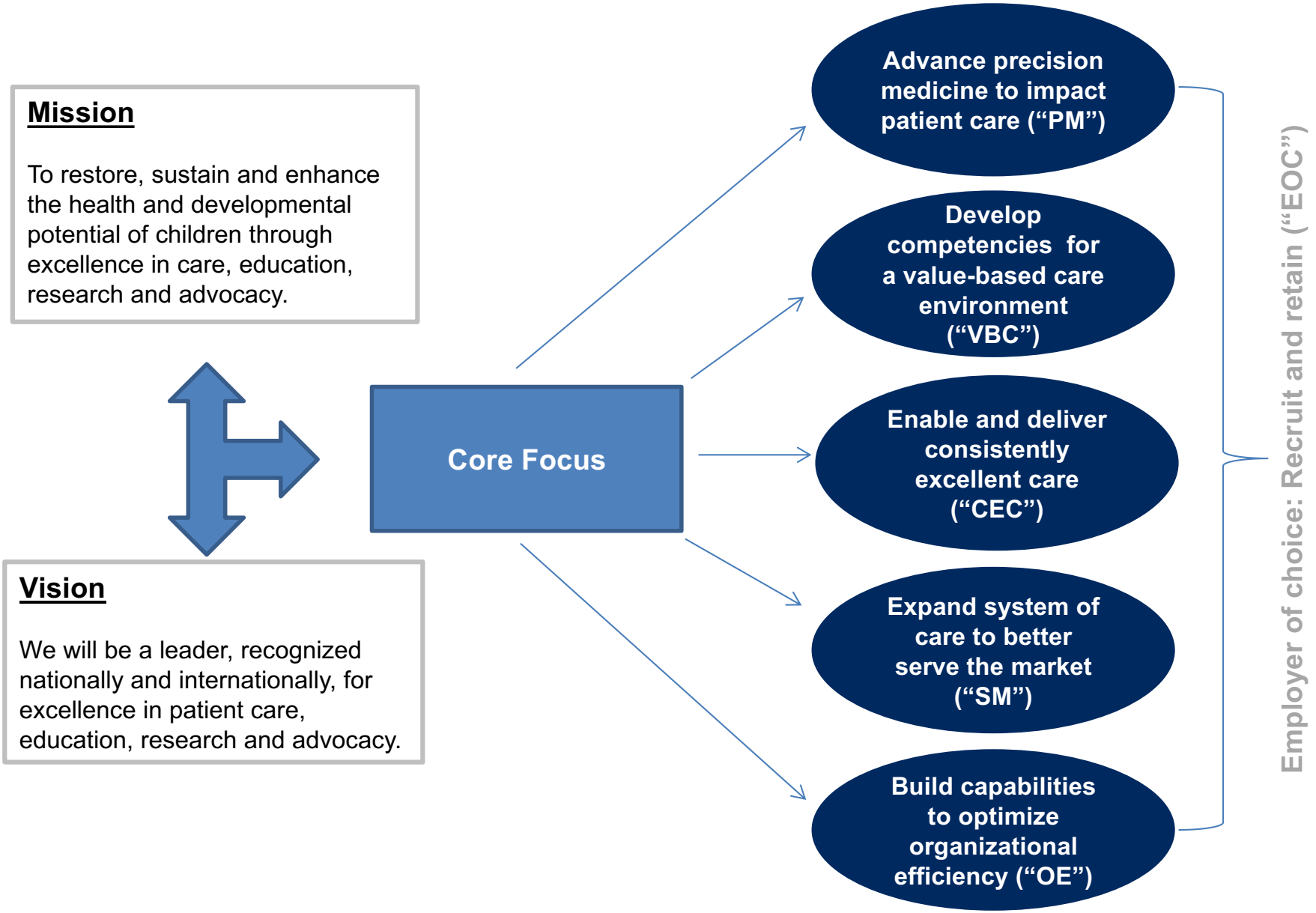
