# Research, Quality Improvement, and Evidence-Based Practice

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# Disclosures

- Disclosure of Relevant Financial Relationships: We have no financial relationships to disclose.

- Disclosure of Off-Label and /or Investigative Uses: We will not discuss off label use and/or investigational use of medications or devices in this presentation.

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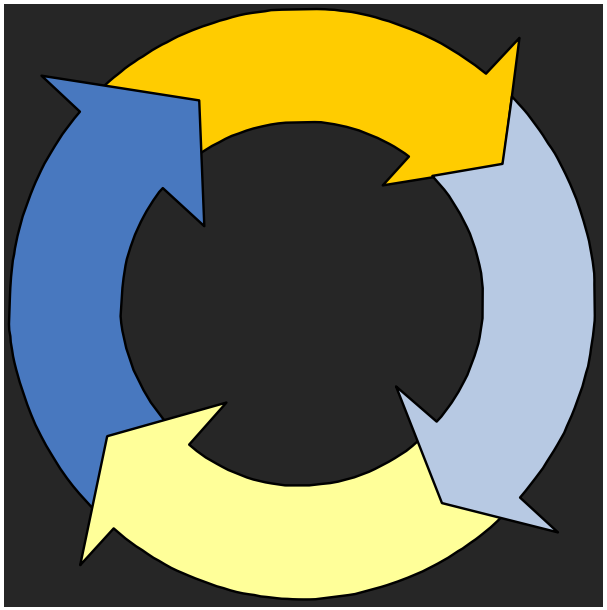
# 21st Century Health Care

*Information-rich, patient-focused enterprises*

*Evidence is continually refined as a by-product of care delivery*



*Information and evidence transform interactions from reactive to proactive (benefits and harms)*

*Actionable information available – to clinicians AND patients – "just in time"*

# Objectives

- Discuss Research vs. QI vs. Evidence-Based Practice
- Discuss QI Research.
- Discuss the Iowa Model of Evidence-Based Practice.

# Definitions

- Clinical Research is work that is **hypothesis-driven** and **systematically designed** with the goal of creating **new knowledge**.
  - Data is gathered by interaction or intervention with individuals.
  - Identifiable individual health information is gathered.
- Quality Improvement is the process of **systematic, data-guided activities** to support better **outcomes**, better **performance**, and better **professional development**.
- Quality assessment and improvement activities, including outcomes evaluation and development of clinical guidelines or protocols, fall under the category of health care operations under HIPAA – provided **the primary aim is not obtaining generalizable knowledge**.

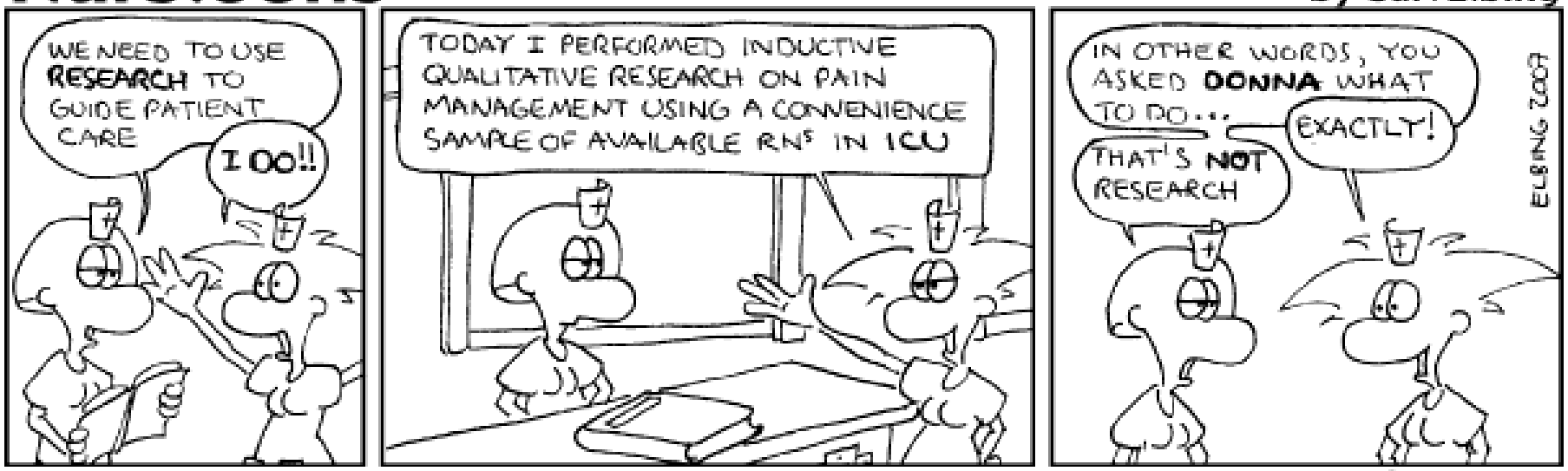
# Quality Improvement vs. Research

Human research regulations define research as “a systematic investigation, including research development, testing, and evaluation, designed to develop or contribute to generalizable knowledge.”

