Culture, Organization, and Medical Error

Can Error Strengthen Team Performance?

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SickKids® | Labatt Family Heart Centre

“fallor ergo sum”

I Err therefore I Am

St-Augustine – 354-430 AD

Error

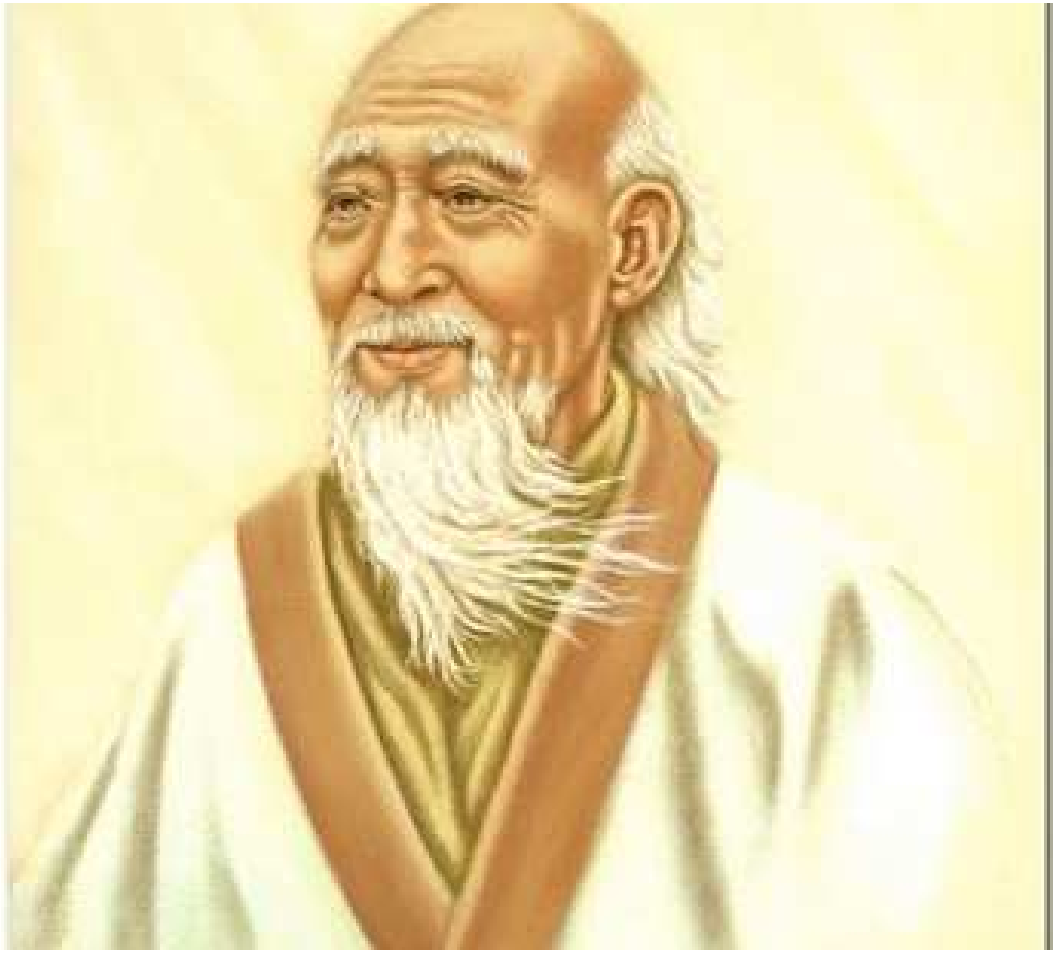
Transparency

How we work together

Effortful Learning

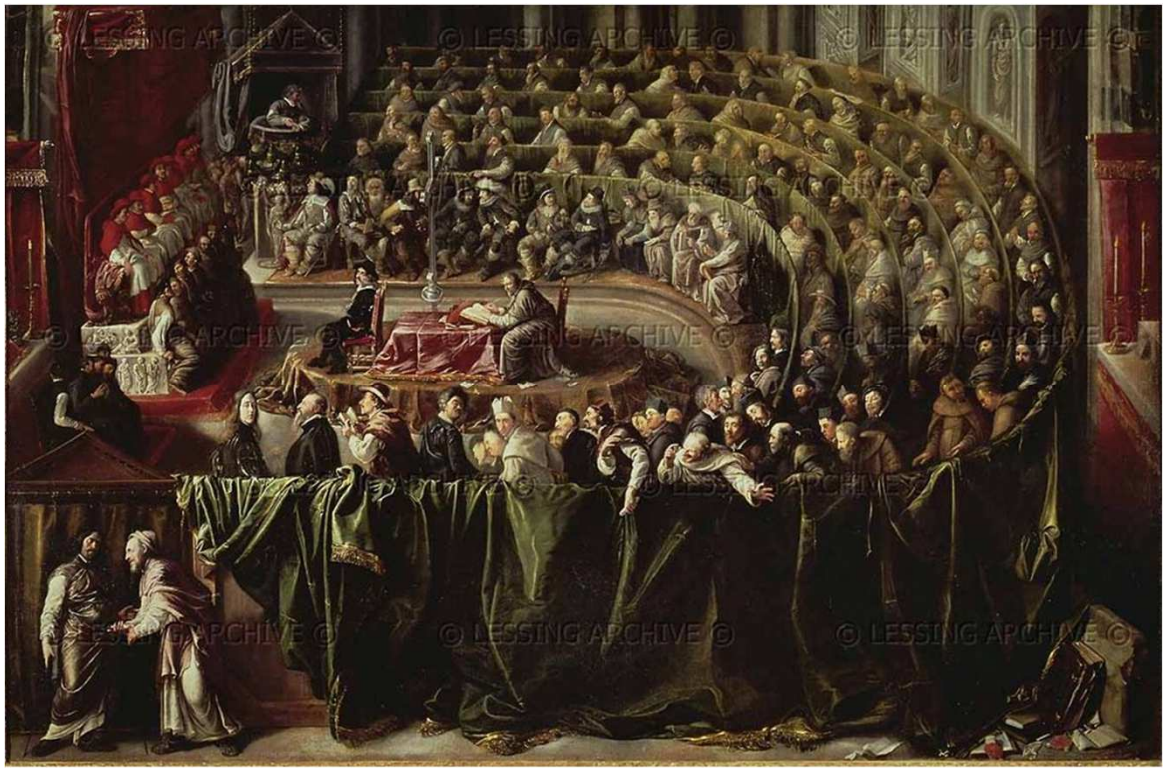
Failure is the foundation of success and the means by which it is achieved

Lao-Tzu
600 BC



Fantastic Mental Errors of History

- 1633 – Trial of Galileo



Error can be Dangerous!

Checklists – Non Cardiac Operation

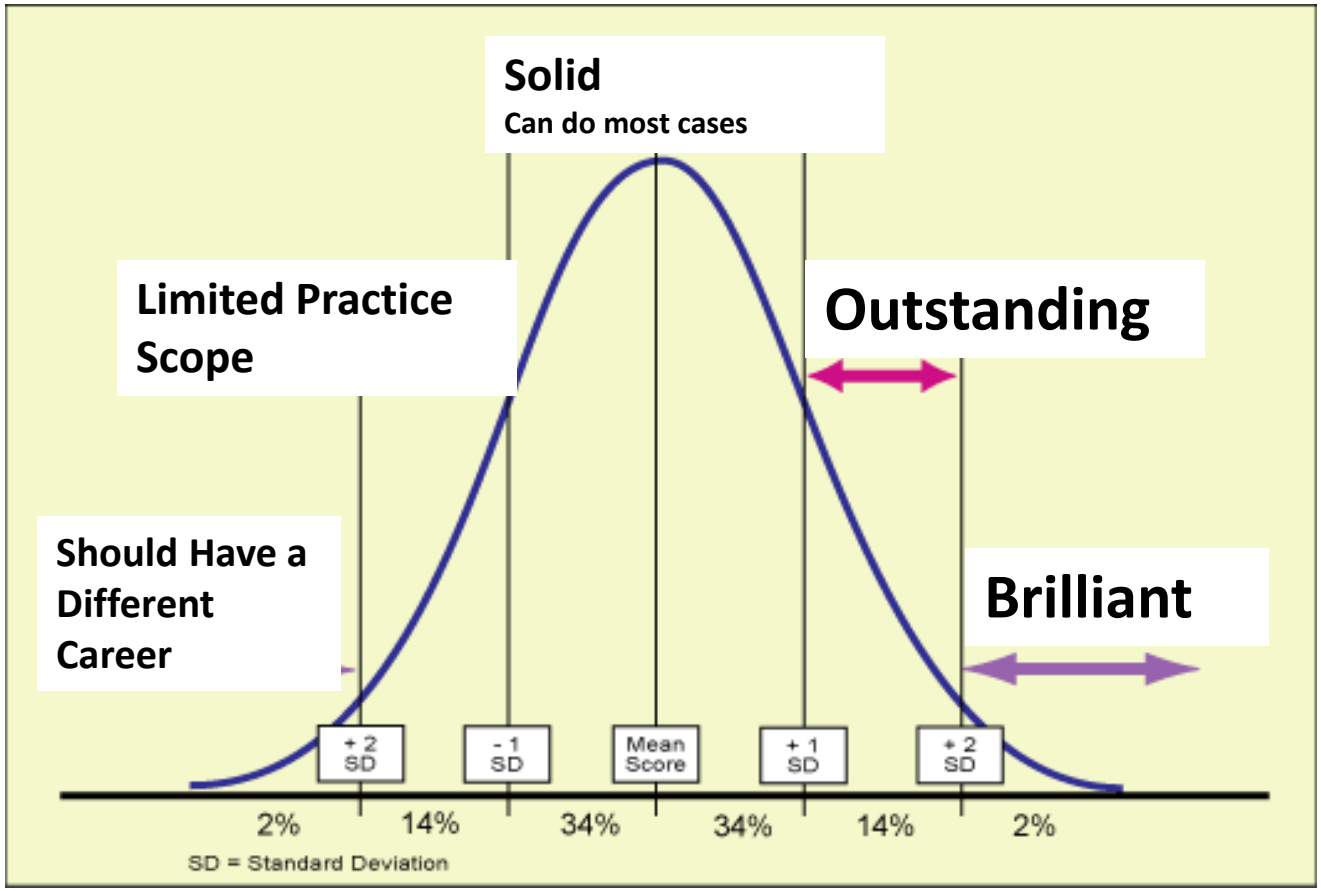
- Decreased Death - 50%
- Decreased Complications 50%