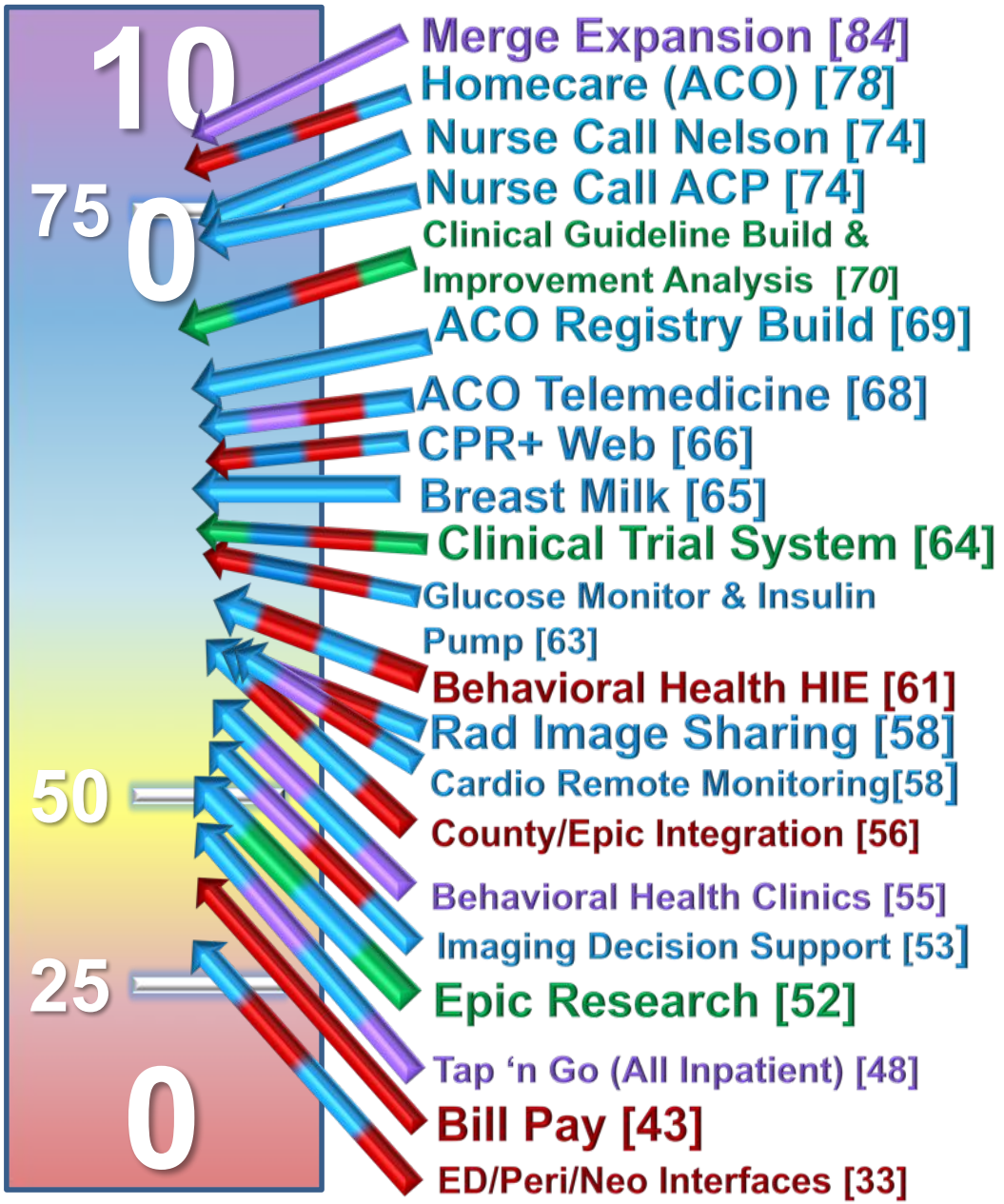