Quality Improvement is concerned with initiatives that ensure the consistent, efficient, and effective delivery of patient-centered care.

# Nurstoons

by Carl Elbing

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# Distinguishing QI From Research

## Quality Improvement

- Intended to define the nature and severity of a **local performance gap**.
- Focus is to **improve a process** of care delivery that is not currently optimal or consistent in your environment.

## Clinical Research

- Identifies a **deficit of existing knowledge** in the literature.
- Hypothesizes a method to **generate new knowledge** or advance existing knowledge.

# Methods

## Quality Improvement

- Mechanisms and measures change overtime based on feedback loops.
- Includes an analysis of system processes.

## Clinical Research

- Mechanism is defined by a protocol defining the intervention, and may include creation of a simultaneous control.
- Strict quantitative and qualitative measures, and statistical measures, are defined to make observations and comparisons.

# Intended Benefit

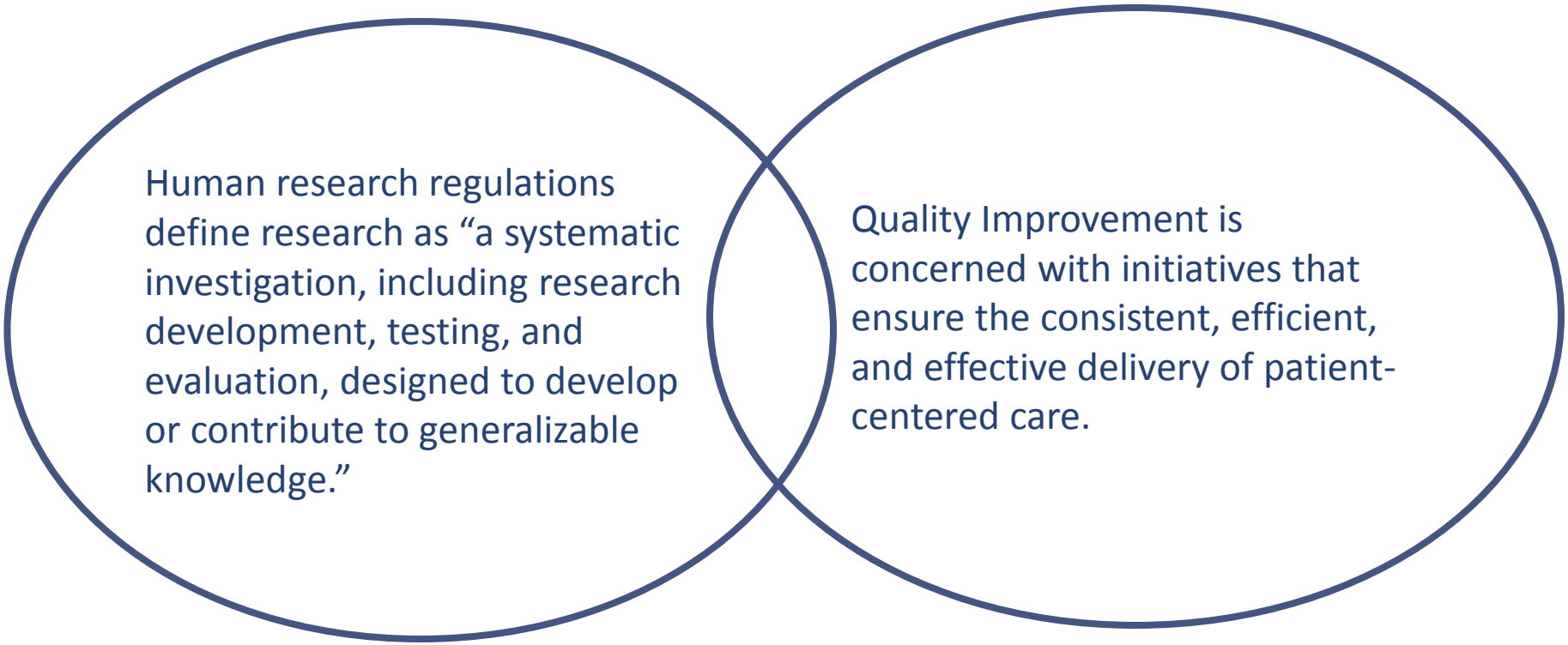
## Quality Improvement

- Occurs in the context of usual clinician-patient interactions.
- Direct benefit to the patient or participant is intended.
- Potentially, local institution benefits are specified (e.g. cost-containment).

