

Principles of QI and Impact in the Pediatric Cardiology Realm

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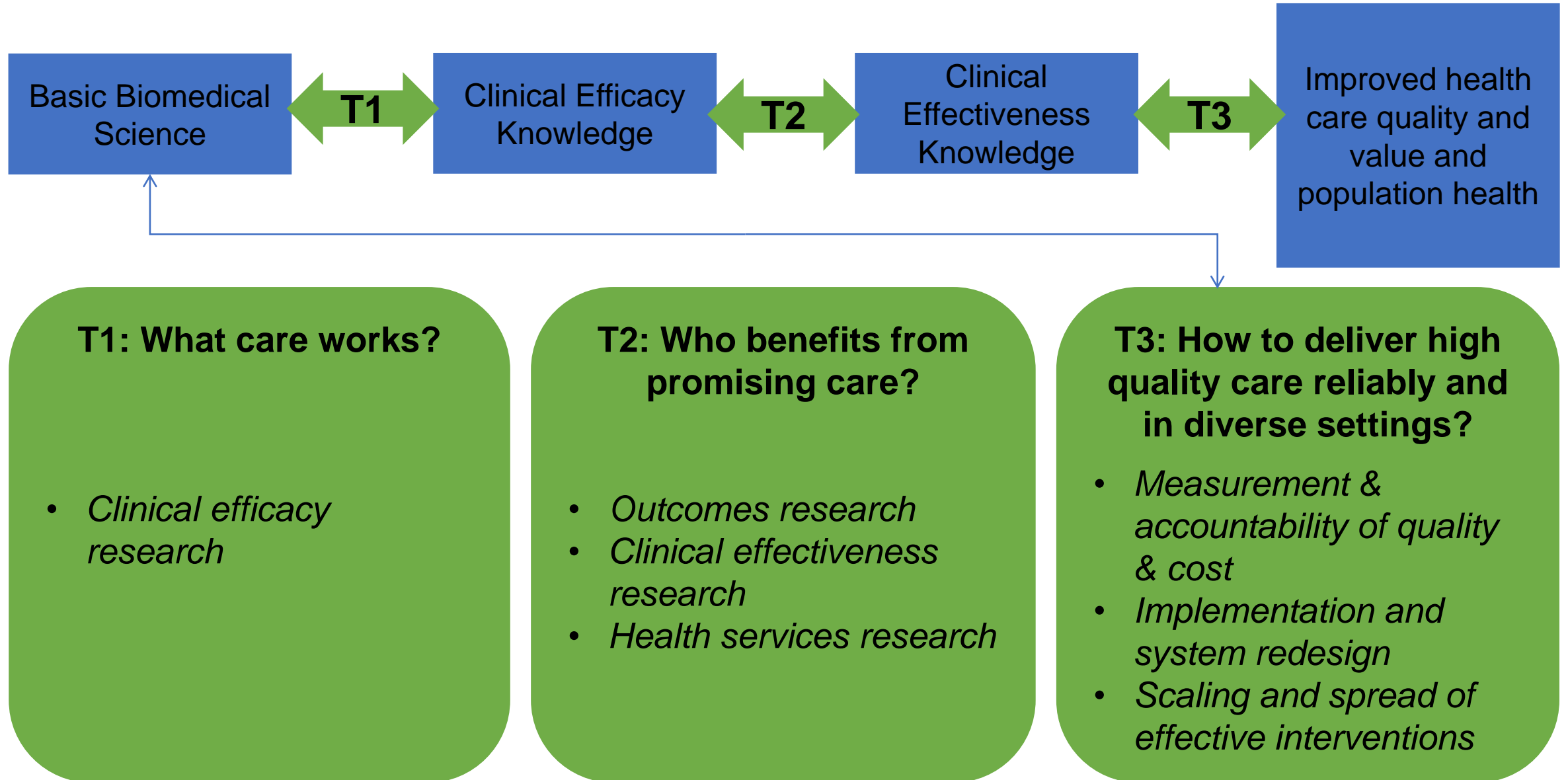
Cardiology 2024: Annual Update on Pediatric and Congenital Cardiovascular Disease
Conference

Outline

- Frame QI science
- Outline the essentials of effective improvement work
- Brief discussion of QI and our field
- Some QI cautions

The “3T’s” Road Map to Transform US Health Care

(Dougherty & Conway 2008)



What is Quality Improvement?