RCHHC Board
CPCMG
Genomics Institute
Facilities Task Force
IT Task Force
MPF
Audit & Corporate Responsibility
Finance
Quality
RCHSD
RCSSD
CPMG
Organization
Executive Team
Network Governance Committee
Strategy/Plan
Leadership and Advice
SDHC
Projects
Steering Committee
IT Advisory Council
Clinical Information Advisory Council
Business Systems Advisory Council
Direction/ Initiatives
Information
Project Teams (Ad Hoc)

Six Strategies Drive Information Management Efforts At Rady Children's



21 Submissions



Guiding Principles

- **Full Participation**
- Full Focus
- **Business/Clinical Ownership & Accountability**
- Relentless Communication
- Empower Decision Makers
- **Excellence, not perfection**
- Leverage Success of Others
- Standardization
  - Value and respect the business needs of each entity
- On Time/On Budget
- **It's for the Kids!**

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MD 2 ME

MD2Me Participant with Healthcare Need

Accesses SMS Algorithm

SMS Algorithm Queries re: Symptoms (by Disease)

SMS Algorithm Determines Level of Disease Severity

Non-Urgent

Urgent

SMS Algorithm Provides Relevant Feedback and Notifies Relevant Healthcare Contact

Healthcare Team Notified Non-Urgently (By Email)

SMS Algorithm Provides Relevant Feedback and Notifies Physician

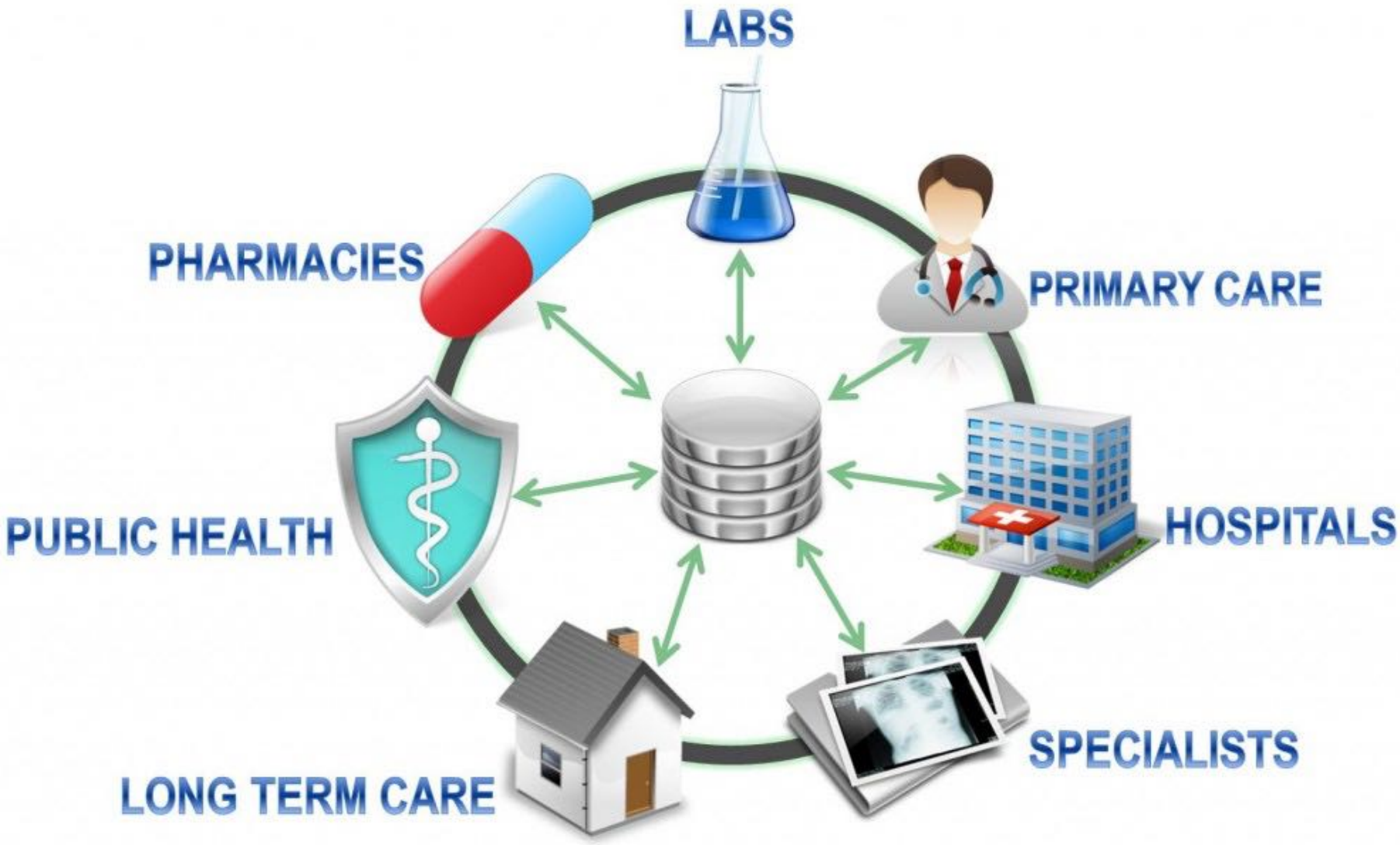
Physician Notified Urgently (By Page) to Contact Patient

