

CARDIOLOGY  
2024

# Data Presentation and Analytics in Congenital Heart Care

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February 15, 2024



# Disclosures

Financial: None

Ideas based on experiences:

Founder/Executive Director of PC4

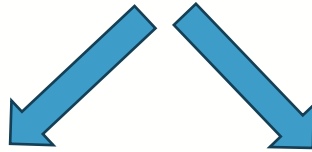
Quality and Safety Officer – University of Michigan Congenital Heart Center

Co-Director, CCHMC Heart Institute Outcomes Program

Division Director

# Why do we analyze and present data in CHD centers?

To assess and study our performance



Improve

Maintain excellence

Motivation/Inspiration

Engagement

Transparency

# It works!

JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY  
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PUBLISHED BY ELSEVIER

VOL. 74, NO. 22, 2019

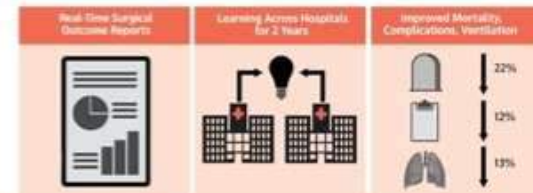
## Improvement in Pediatric Cardiac Surgical Outcomes Through Interhospital Collaboration

Michael Gales, MD, MPH, MS,<sup>a</sup> Sara K. Pasquali, MD, MHS,<sup>a</sup> Mousumi Banerjee, PhD,<sup>b</sup> Justin B. Dimick, MD, MPH,<sup>c</sup> John D. Birkmeyer, MD,<sup>d</sup> Wenyang Zhang, MS,<sup>e</sup> Jeffrey A. Altman, MD,<sup>f</sup> Nikhil Chanani, MD,<sup>g</sup> David S. Cooper, MD,<sup>f</sup> John M. Costello, MD, MPH,<sup>h</sup> J. William Gaynor, MD, PhD,<sup>i</sup> Nancy Ghanayem, MD,<sup>j</sup> Jeffrey P. Jacobs, MD,<sup>k</sup> John E. Mayer, MD,<sup>l</sup> Richard G. Ohye, MD,<sup>m</sup> Mark A. Scheurer, MD,<sup>n</sup> Steven M. Schwartz, MD,<sup>o</sup> Sarah Tabbutt, MD, PhD,<sup>o</sup> John R. Charpie, MD, PhD<sup>o</sup>

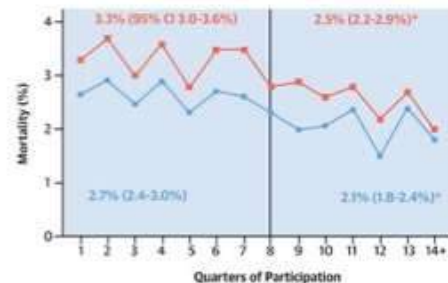


### CENTRAL ILLUSTRATION: Improving Pediatric Cardiac Surgical Outcomes: Change in Post-Operative Mortality Over Time

#### A Improvement in Cardiac Surgical Outcomes at Pediatric Cardiac Critical Care Consortium Hospitals



#### B Case-Mix Adjusted Mortality by Quarter



Gales, M. et al. J Am Coll Cardiol. 2019;74(22):2786-95.

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# How can data presentation and analytics improve congenital heart care?

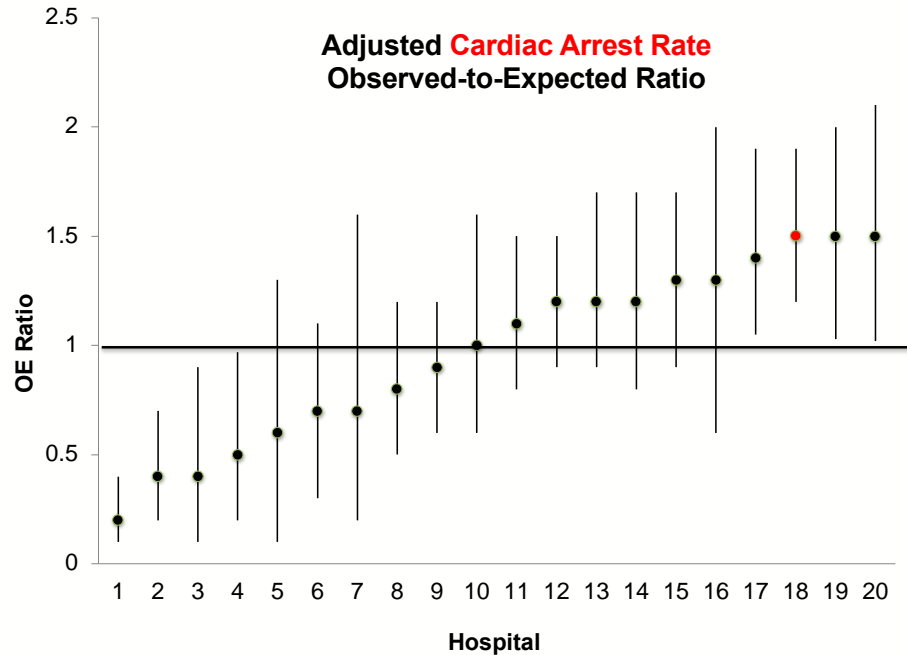
Data Culture

Content

Style

Presenter

Audience



# Translating data to performance: Data Culture



Data integrity

- Timely
- Complete
- Accurate

Develop facileness with visualizing  
and interpreting analytic reports

Consistent – content/frequency

Published in final edited form as:

*Cardiol Young*. 2016 August ; 26(6): 1090–1096. doi:10.1017/S1047951115001833.