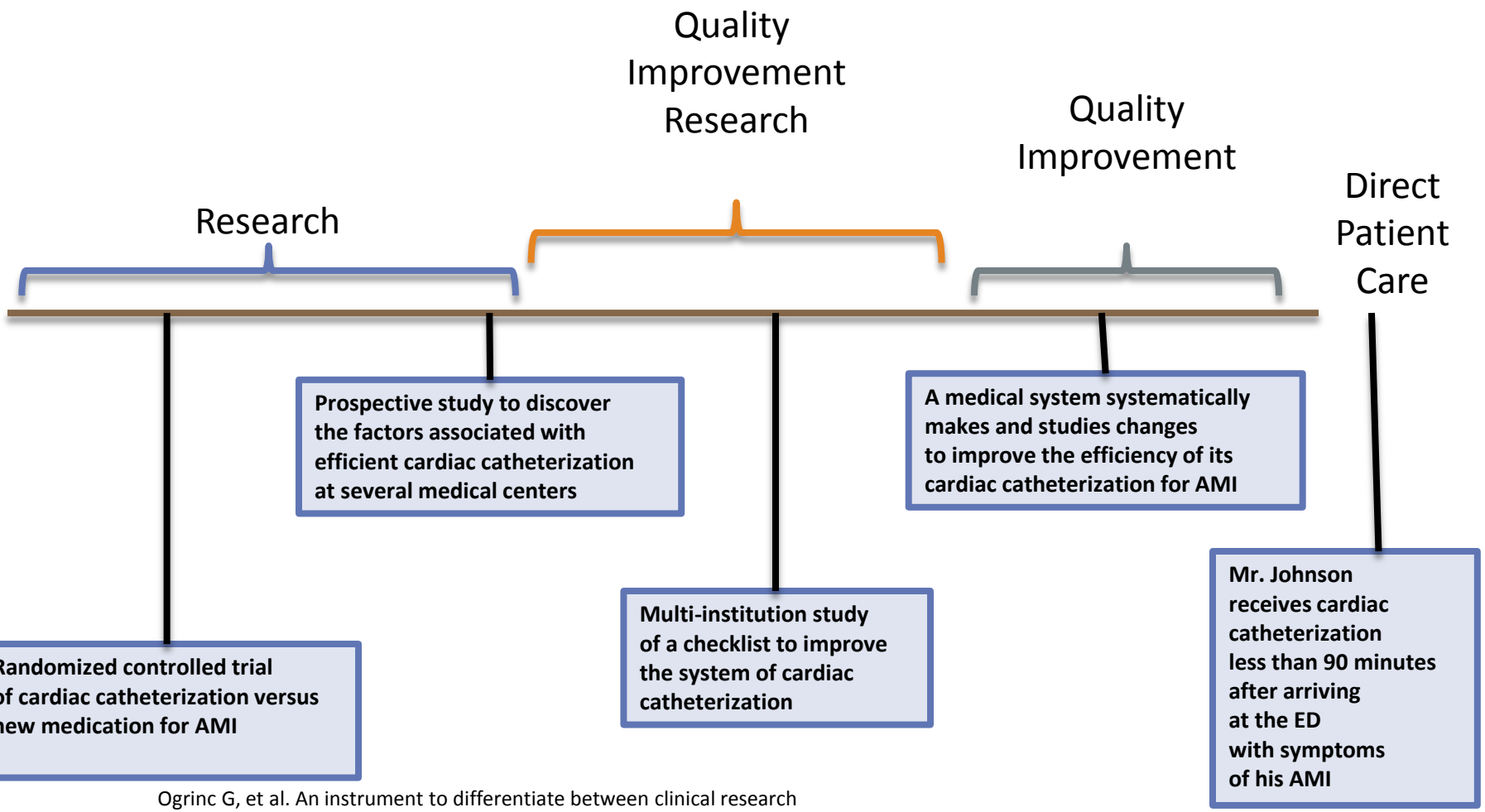
## Clinical Research

- The intervention or use of identifiable information occurs outside the context of usual care.
- While there may be direct benefits, they are not intended or certain.
- Potential societal benefits exist the generation of new knowledge.