MD2Me Results

- ✓ Retention Rate
  - 75/81 = 93%
  - *38/40 = 95% Intervention Group*

- ✓ 79% Compliance with Curriculum
- ✓ Significant improvements – Intervention v. Control
  - ✓ Chronic disease management
  - ✓ Health-related self-efficacy
  - ✓ Patient-initiated communications with health care team

SAN DIEGO HEALTH CONNECT
Better Information • Better Care™



The Results

- Productivity
- Quality of Visit
- Less Duplicate Tests
- Satisfaction
  - Patient
  - Support staff
  - Provider

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Tablets in Speech-Language Therapy

- Therapy augmentation
- Parent Education/Mentoring
- AAC device—communication systems
- Video modeling

“Through telemedicine we are creating a superior, rather than a comparable patient and provider experience”

Anthony Magit, M.D.

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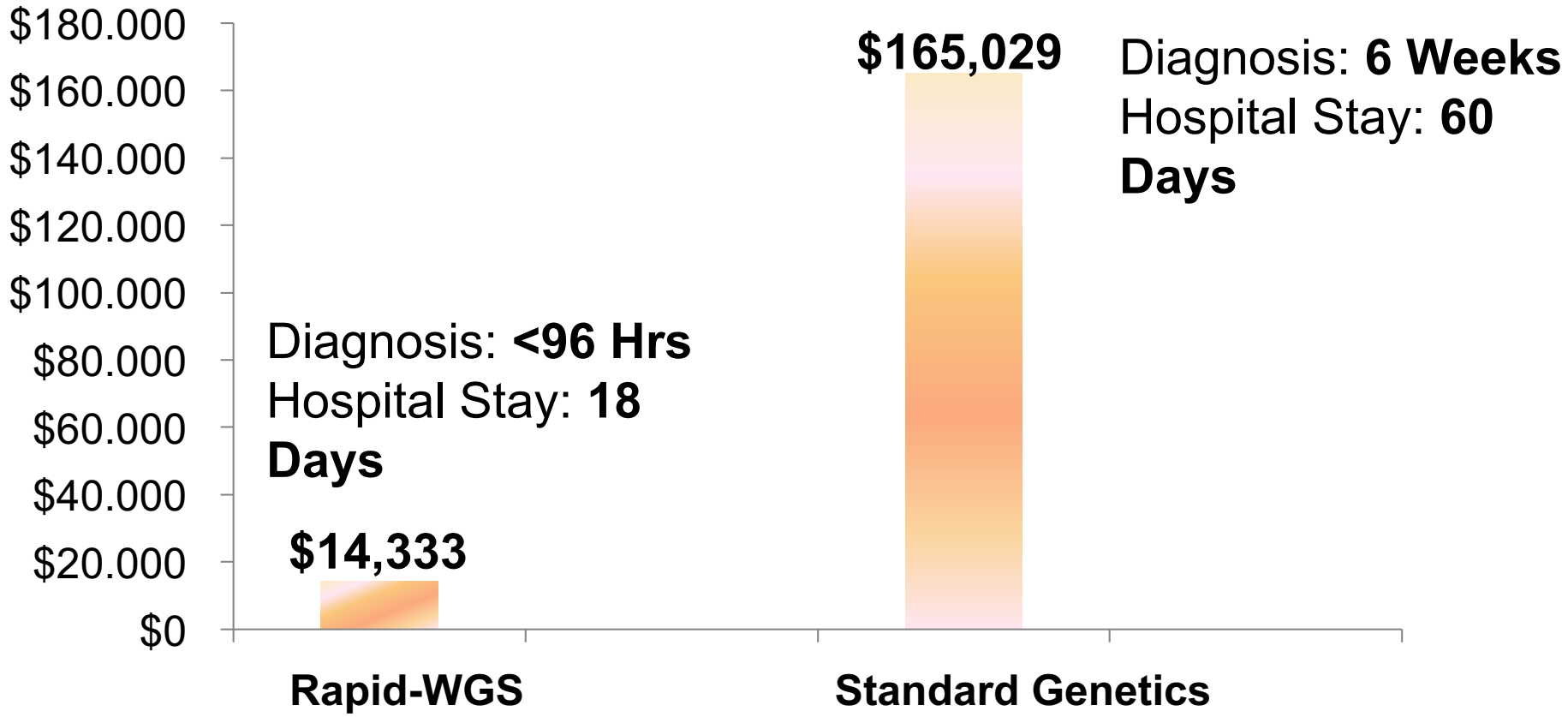
Actual Cost Incurred Case Comparison