Systematic data-guided activities designed to bring about immediate positive changes in the delivery of health care in particular settings.

May involve

Practical problem solving

Evidence-based change

Application of theory-driven science to bring about system

change

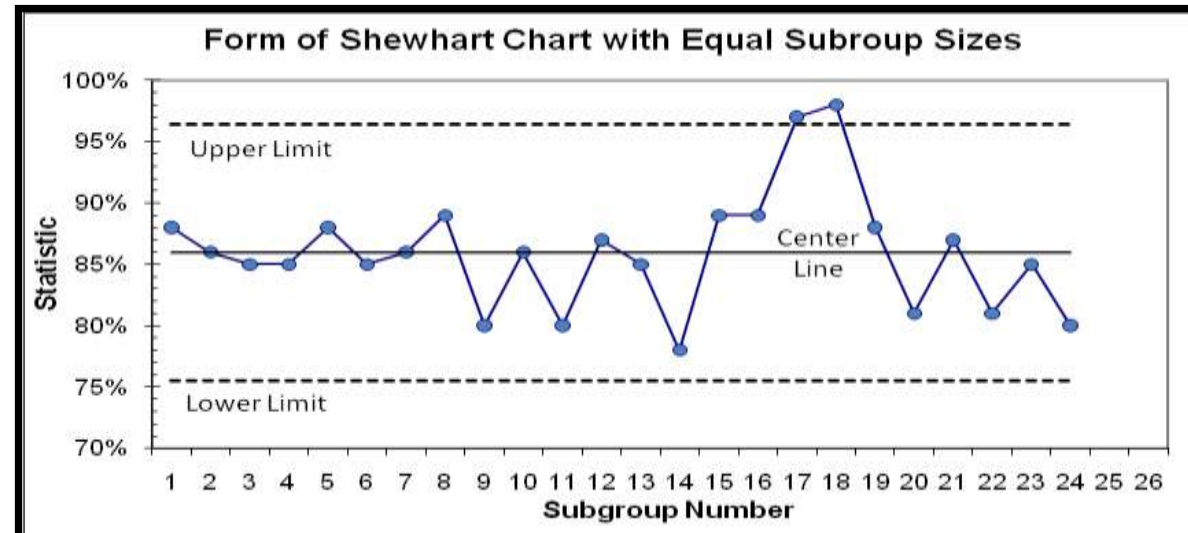
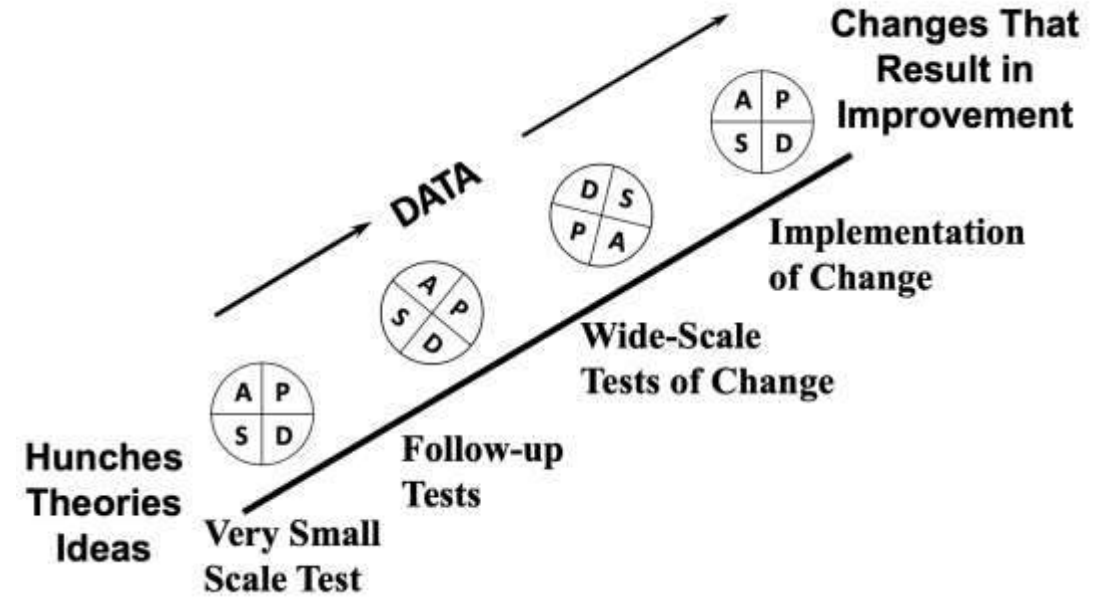
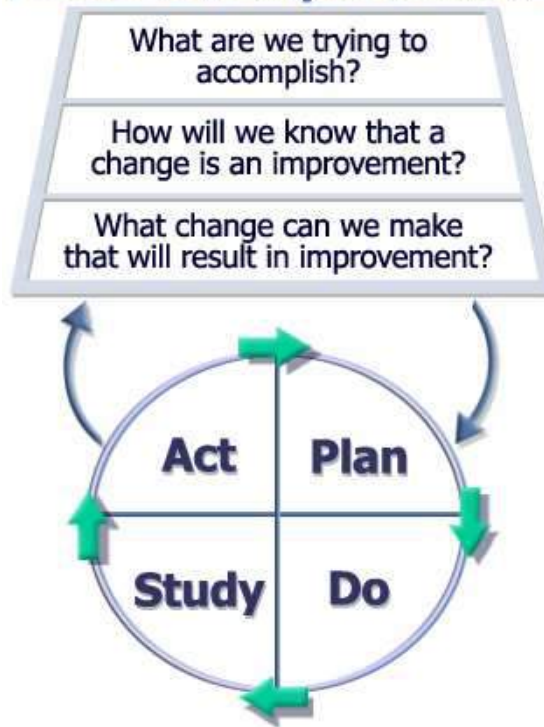
Every system is perfectly designed to get the results it gets.