Haynes et al. N Engl J Med 2009; 360:491-499

The Science (art) of Dynamic Performance

Individual Expertise

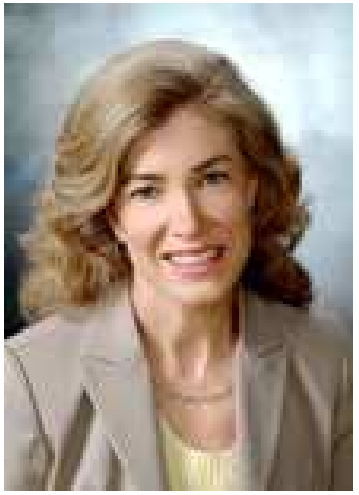
the focus for 100's of years



Value Based Health Care
Best Outcome

Fundamental restructuring

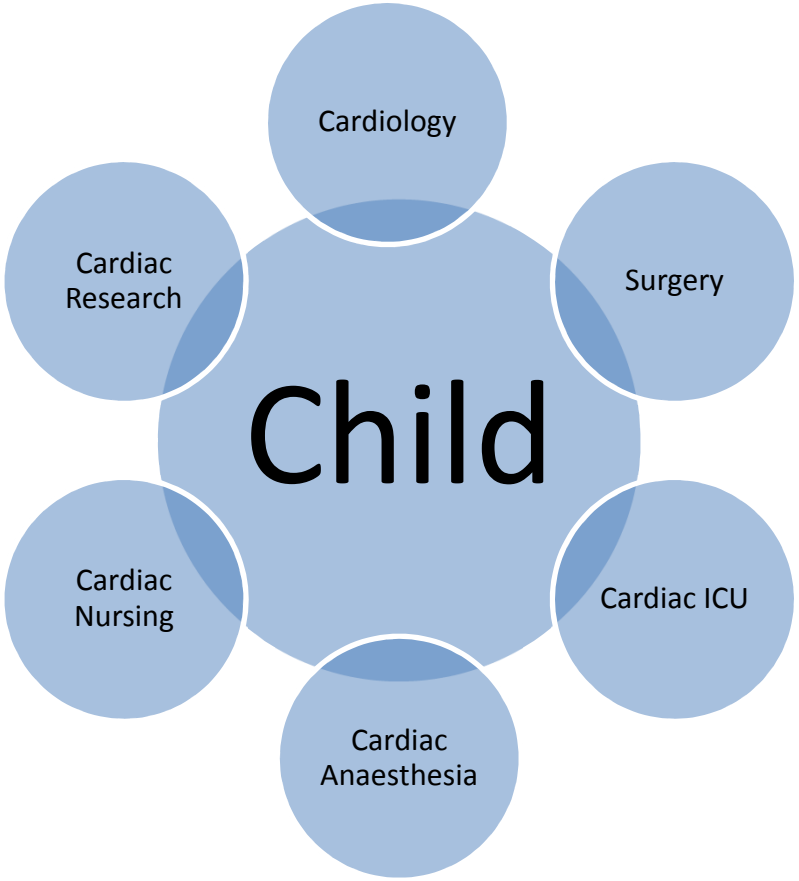
- Focus on a Disease Population
- 1 Business Unit
  - Specialty Teams
  - Work Side by Side
  - Special Buildings



Professor Michael Porter and Elizabeth Teisberg, Harvard Business School

Organizing for Sustainably

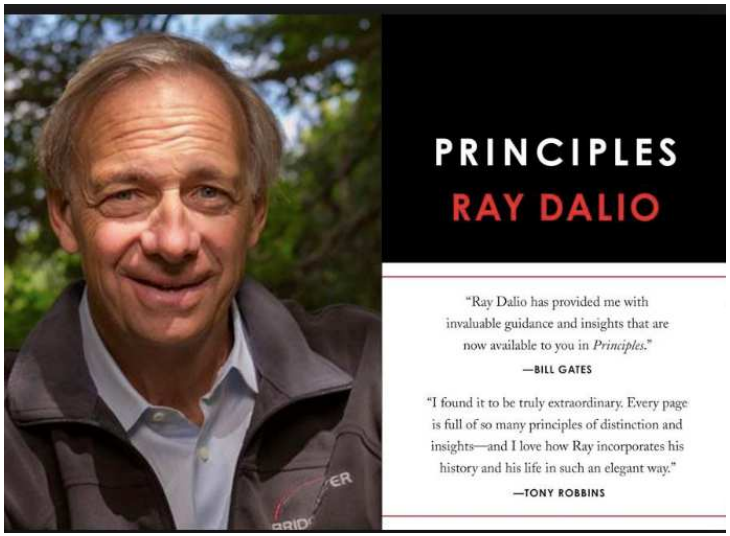
Heart Center



Functional vs Structural

Radical Truth and Transparency

Bridgewater Associates

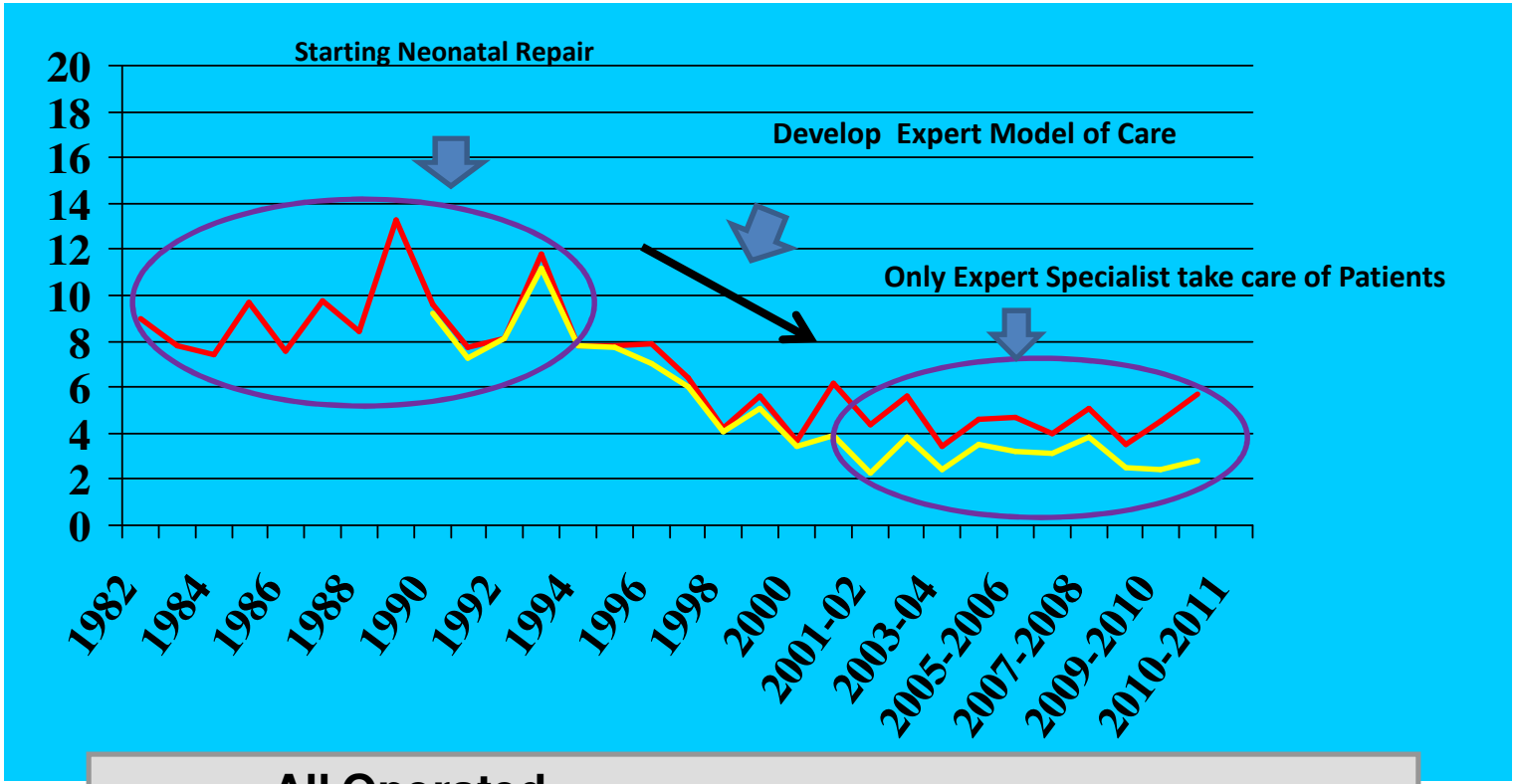


Idea Meritocracy
Believability weighting

We require people to be extremely open, air disagreements, test each other's logic, and view discovering mistakes and weaknesses as a good thing that leads to improvement and innovation.