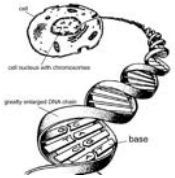
Genomics Workflow

Biological

Patient enrollment

T=0 hrs

Sample collection



DNA extraction

T=2 hrs

Library prep

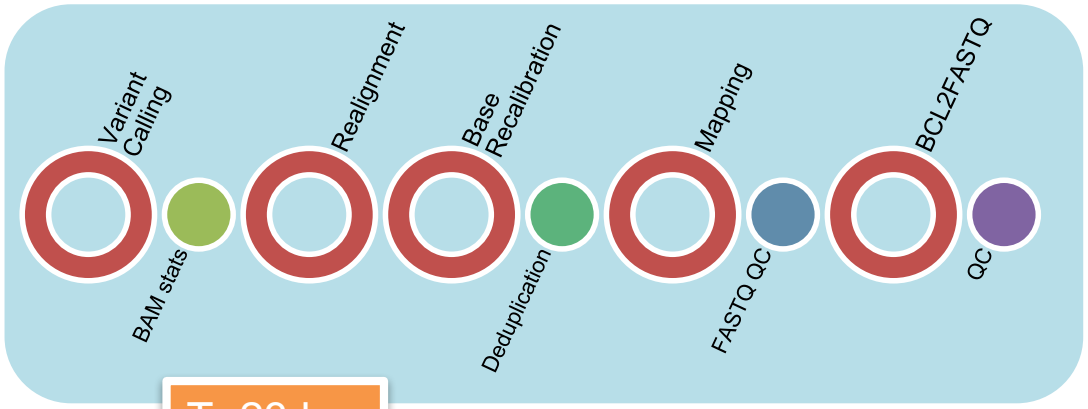
Genome sequencing

Digital

T=22 hrs

~4 million raw data files

Bioinformatic analysis



T=23 hrs

1 report with a list of candidate mutations

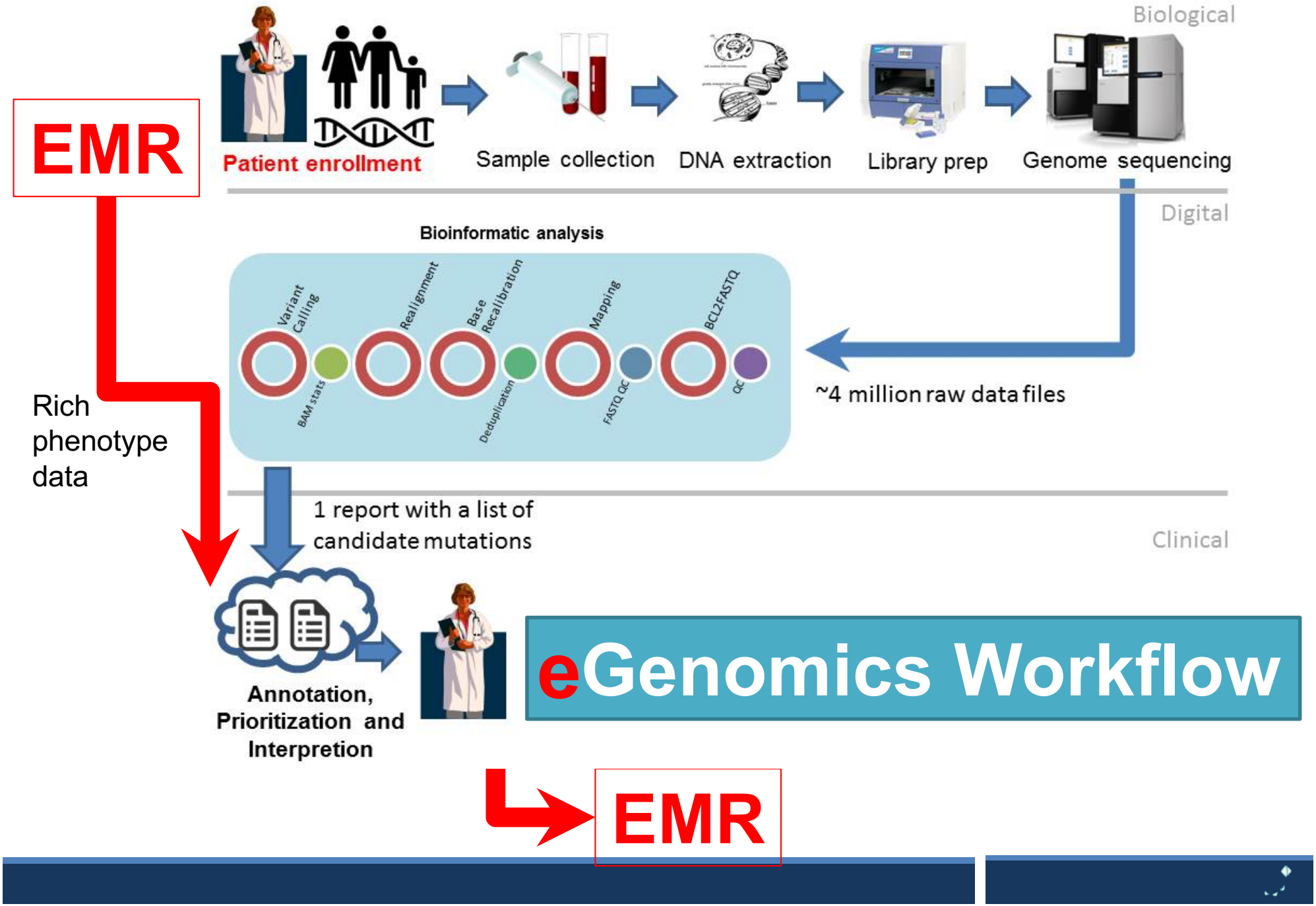
Clinical

Annotation, Prioritization and Interpretation

Tele-mentoring

T=26 hrs

Phase 2


Biological
EMR
Patient enrollment
Sample collection
DNA extraction
Library prep
Genome sequencing
Digital
Bioinformatic analysis
Variant Calling
Realignment
Base Recalibration
Mapping
BCL2FASTQ
BAM stats
Deduplication
FASTQ QC
QC
~4 million raw data files
Rich phenotype data
1 report with a list of candidate mutations
Clinical
Annotation, Prioritization and Interpretion
eGenomics Workflow
EMR