—Paul Batalden

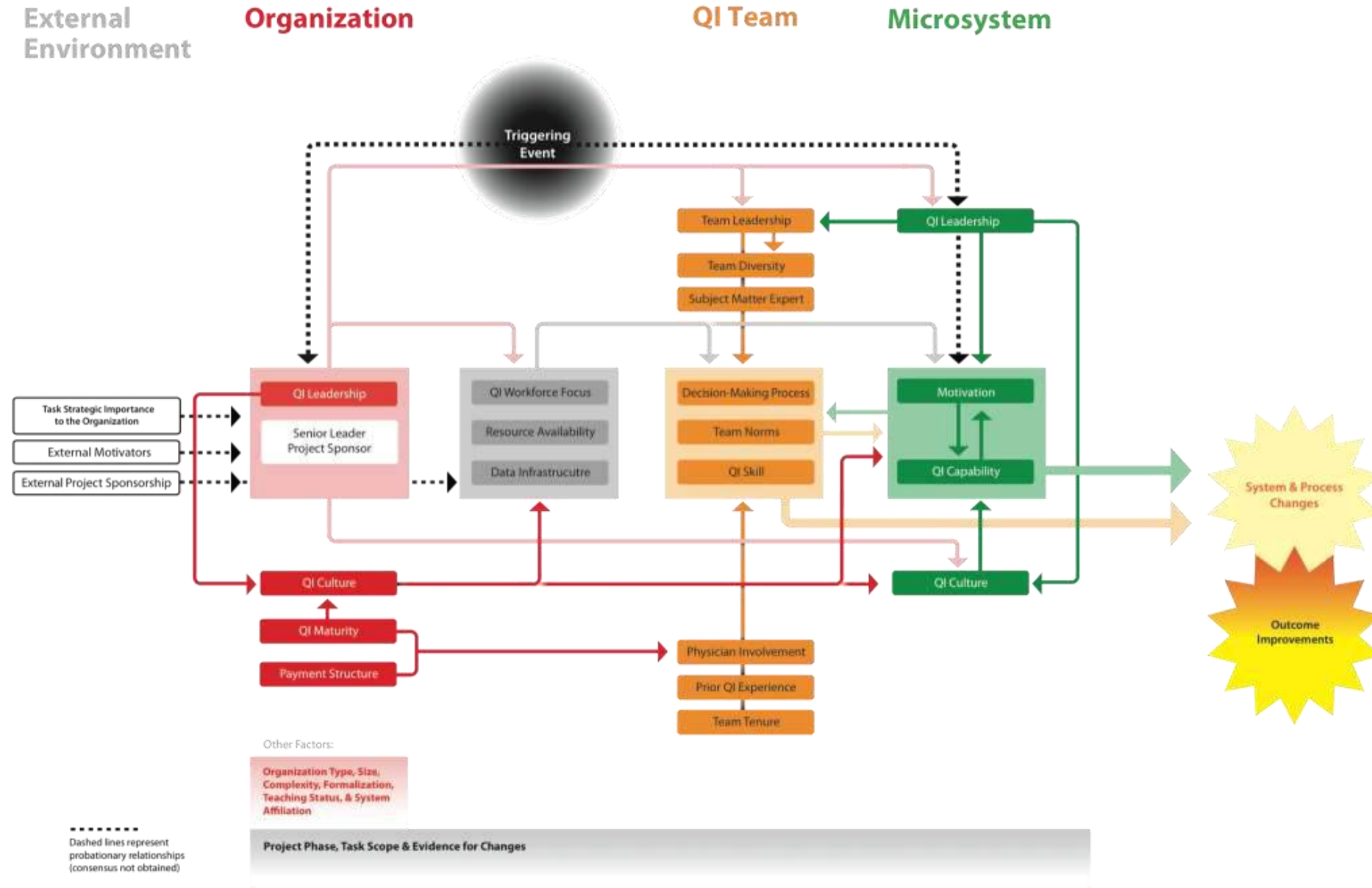
The *design, development and evaluation* of complex *interventions* aimed at the **redesign of health care system to produce improved outcomes.**