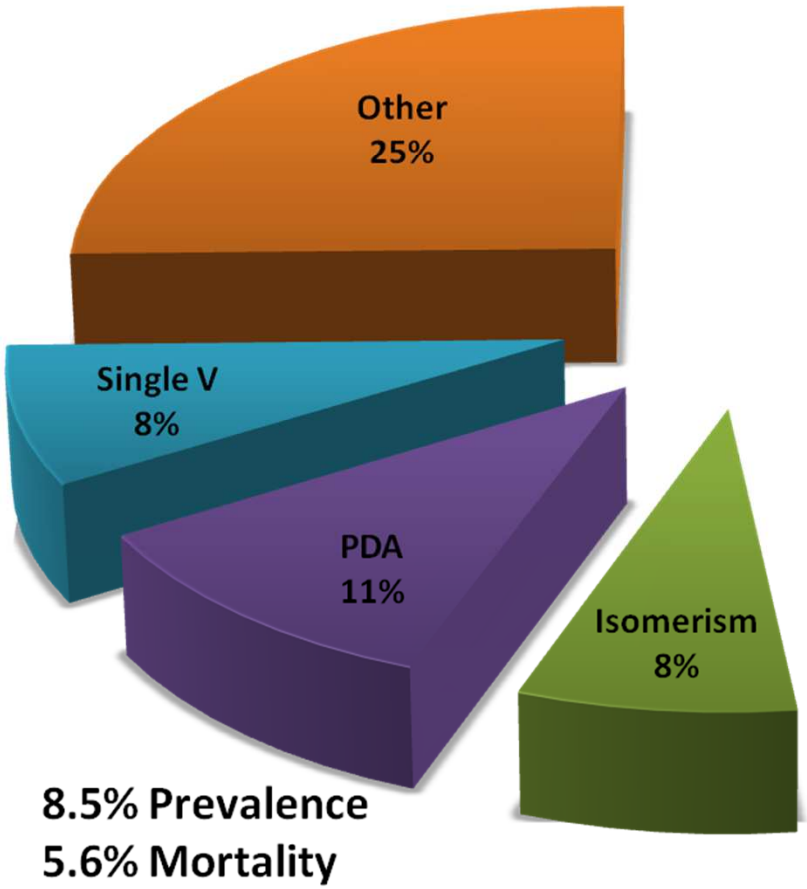
It is by continually striving together for the highest levels of truth and excellence that we create meaningful work and meaningful relationships.

Outcome Differences 1982 to 2011

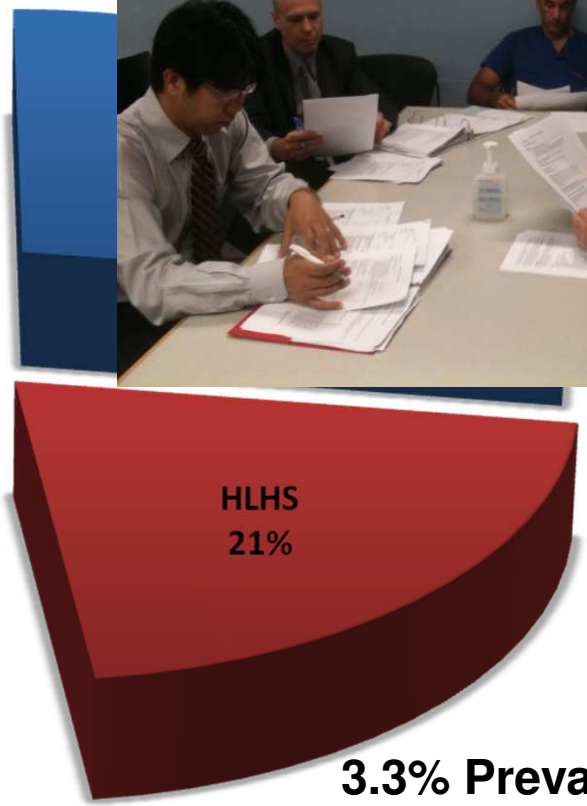


10 Year Mortality Review

Primary Operation



8.5% Prevalence
5.6% Mortality



3.3% Preval
17% Mortality

Schwartz
Humpl
Redington
Van Arsdell
Caldarone
Honjo

Error Definition

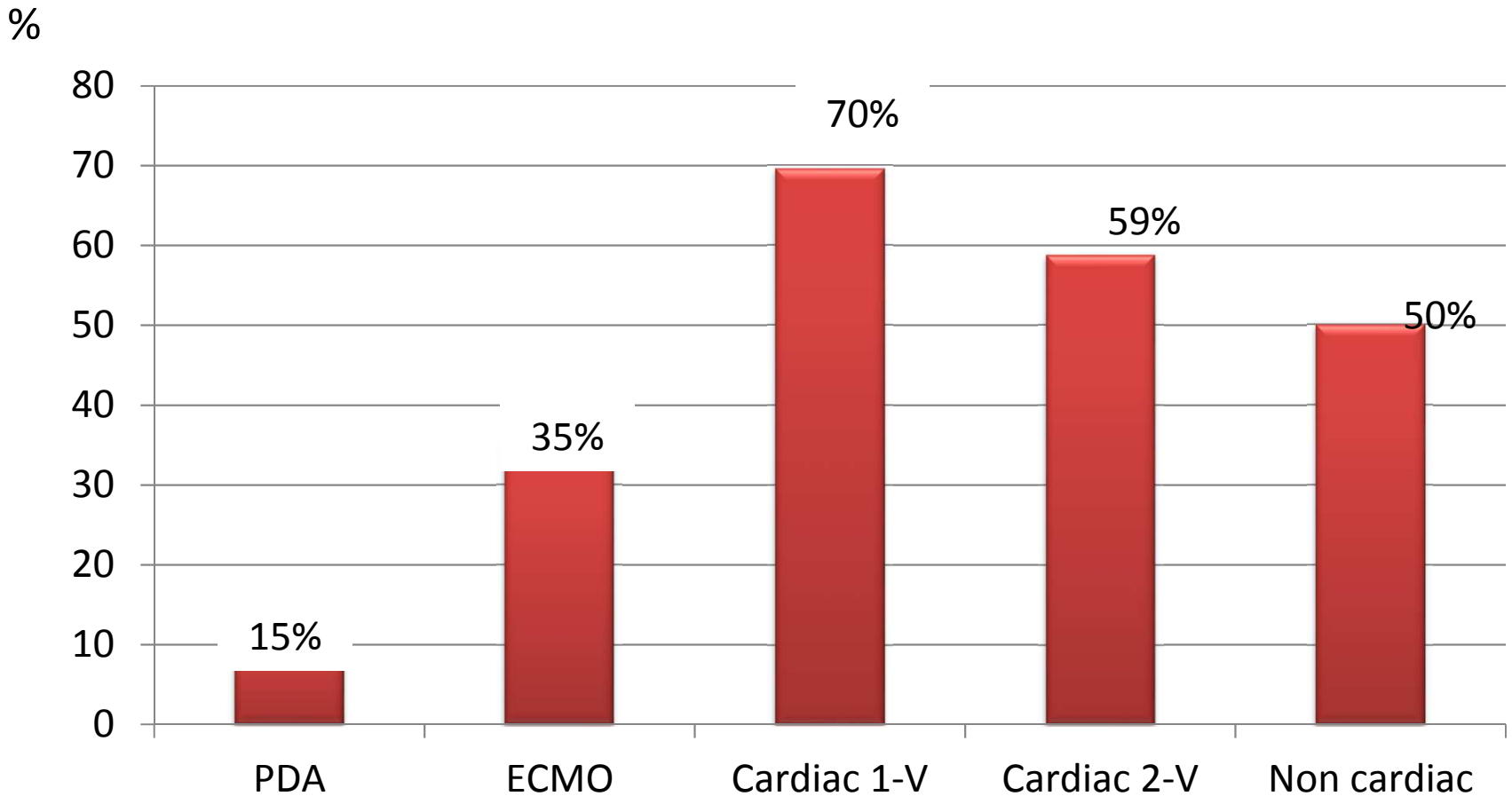
- ***Findings:***
  - ***less than optimal***
  - ***not*** *related to "****normal*** *patient* ***course****"*
- ***Question:***
  - ***Controllable consequence of a provider decision or intervention?***

