How Informational Measures Inform Your Practice (+ Are The Basis of Change)

Douglas A Colquhoun, MB ChB, MSc, MPH

Clinical Lecturer in Anesthesiology

Division of Critical Care Medicine

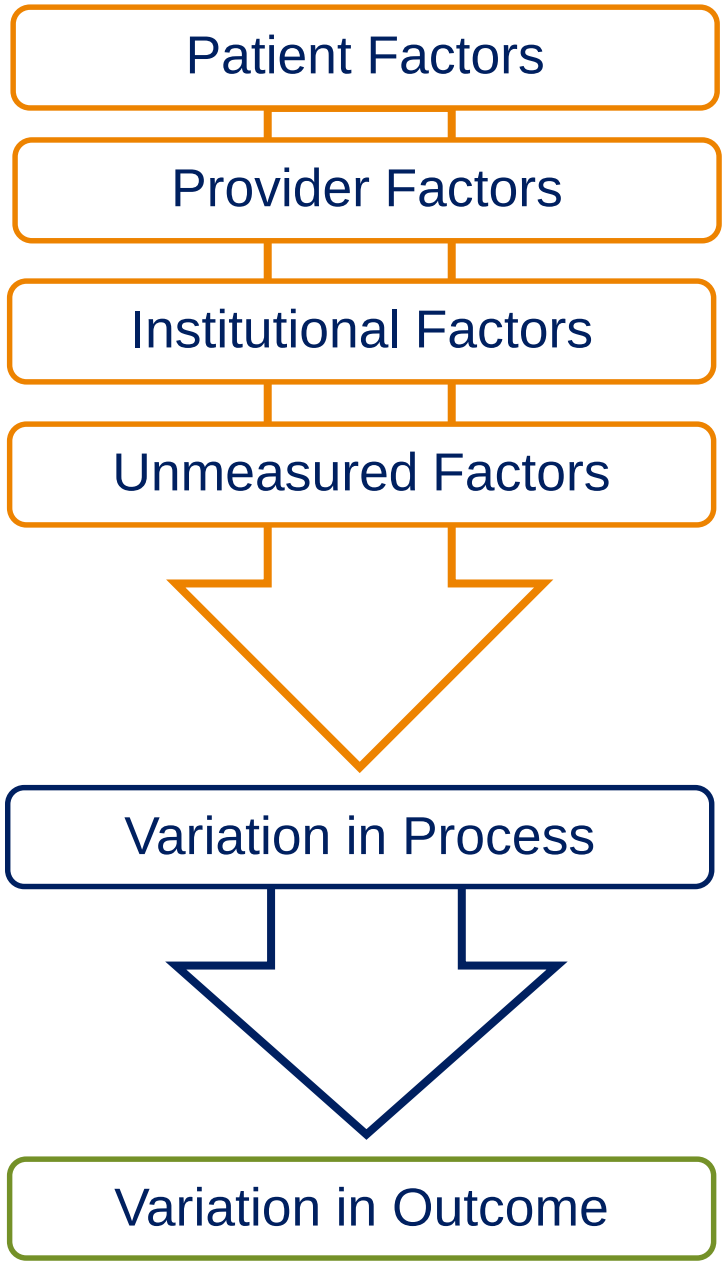
Department of Anesthesiology

University of Michigan Medical School

MPOG
MULTICENTER PERIOPERATIVE OUTCOMES GROUP

Aim for today:

- Variation in our processes of care exists
  - Some is the difference between best practice and not.
  - Much of it reflect diversity of practice in the absence defined best practice.
- We need to measure variation
  - Variation of Process contributes to Variation of Outcome
- We need to empower your discussions within your practice