Essentials of QI work

Model for Improvement



Model for Understanding Success in Quality (MUSIQ)



Successful Quality Improvement is Like Making Beautiful Music...



PIECE OF MUSIC

CHANGE CONTENT

Evidence-Based Care
Processes and
Bundles



INSTRUMENTS

CHANGE PROCESS

QI Methods—Model for
Improvement



PERFORMANCE SPACE

CONTEXT

Culture, Leadership,
Resources, Training,
Motivation...

MUSIQ

The Model for Understanding Success in Quality (MUSIQ): building a theory of context in healthcare quality improvement

Background: Quality improvement (QI) efforts have become widespread in healthcare, however there is significant variability in their success. Differences in context are thought to be responsible for some of the variability seen.

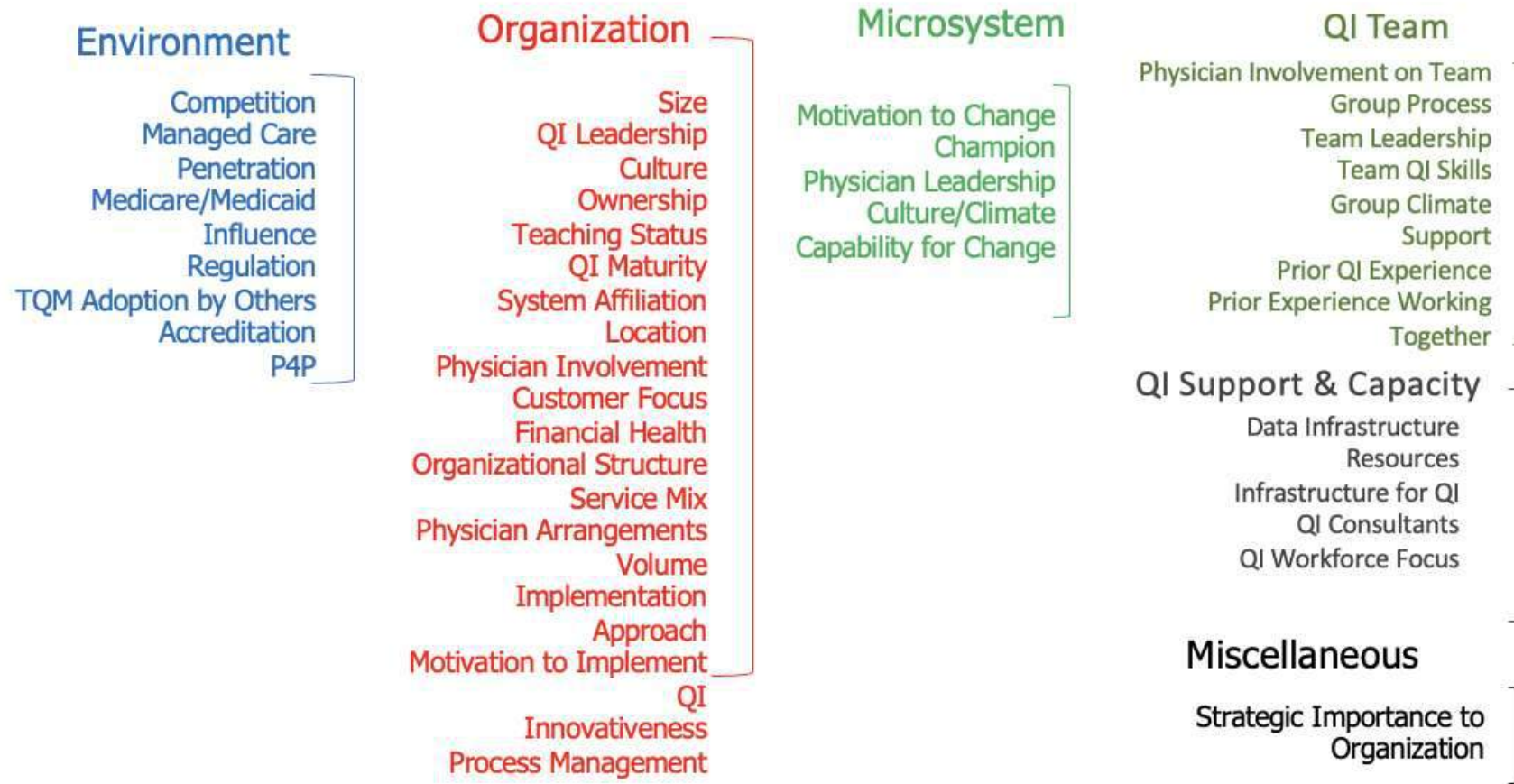
Objective: To develop a conceptual model that can be used by organizations and QI researchers to understand and optimize contextual factors affecting the success of a QI project.