YES

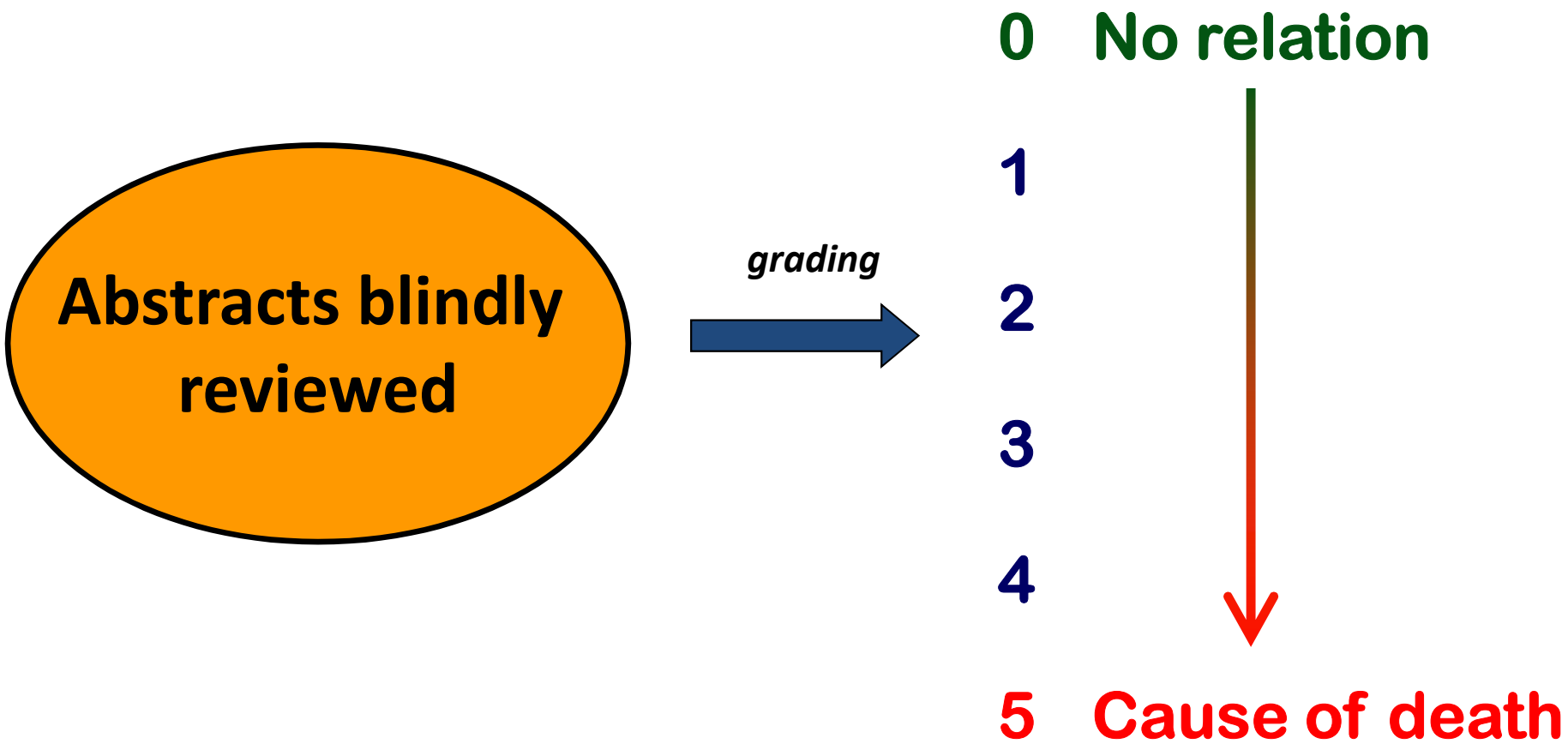
ERROR

10 Years of Mortality

Prevalence of Errors all Deaths



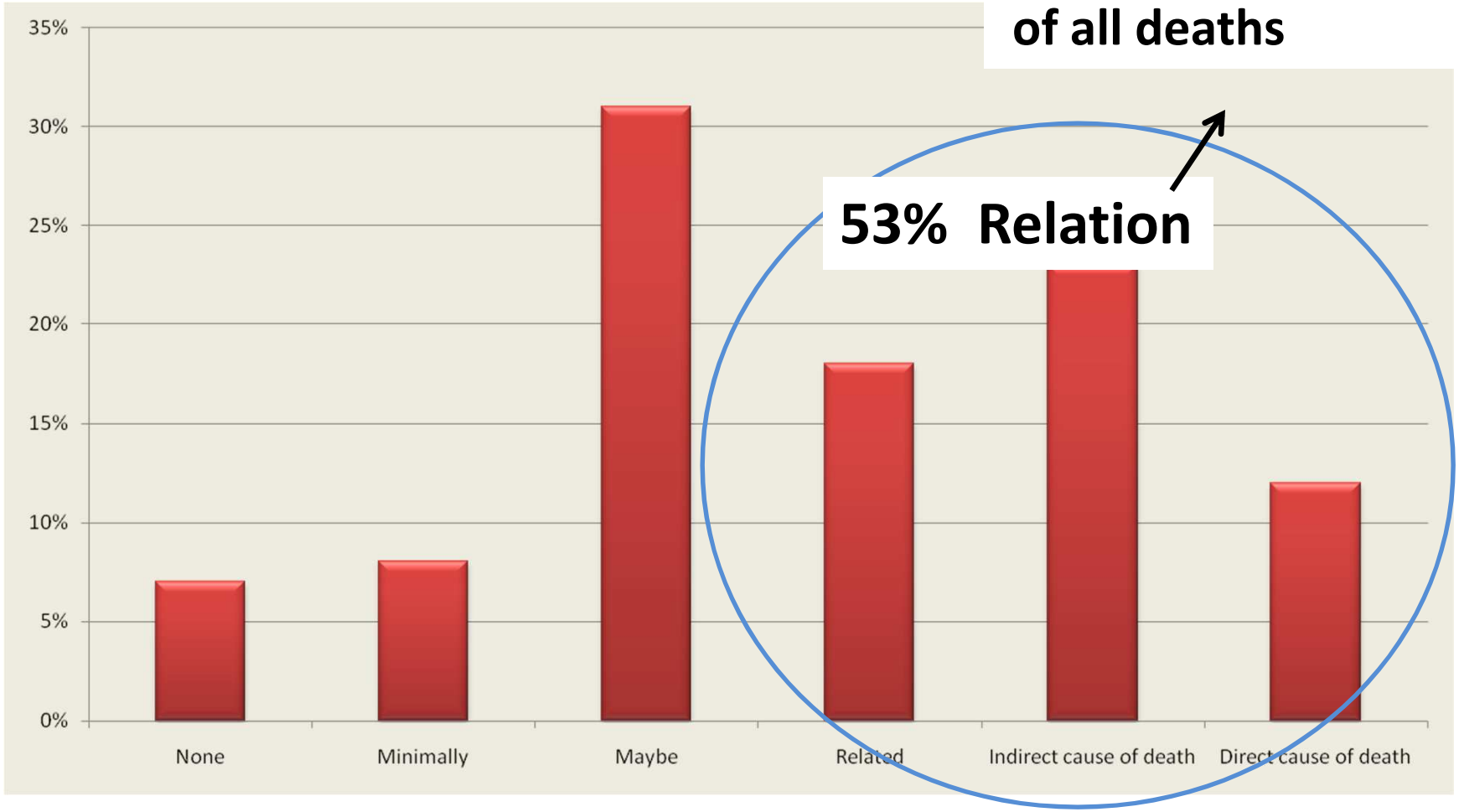
Causality – linking error to outcome



Jacques…. Van Arsdell et al, ACC 2011

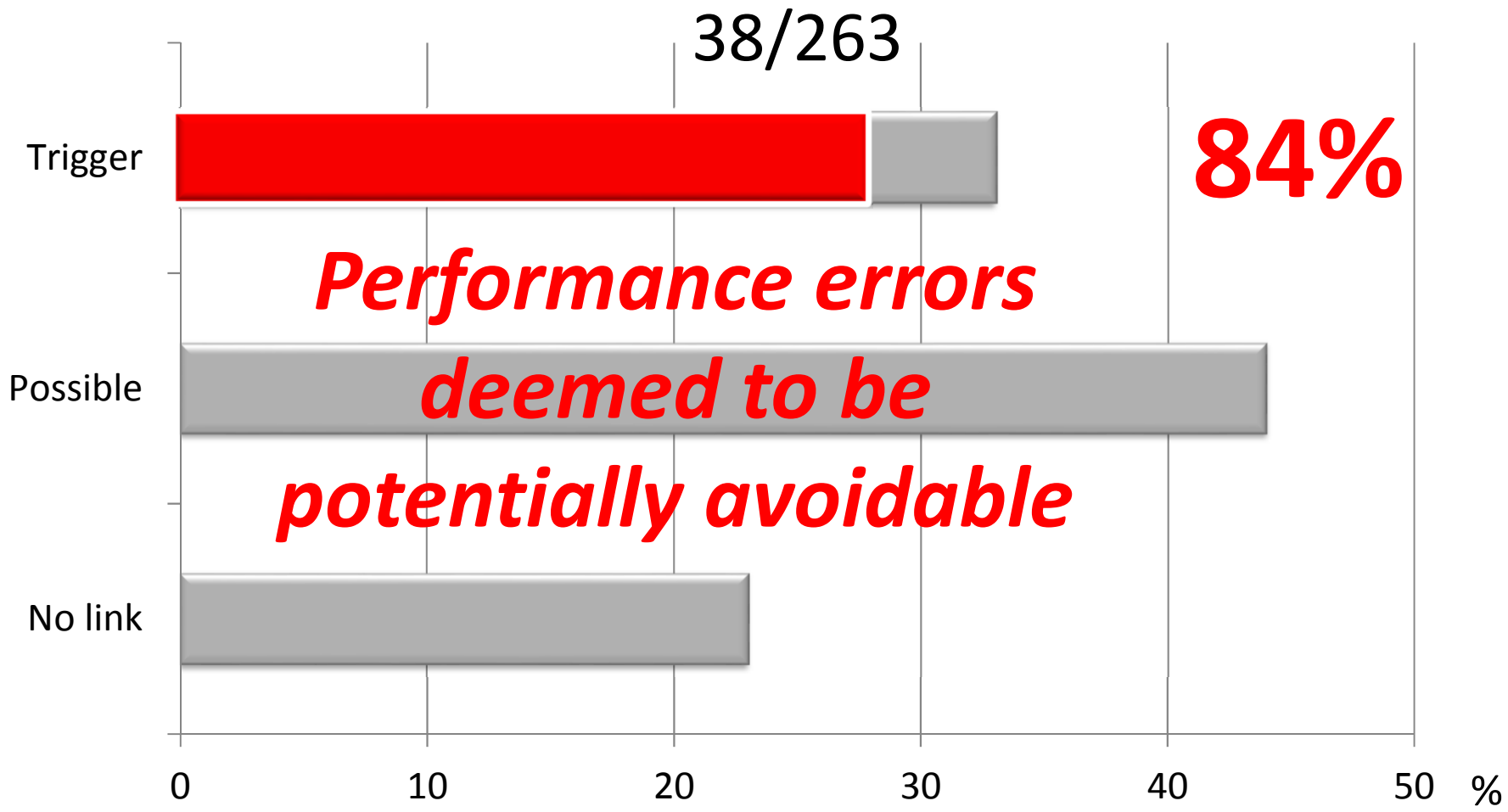
Likelihood of Error Causing Death

Translates to 30% of all deaths

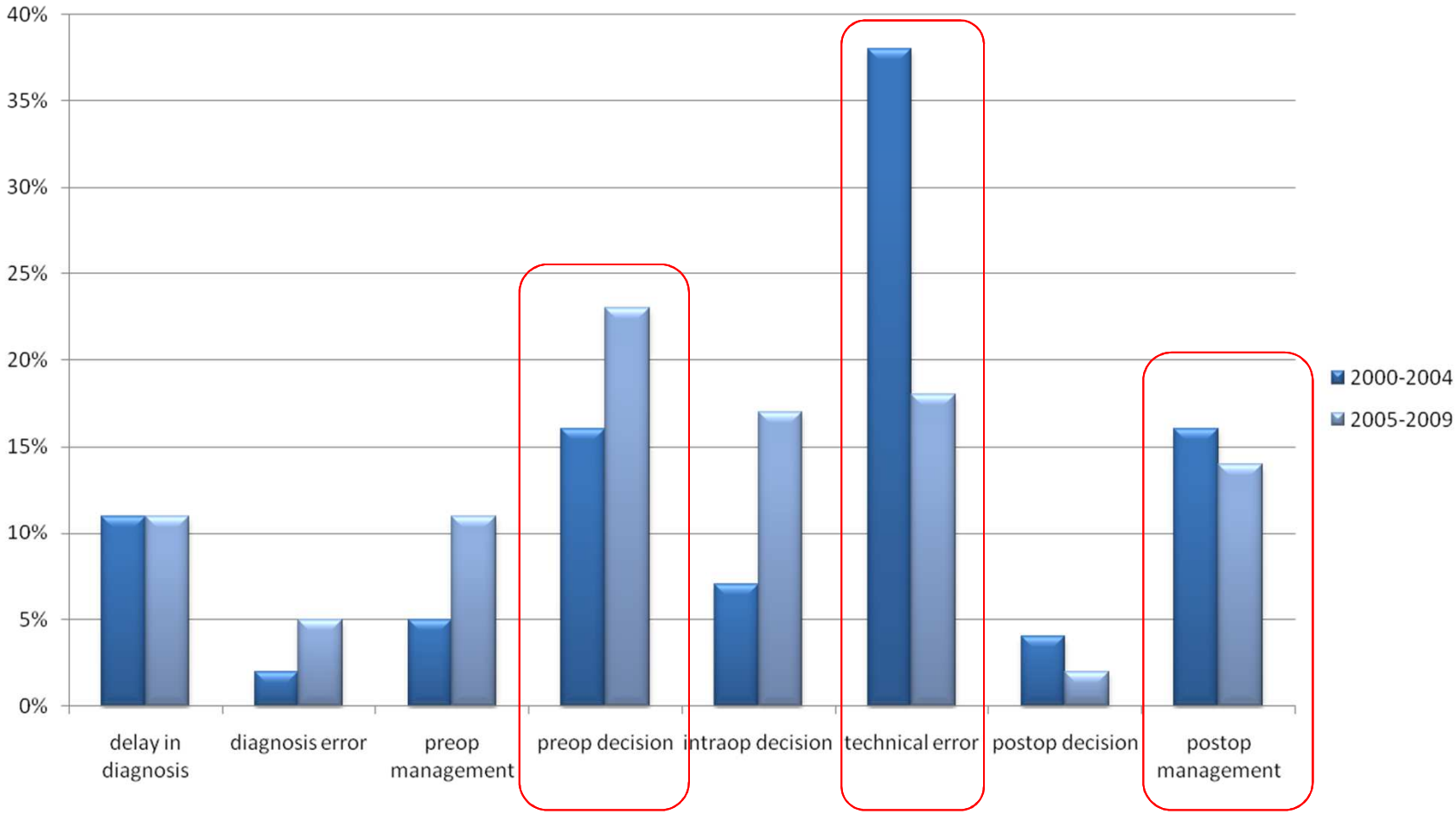


N=18	10	11	43	25	31	17

Causality – All Error Relation to Death



Error Wasn't Static



Effortful Learning

Beyond the Expert Model of Care