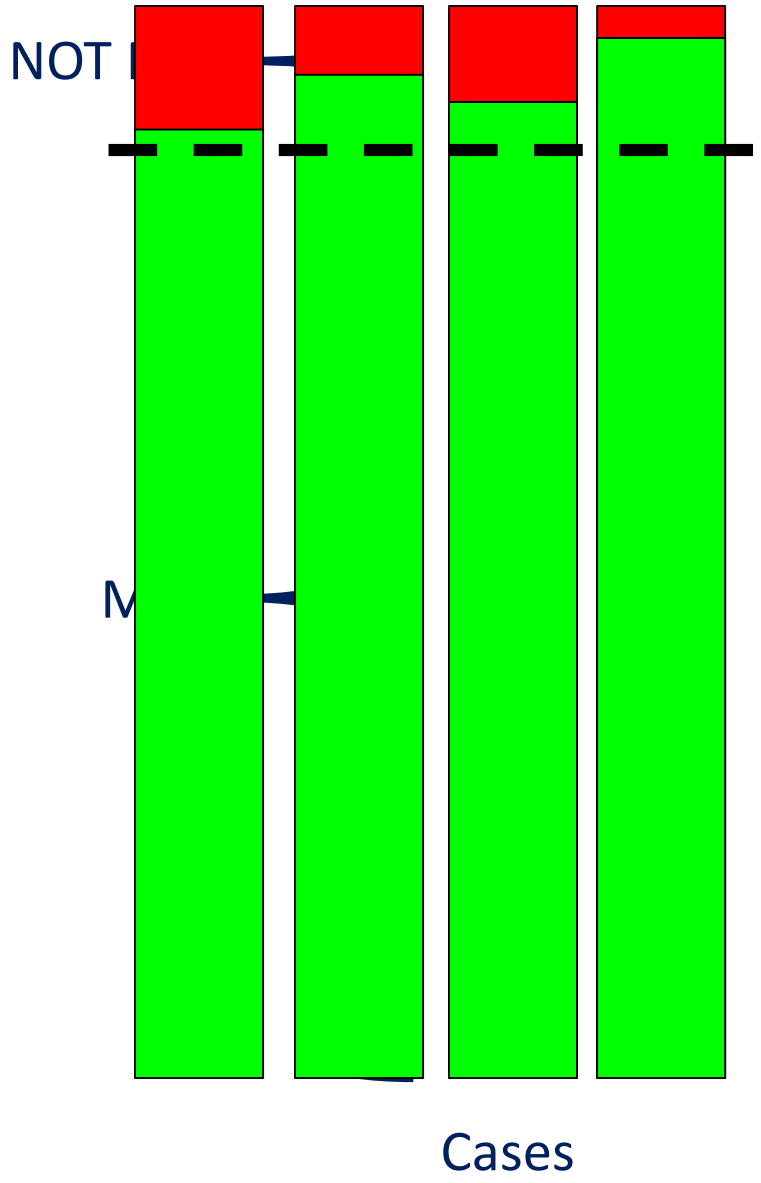


Types of Measures: Current

- PROCESS Measures:
  - PULM 01 - Percentage of cases with median tidal volumes less than 10 ml/kg
  - BP 01 - Percentage of unique case-staff instances that sustained intraoperative hypotension was avoided
- OUTCOME Measures:
  - AKI 01 - Percentage of cases that creatinine does not increase more than 1.5 times within 7 days.
  - MED 01 - Percentage of cases that avoided did not require the use of nalaxone or flumazenil
- Both have a standard and are either MET or NOT MET.
- We assign thresholds for success of the measure (usually 90%)
- Purpose: Ensure Certain Practices Are Met (Process Measures)
  Ensure Certain Outcomes Are Achieved (Outcome Measures)
- Drawback: But don't comment on WHAT variation exists (or WHY)