Context: “...characteristics of the organizational setting, of the individual, of his or her role in the organization, and of any other environmental factor that may shape [quality improvement effectiveness]”

Development of MUSIQ

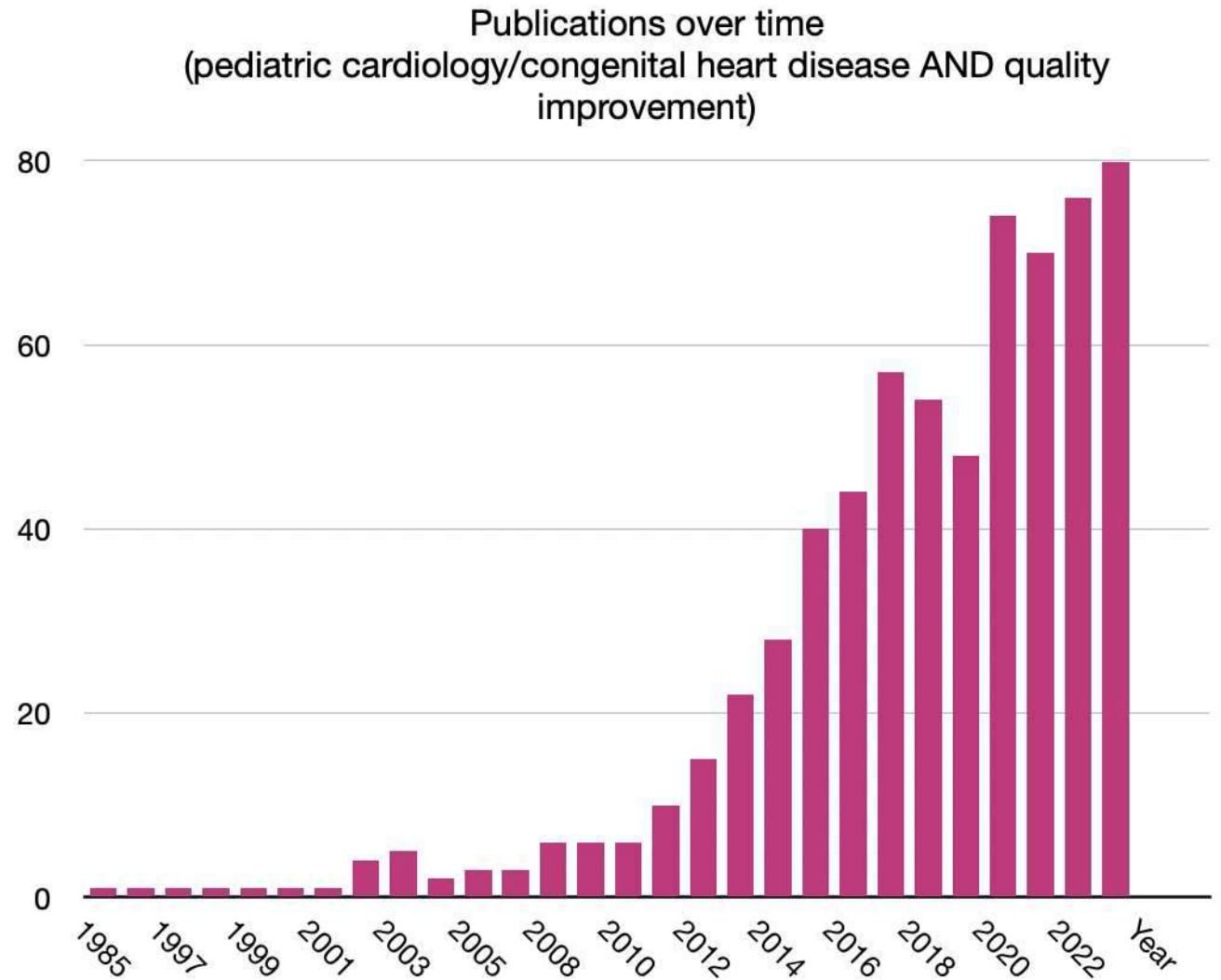
Systematic search identified 47 studies empirically examining context in QI.