What About Cognitive Performance

- **1993 vs 1911 studies**
- **Grandmaster's today Superior**
  - **Grand Master**
    - **'58 – Fisher at 15**
    - **Karjakin (Ukraine) 12.5y**
  - **Better Store of Structured Knowledge**

Scientific American 2006– The Expert Mind

The R's of Great Care

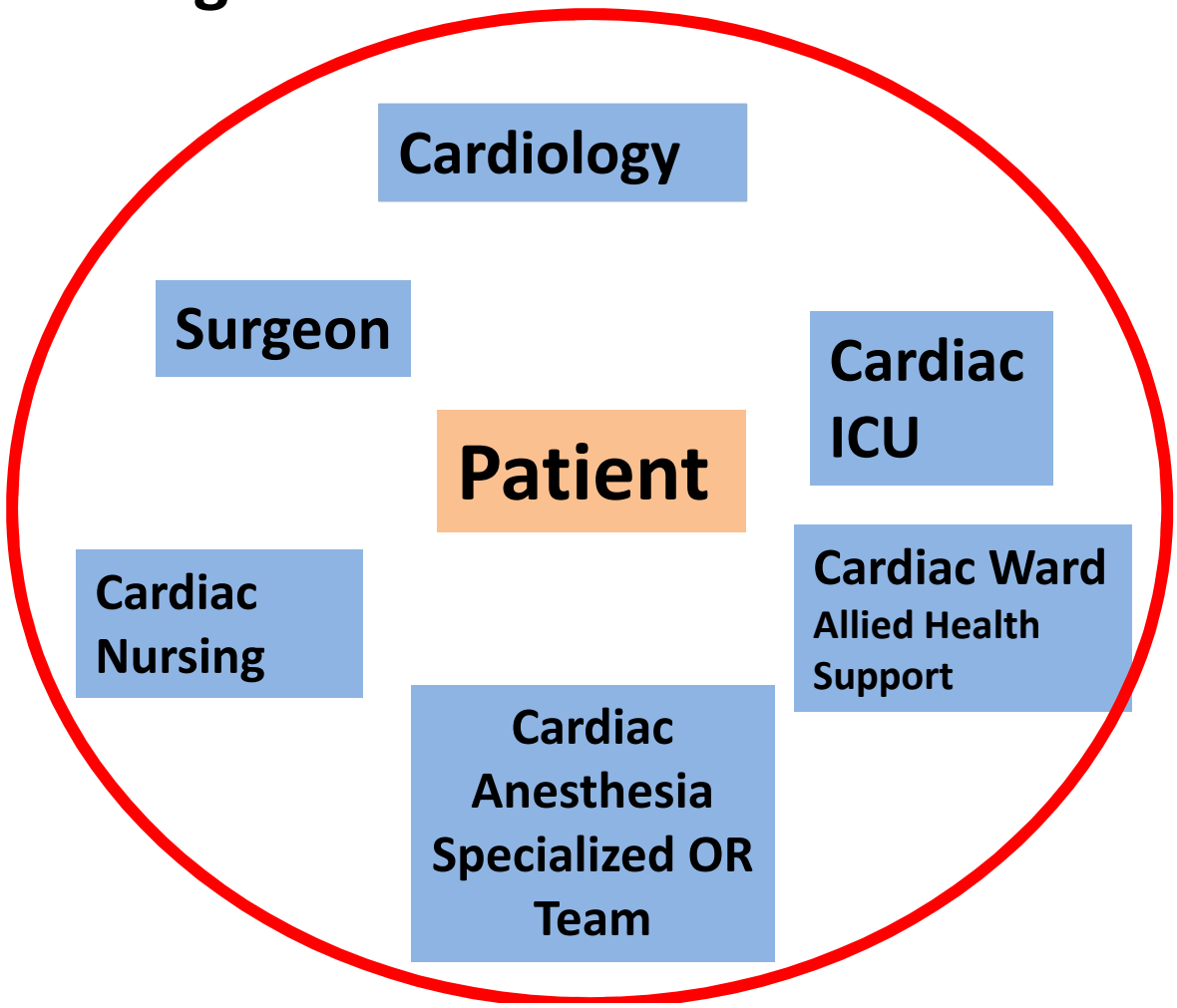
- Right Diagnosis
- Right Time for Surgery
- Right Operation
  - Right amount of time
  - Right residual lesions
- Right Anaesthetic care
- Right ICU care
- Right Ward Care