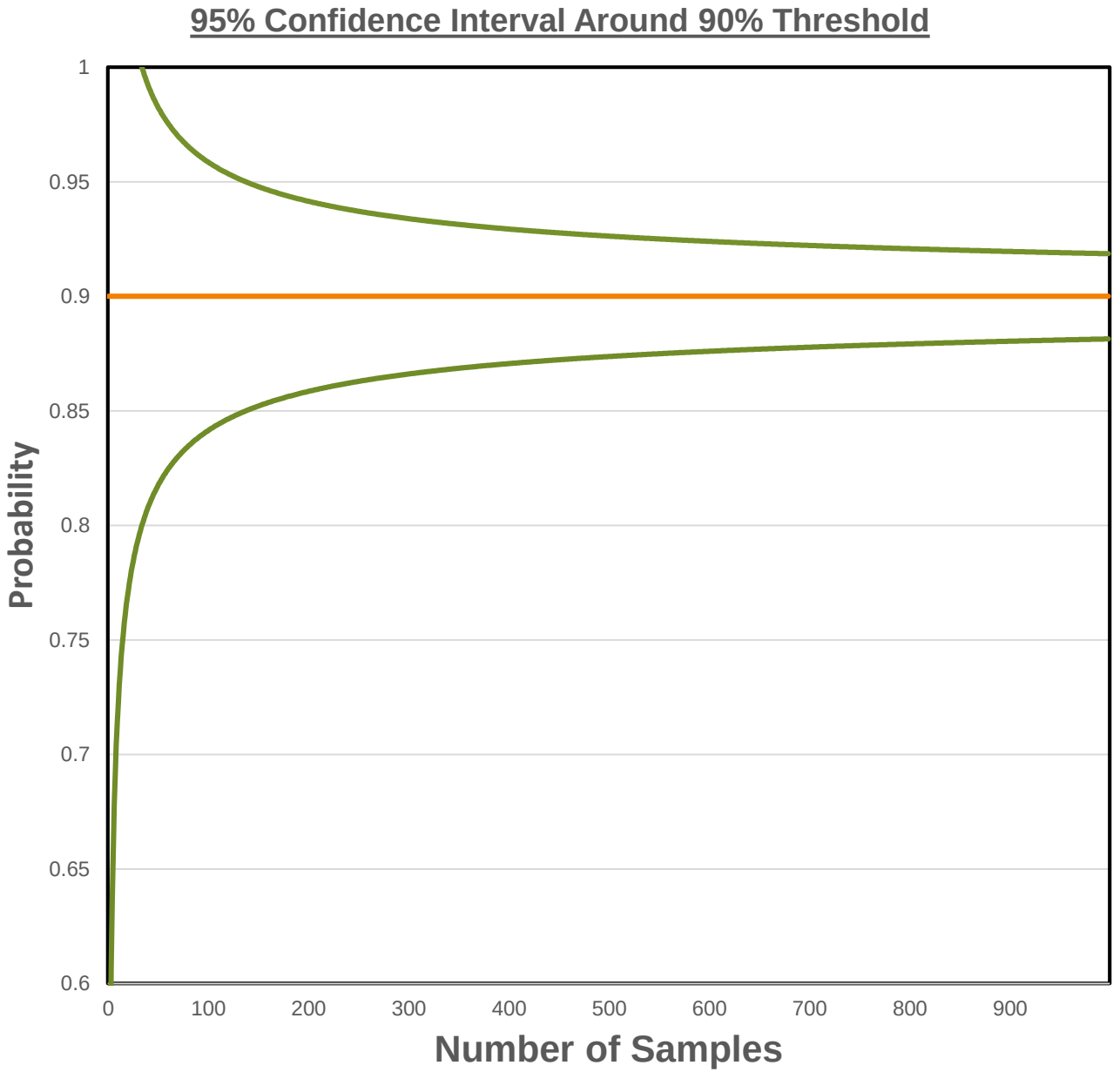
Understand our Current Measures

- Many of measures are PROCESS measures, some are OUTCOME
- PROCESS Measures are typically uncontroversial practices
- Our threshold is typically 90%
- 10% can be outlier cases:
  - Errors in documentation
  - “Edge cases” not factored into measure design
  - Exceptions to the “rule”
  - If cases fail… need to ask WHY? Is there a SYSTEMIC cause?
- All of these hypothetical providers MET THRESHOLD
  - We don’t make differentiations between them
  - But where is the opportunity to change our practice?



Current Context

- Many of our measures are AT or VERY NEAR threshold at BCBS sites
- Differences of 1-2% are not significant until VERY HIGH sample sizes encountered
- DECISION: Where do focus our energy?