66 Contextual Factors Identified



QI in our field

- Increasing number of publications over time
- Launch and expansion of learning networks
- Development of improvement “programs” within Heart Centers, as well as leadership roles in these programs



High-points in QI in our field?

- Multi-center/Learning Network projects
 - Improvement in nutrition and growth/reduction in mortality in HLHS
 - Decrease in chest tube duration following cardiac surgery
 - Reduction in cardiac arrest in CICUs
 - Increase in patients with Early post-operative extubation
 - Many more...
- Center specific operations
 - Standardization of echocardiogram scanning protocol
 - Reducing the number of sternal wound infections
 - Decreasing the use of unnecessary diagnostic testing in syncope/pre-syncope
 - Too many more to list...

Culture

Start before you're ready
-James M. Anderson

***Competition* has been shown to be useful up to a certain point and no further, but *cooperation*, which is the thing we must strive for today, begins where competition leaves off.**
- Franklin D. Roosevelt

“Trying harder will not work.
Changing systems of care will.”
-Institute of Medicine,
Crossing the Chasm

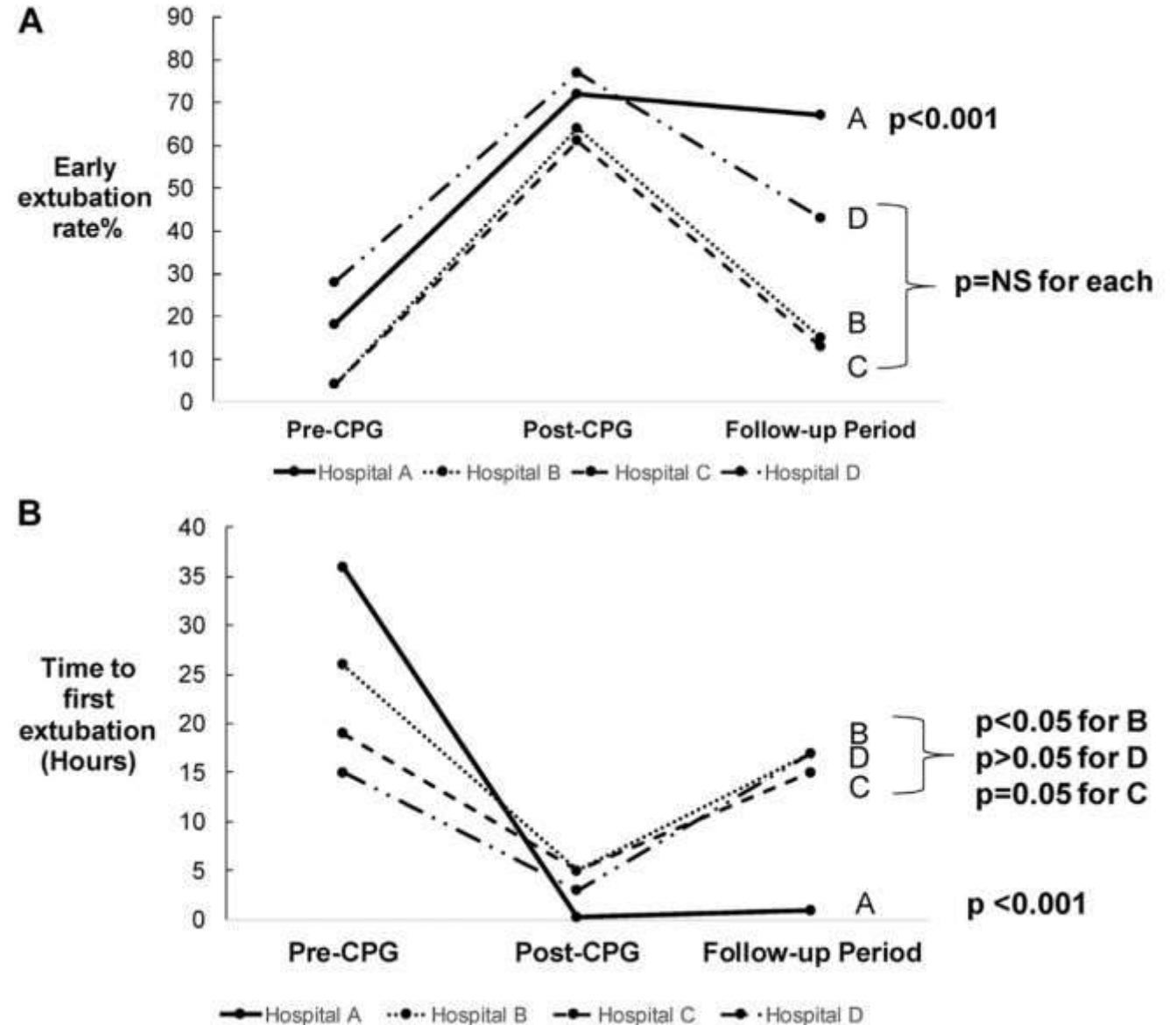
**Steal shamelessly,
Share seamlessly.**

Some QI cautions...



Reliability matters

- Follow-up study for patients with early post-operative extubation
- The follow-up of sustainability of QI interventions is **rarely** studied



Does quality improvement improve quality?

Authors: Mary Dixon-Woods^A and Graham P Martin^B

ABSTRACT

Although quality improvement (QI) is frequently advocated as a way of addressing the problems with healthcare, evidence of its effectiveness has remained very mixed. The reasons for this are varied but the greatest challenge is often the application of QI methods. Fidelity in the application of QI methods is often variable. QI work is often pursued through time-limited, small-scale projects led by professionals who may lack the expertise, power, or resources to instigate the changes required. There is insufficient attention to rigorous evaluation or to learning from the lessons of successes