Weekly Performance Rounds

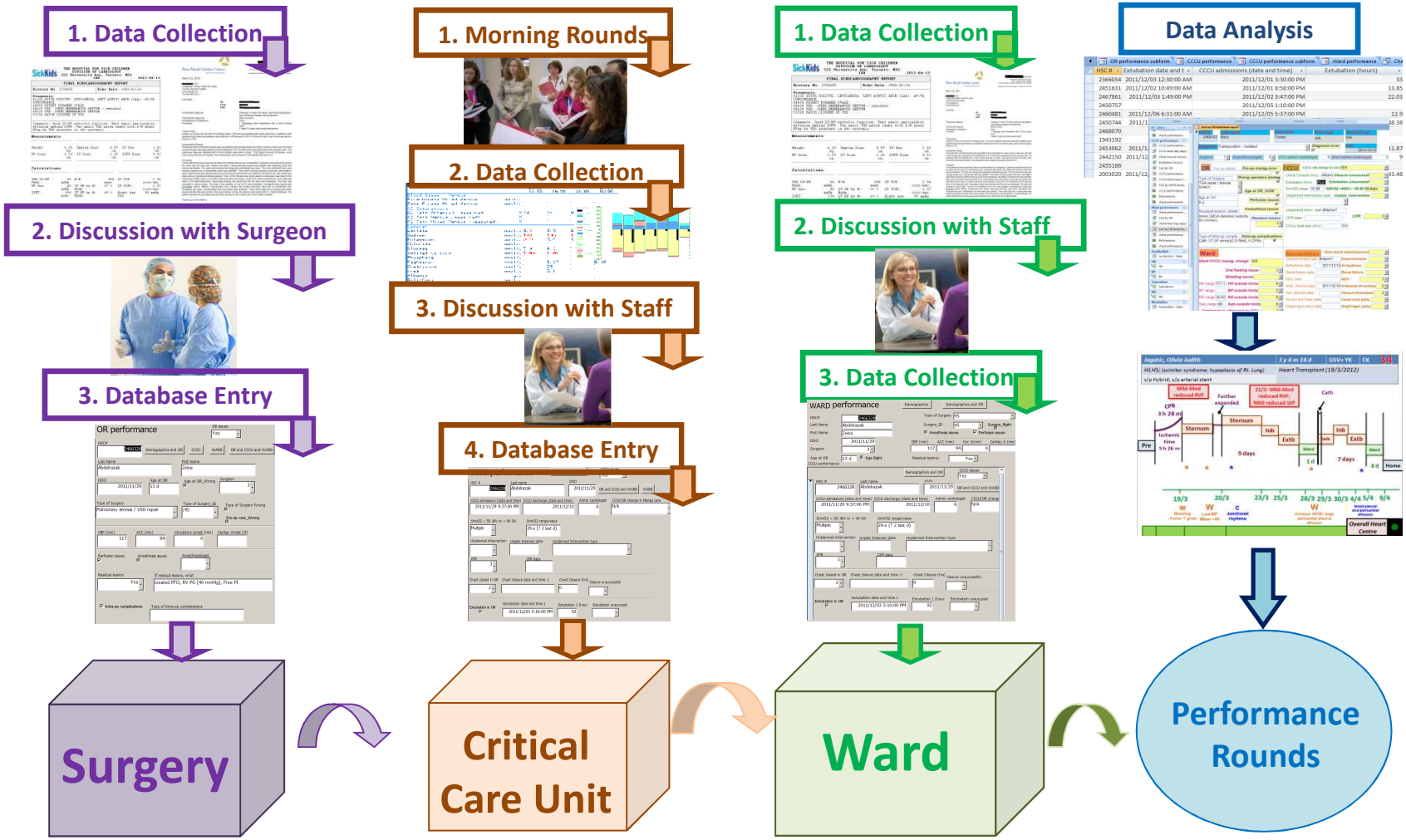
Improving Effortful Learning

Safe environment

Team Learning



Performance tracking initiative



Visual Picture of Patient Course and Team Performance

Open Chest ECMO

Completely Well

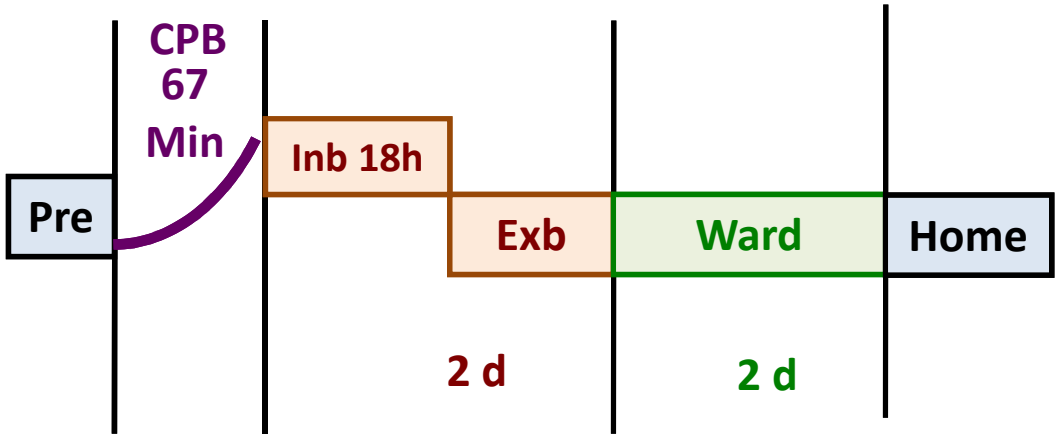
Overall Heart Centre

Complications

Preop OR ICU Ward Discharge

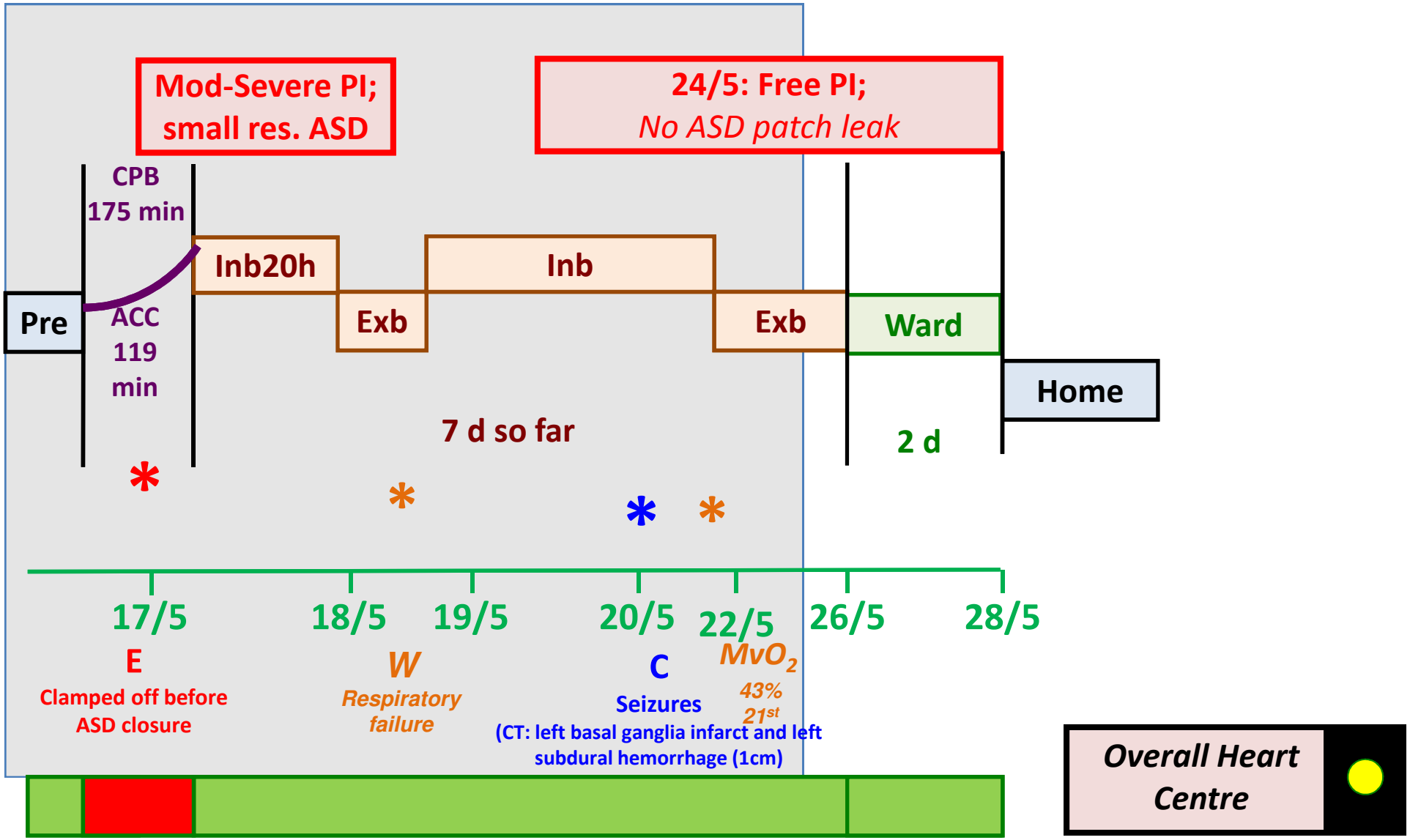
Name	*5 m 16 d*	Surgeon		3
HLHS	*BCPS, PA plasty and Sano conduit takedown*			
s/p Norwood Sano (Jan 2012)				