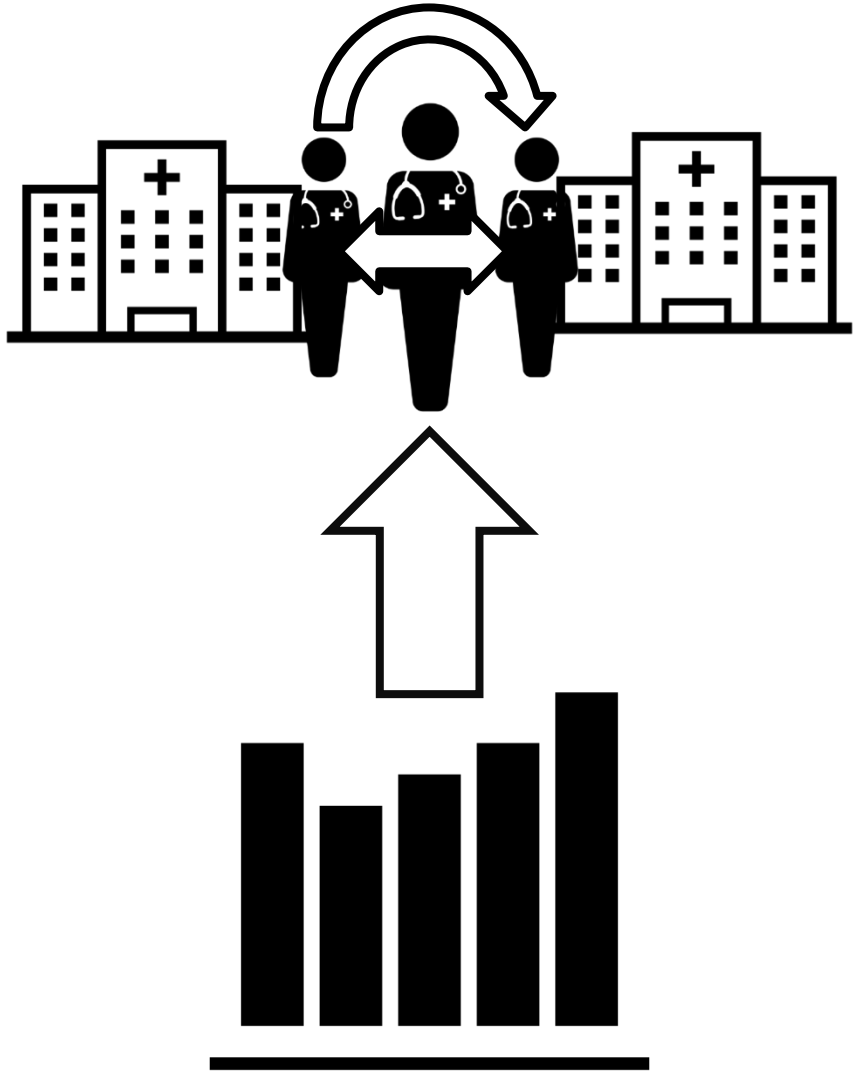
Types of Measures: Additional Tool

- INFORMATIONAL Measures:
  - Opioid Equivalence
  - PEEP

- Don’t have a STANDARDS or THRESHOLDS

- Purpose: Allow comparisons about approaches to aspects of case management

  Facilitate discussion within and across sites



Picture Credit:
bar chart by Musmellow from the Noun Project
Hospital by Raden Situbondo from the Noun Project
doctors by Wilson Joseph from the Noun Project