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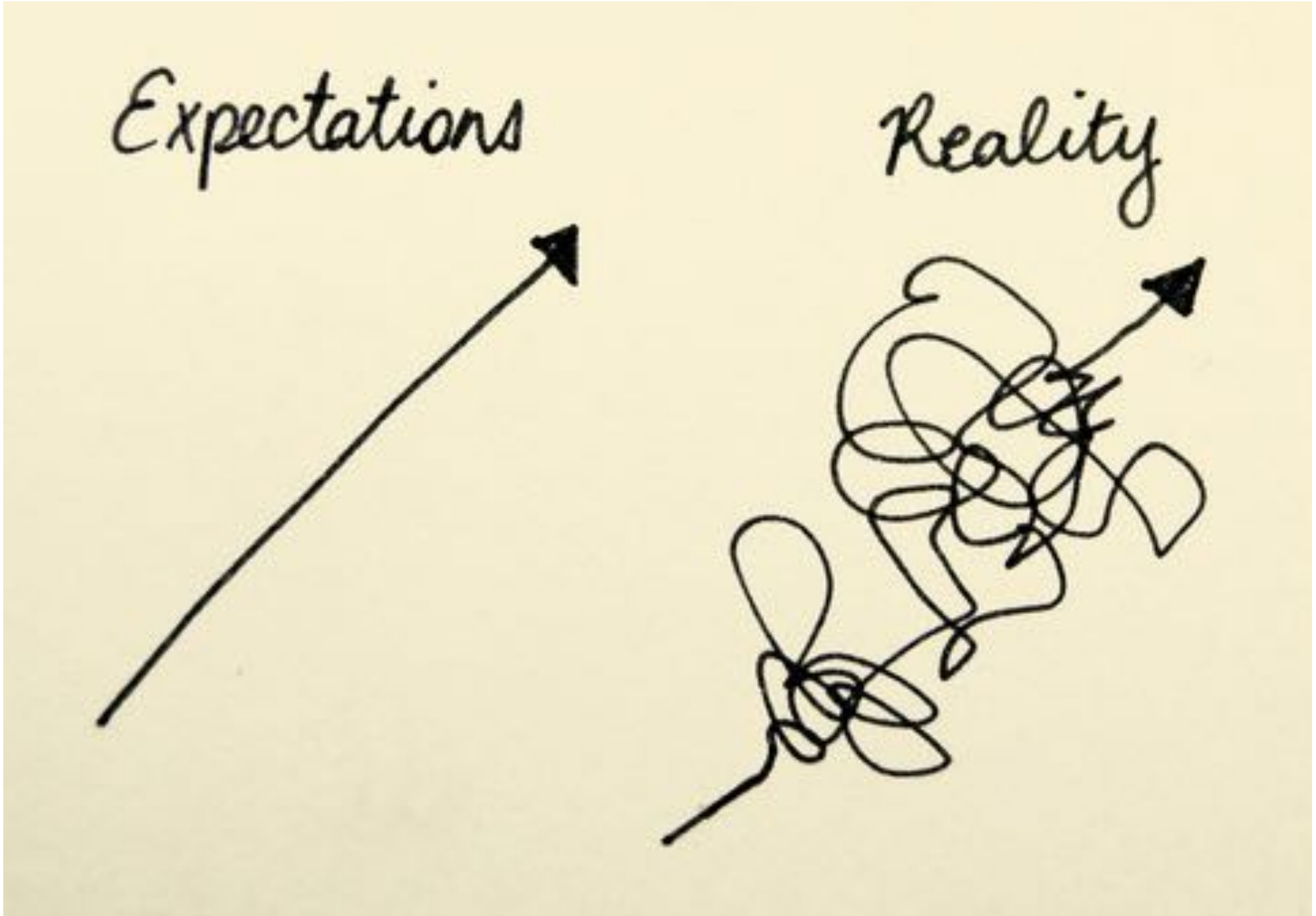
- Transforming Healthcare (a.k.a. Changing The World)


Expectations
Reality

TARRAGONA
TOTS SOM COLLA VELLA
Castellers
de
Vilafranca

YOU CAN DO

ANYTHING,

-BUT YOU CAN'T DO EVERYTHING.-

DAVID ALLEN

WIDE MOUTH

Changing the World
it starts from within

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