None



Overall Heart Centre

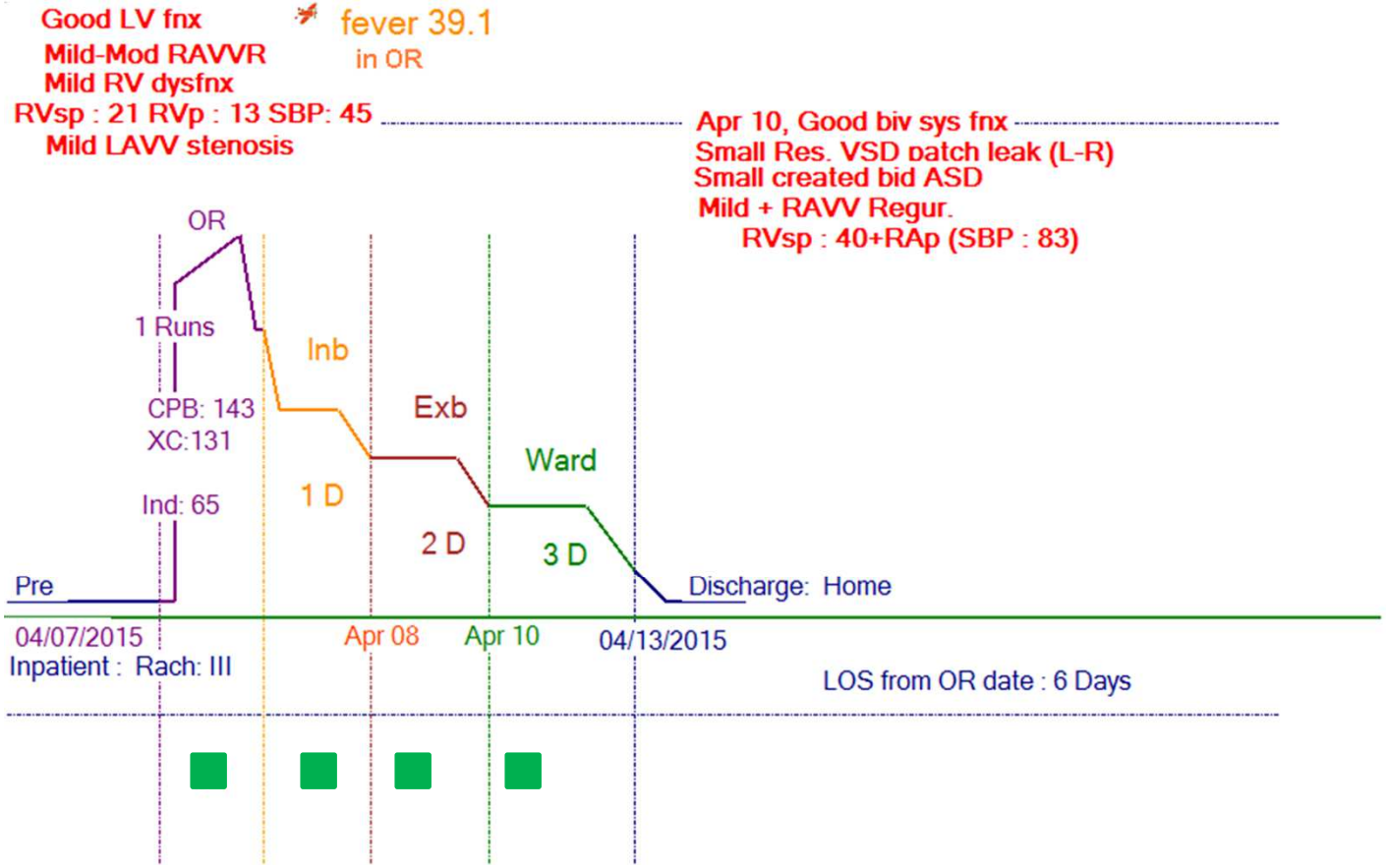
Name	*1 m 23 d*	surgeon	30
TGA/VSD/PS	*Arterial switch repair, VSD closure, sub-pulmonary resection, PDA ligation*		
s/p BAS (April 4th)			

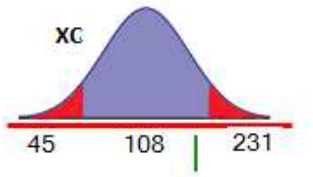


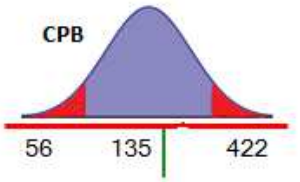
Name	Age	Weight	Surgeaon+Fellow	Anesth	ICU	Cardio
name	5m 25d	5.4 Kg	OH+ CH	ML	PL	EJ

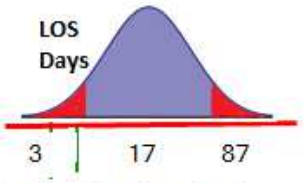
Diagnosis	Intervention
AVSD, Mild AVVR, Bil SVC	*Apr 07, AVSD Repair, PD cath insertion*

Other Diagnosis	Previous Intervention
T21, Hirshsprung's disease, GERD, FTT	









For this OR we have 0 patients
LOS calculated from OR date

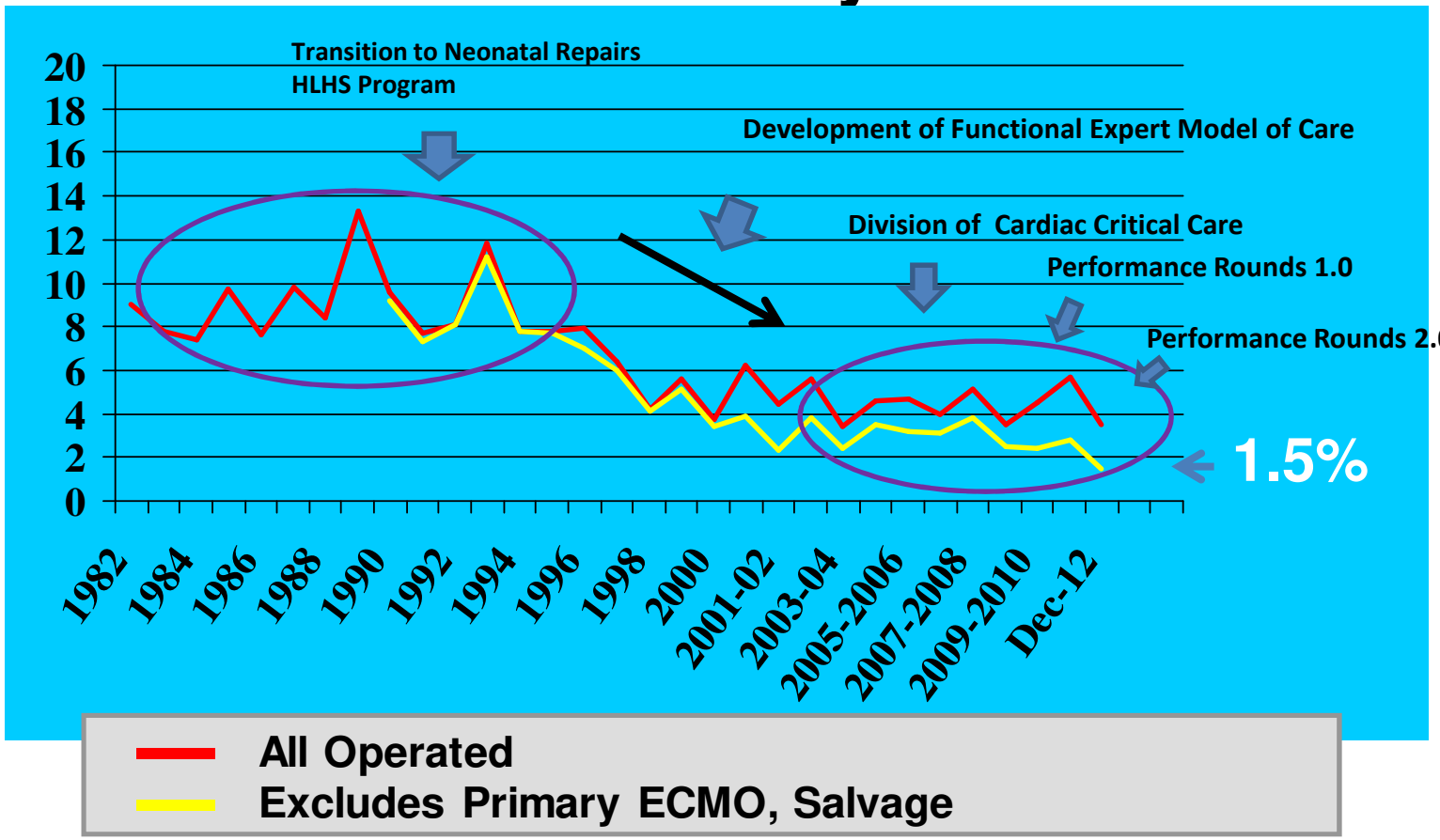
Aims of Performance Rounds

1. *Enabling blameless but accountable work by each team member*
2. *Closing the loop of awareness for each patient's clinical course*
3. *Engaging our staff in team learning*
4. *Structurally implementing major items learned*