Comparison

Measure Type
Idea
Outcome
Threshold
Evidence Base
Response

EXAMPLE: Opioid Equivalency

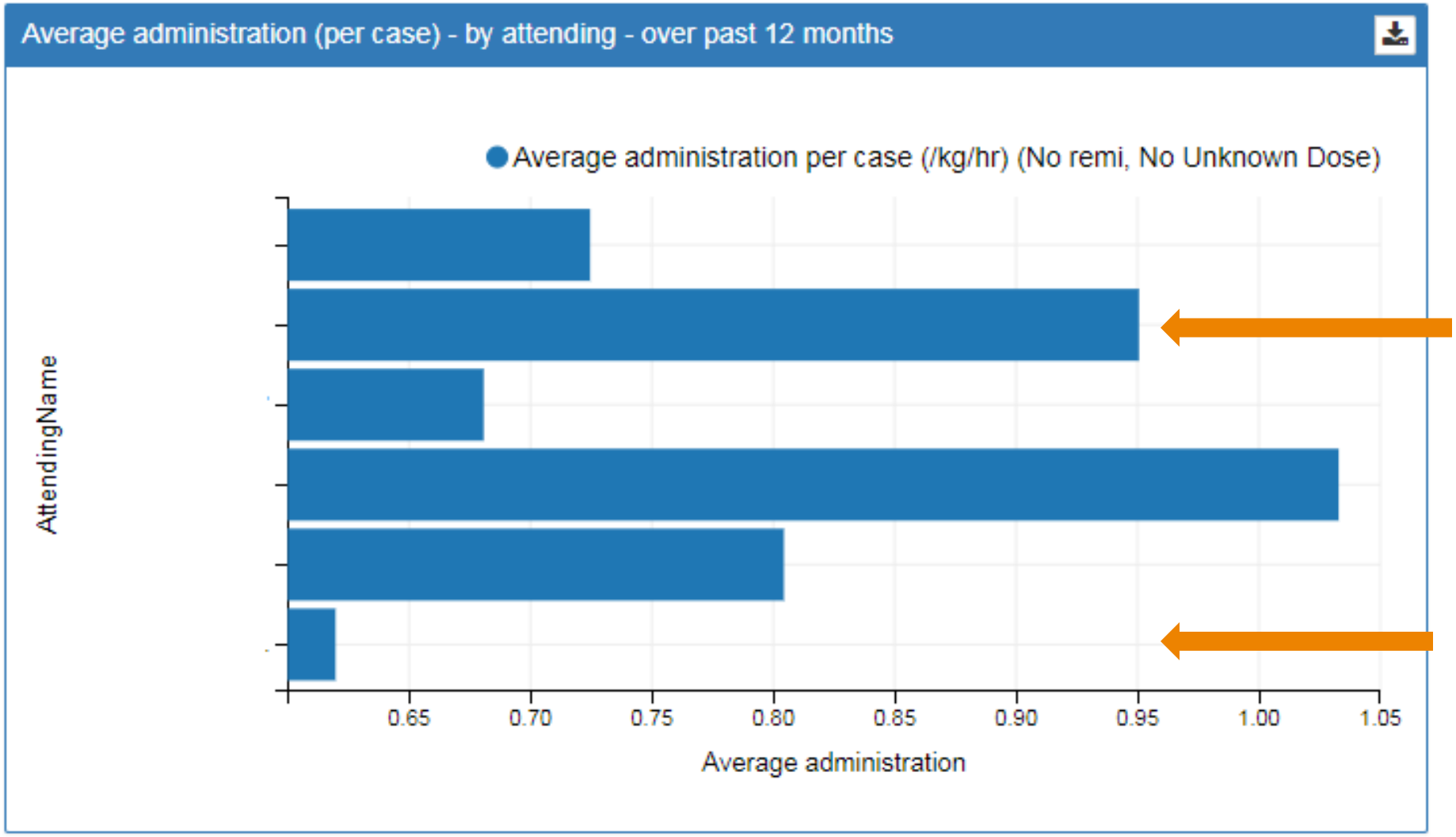
- Harms of opioid use are well known
- Opioids are essential to peri-operative pain management
- No line exist between MEETING or NOT MEETING a standard regarding peri-operative opioid use
- Likely not possible to build a robust PROCESS or OUTCOME measure in this domain
- There are many ways of performing anesthetic care, some of which lean to greater or lesser extent on opioids
  - Sometimes there are compelling reasons for each technique

drugs by Arthur Shlain from the Noun Project

EXAMPLE: Opioid Equivalency (2)

- Compare Similar Cases:
  - Limited by CPT Code “Buckets”
  - Not Exhaustive List of Cases
  - Focus on “High Volume” Cases
- Adjusting for Case Length:
  - Reported per hour
- Adjusting for Patient Factors:
  - Reported per kg