and failures. Too many QI interventions are seen as 'magic bullets' that will produce improvement in any situation, regardless of context. Too much improvement work is undertaken in isolation at a local level, failing to pool resources and develop collective solutions, and introducing new hazards in the process. This article considers these challenges and proposes four key ways in which QI might itself be improved.

KEYWORDS: evaluation, healthcare organisation, hospitals, patient safety, quality improvement, research design/methods

“Allowing a thousand flowers of quality improvement interventions to bloom is not a sensible or efficient way of going about fixing healthcare”

US studies suggest that nurses deal with an average of 8.4 work system failures per 8-hour shift, and they are continually interrupted.^{5,6} The need for staff to learn and learn from these failures in the planning and mental processes, is significant. Much professional time is consumed unproductively in learning anew how to undertake tasks as new ailing patients, new vital signs, new equipment has been cleaned, or how things are arranged in the resuscitation trolley. The need for staff to learn and learn from these failures as they move from place to place, either because they have not yet learned the new procedures or they apply previous learning to new but different situations, is significant. ⁷

The problems with quality improvement

Healthcare has increasingly been encouraged to use quality improvement (QI) techniques to tackle these operational defects (clearly, healthcare faces many other challenges but they may require different approaches). Capacity to improve quality is clearly critical to healthcare organisations; every organisation needs to be able to detect its operational (and other) problems

What are the must-haves to make it stick?

- Understand and optimize context (MUSIQ)
- Have a data-driven, organized (planned) approach to improvement work
- Design, test, and implement high-reliability interventions
- Constant focus on measuring your outcome and understanding failures

Thank you



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