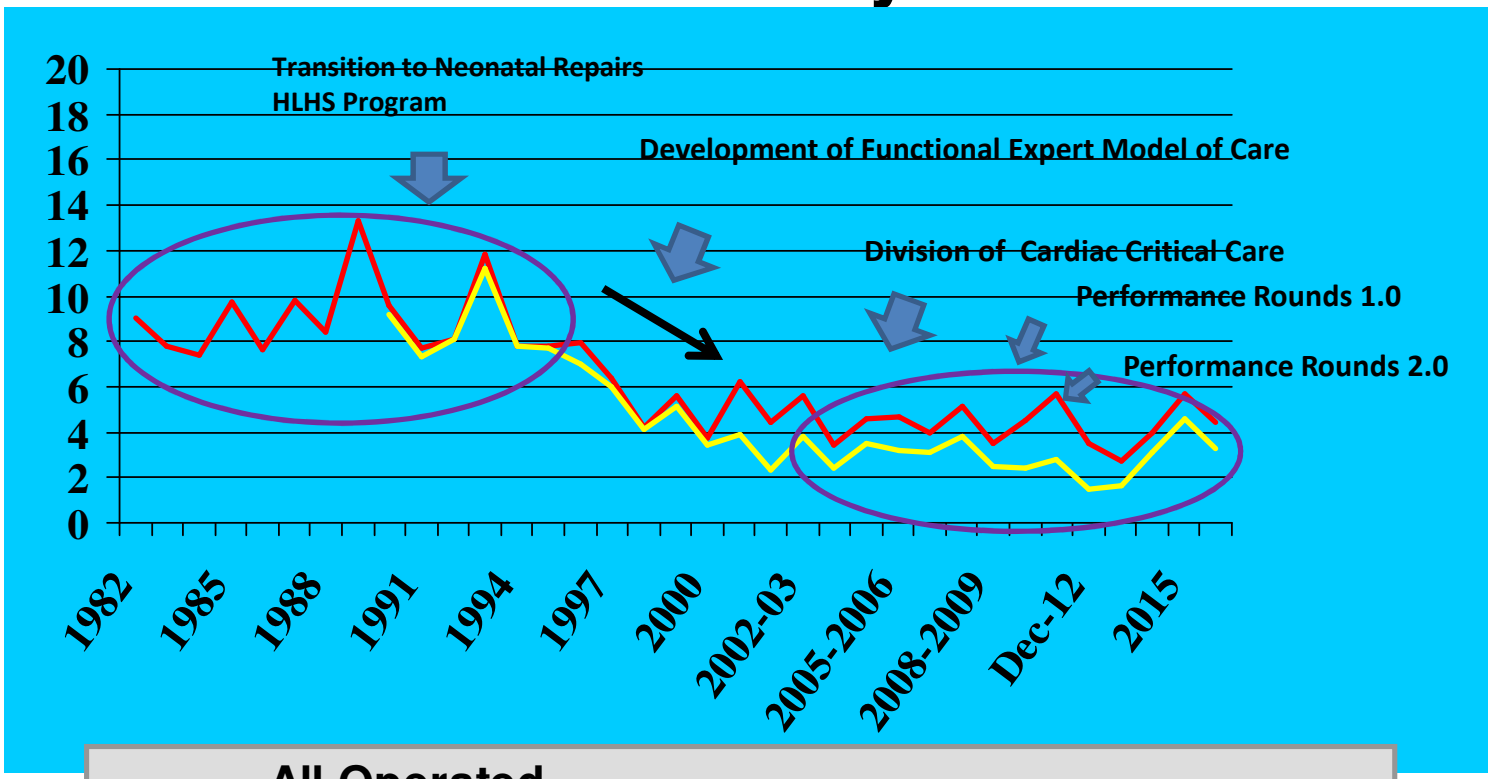
Confidentiality is essential to conducting a meaningful performance review. Accordingly, communications are to be kept confidential except insofar as will be required to carry on quality and patient safety recommendations flowing from this review.

Has all this had any Impact?

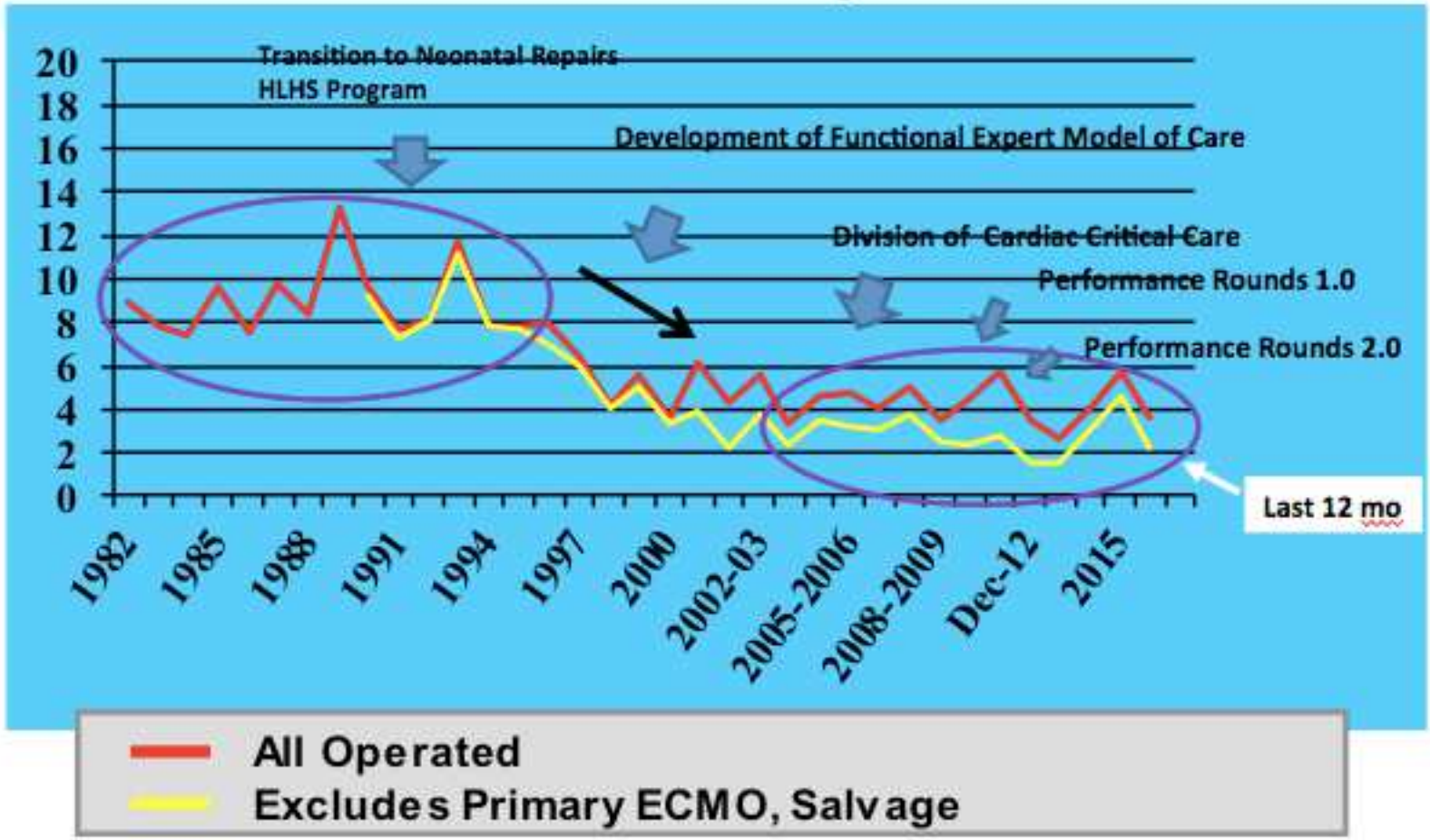
Mortality



Mortality


20
18
16
14
12
10
8
6
4
2
0
Transition to Neonatal Repairs
HLHS Program
Development of Functional Expert Model of Care
Division of Cardiac Critical Care
Performance Rounds 1.0
Performance Rounds 2.0
1982
1985
1988
1991
1994
1997
2000
2002-03
2005-2006
2008-2009
Dec-12
2015
All Operated
Excludes Primary ECMO, Salvage

Mortality


20
18
16
14
12
10
8
6
4
2
0
Transition to Neonatal Repairs
HLHS Program
Development of Functional Expert Model of Care
Division of Cardiac Critical Care
Performance Rounds 1.0
Performance Rounds 2.0
Last 12 mo
1982
1985
1988
1991
1994
1997
2000
2002-03
2005-2006
2008-2009
Dec-12
2015
All Operated
Excludes Primary ECMO, Salvage

Summary

- Culture – Be an orchestra
  - Meet a Standard of Care
  - Radical Transparency
  - Emotional Safety and Accountability
- Error is Inevitable – We need to manage it
- Failure → Data→ Hypothesis→Performance