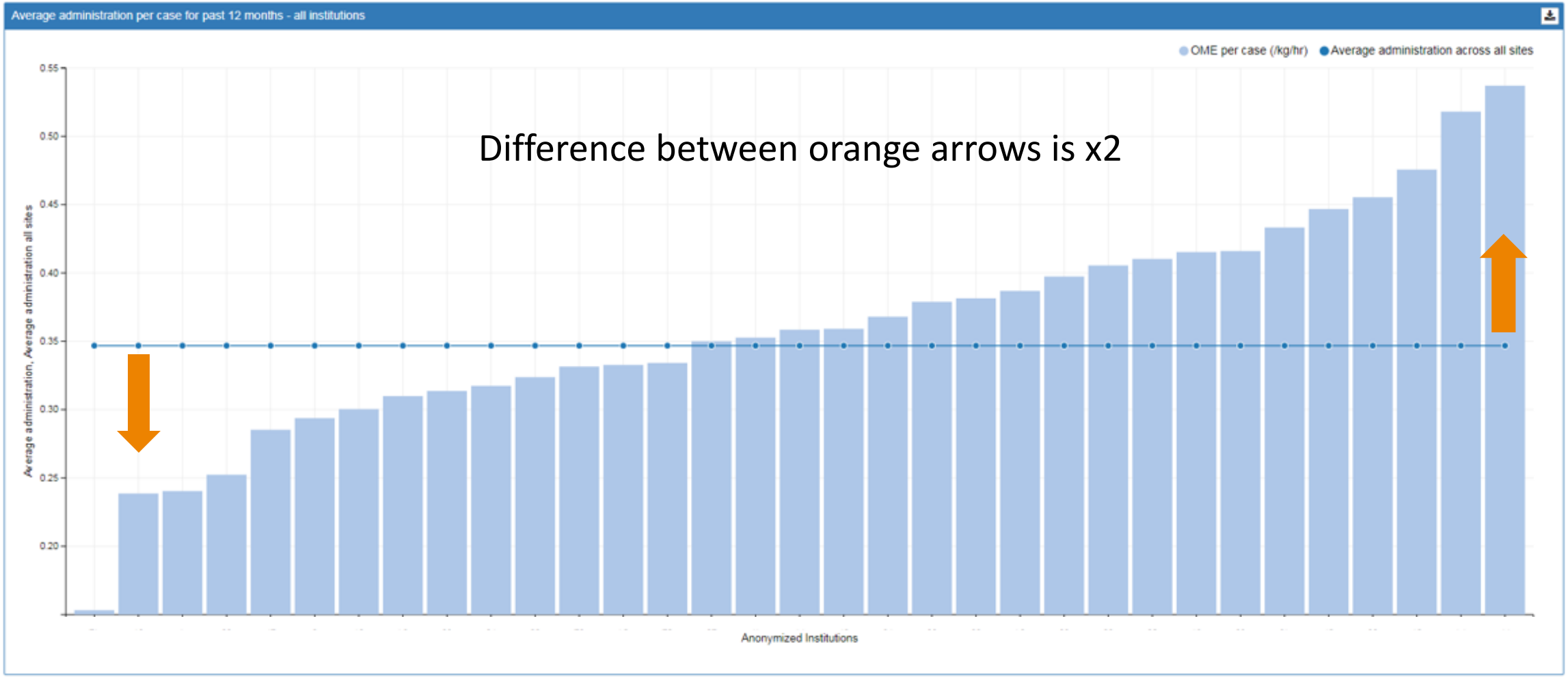
Opioid Equivalency (3): Within Institutions



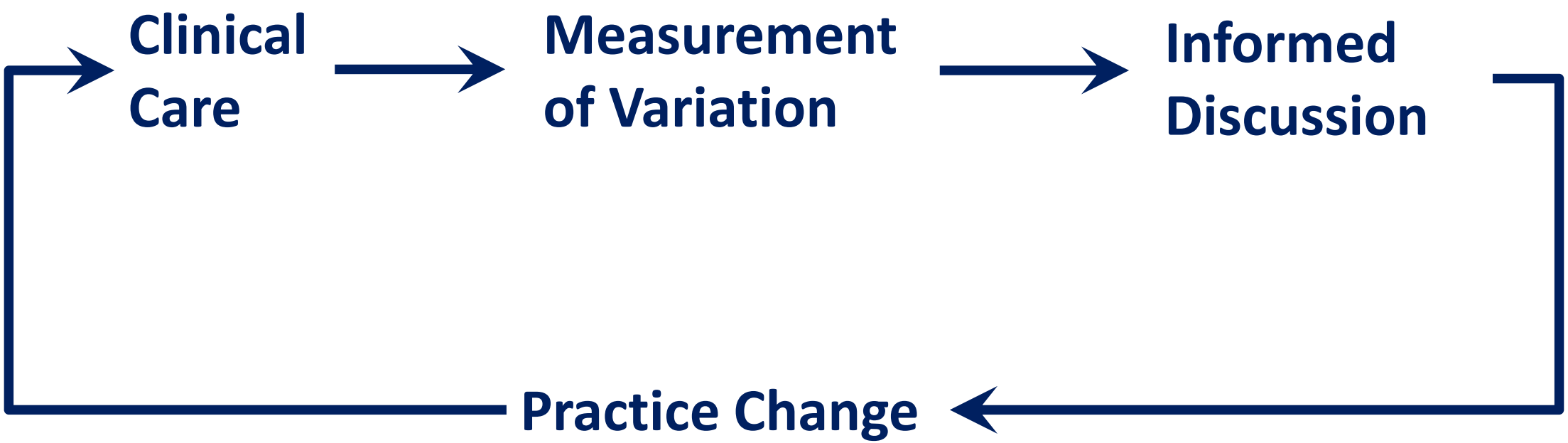
0.95 per kg per hr

0.62 per kg per hr

Opioid Equivalency (4): Between Institution



Summary


Clinical Care
Measurement of Variation
Informed Discussion
Practice Change

Thank you