## Data integrity of the Pediatric Cardiac Critical Care Consortium (PC<sup>4</sup>) clinical registry

Michael Gaies<sup>1</sup>, Janet E. Donohue<sup>2</sup>, Gina M. Willis<sup>2</sup>, Andrea T. Kennedy<sup>3</sup>, John Butcher<sup>4</sup>, Mark A. Scheurer<sup>5</sup>, Jeffrey A. Alten<sup>6</sup>, J. William Gaynor<sup>7</sup>, Jennifer J. Schuette<sup>8</sup>, David S. Cooper<sup>4</sup>, Jeffrey P. Jacobs<sup>9</sup>, Sara K. Pasquali<sup>1</sup>, and Sarah Tabbutt<sup>10</sup>

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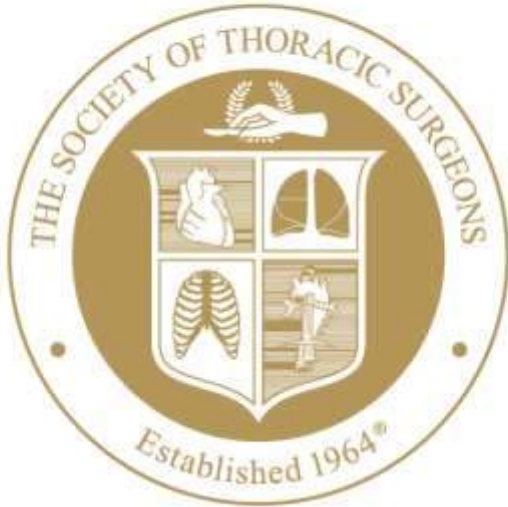
# Translating data to performance: Content

“Measure what you care about, and care about what you measure”

- Data that you present should align with heart center goals/mission
- Data should matter to the audience
- Data should focus on team performance (“what defines us as excellent?”)
- Data should lead to insights about how to provide care or run operations (improvement or maintaining excellence)

# Translating data to performance: Content

DATA ANALYSES OF  
THE SOCIETY OF THORACIC SURGEONS  
CONGENITAL HEART SURGERY DATABASE



LEGEND: ■ Other Sites ■ Aggregate - All 50% Confidence Interval

Mortality

IN-HOSPITAL MORTALITY



Any Postop Complications

ANY POSTOP COMPLICATION



Resource Utilization (Medians)

VENTILATION LOS



# Translating data to performance: Content



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# Translating data to performance: Content

- Clinical outcomes (beyond surgical mortality, relevant to subsections)
- Operations/efficiency
- Patient and family satisfaction
- Employee satisfaction
- Heart center financial performance

# Translating data to performance: Style

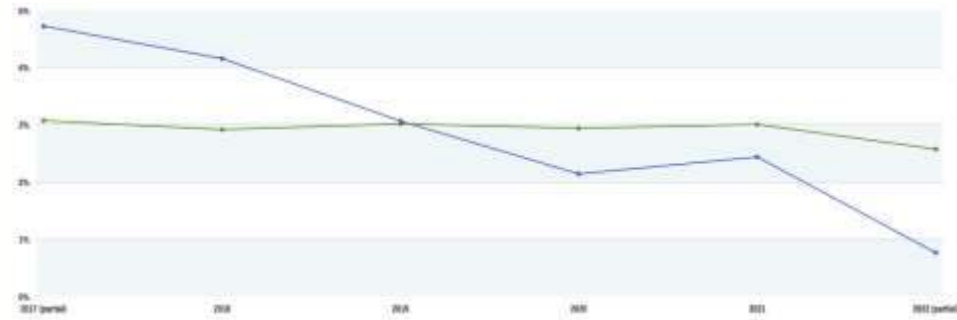
## Adjusted postoperative CA rate

*CICU performance – adjusted for postop illness severity*



## Adjusted postoperative CA rate

*CICU performance – adjusted for postop illness severity*



# Translating data to performance: Style



## Transplant Survival Rates \*

### 1 Year Survival

1/2020 – 6/2022

95.45%

Actual

Expected

90.57%

# Translating data to performance: Audience

- Everyone!
- Limit size to encourage discussion
- Those who can translate data into performance

# Translating data to performance: Presenter

- Know the data – inside & out
- Know how to present the data to those less facile
- Motivation/inspiration
- Clinical credibility



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Thank you for your attention

Questions?

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