# Quality Improvement vs. Research

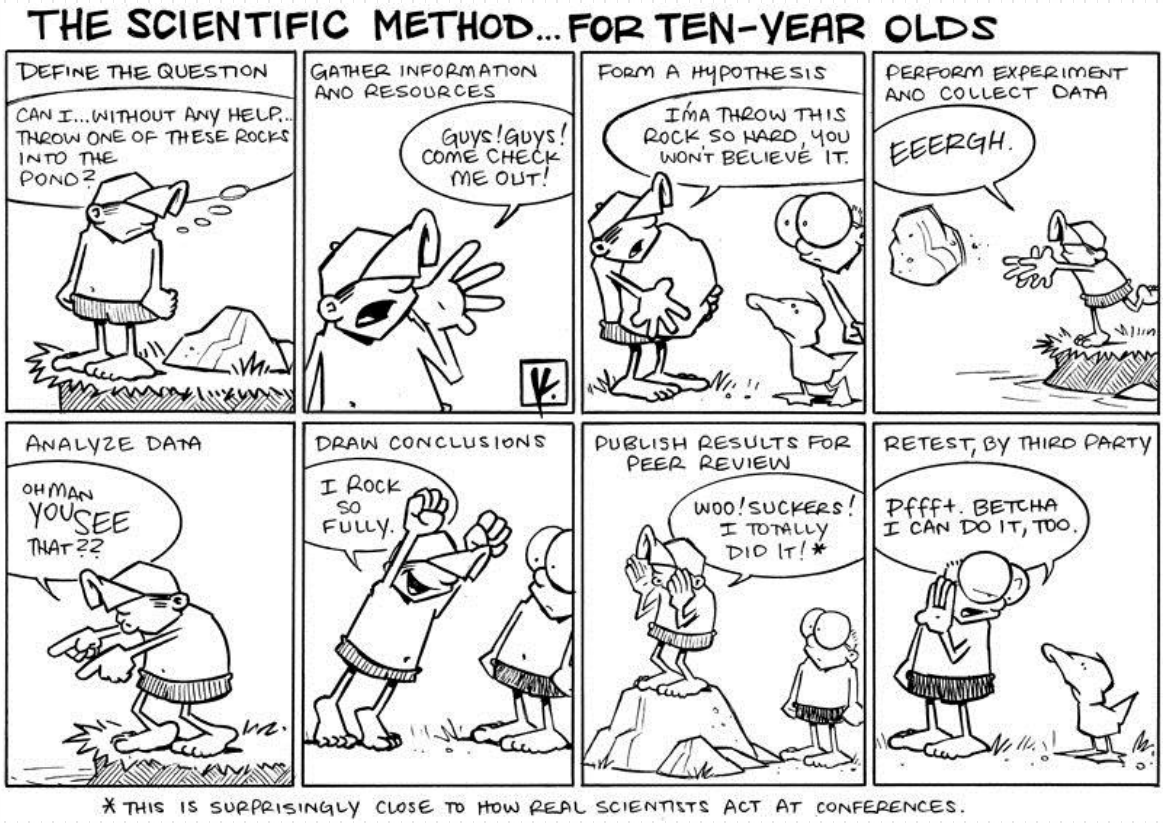


Continuum of clinical research, quality improvement, and patient care activities. Examples are provided relating to care, improvement, and research for acute myocardial infarction (AMI)




Ogrinc G, et al. An instrument to differentiate between clinical research and quality improvement. *IRB: Ethics & Human Research*. 2013 Sep-Oct;35(5):1-8.

# Closing the Gap Between Research, Evidence, and Quality Improvement



# Iowa Method of Nursing EBP

- Model to introduce evidence into practice more effectively by considering the entire health system in the process.
  - Caregivers
  - Patients
  - Infrastructure
  - Organizational culture

# Iowa Model

# Find a Problem

## Problem-Focused Triggers

- Risk Management Data
- Process Improvement Data
- Internal/External Benchmarking
- Identification of Clinical Problem

## Knowledge-Focused Triggers

- New Research or Other Literature
- National Agencies or Organizational Standards and Guidelines
- Philosophies of Care
- Questions from Institutional Standards Committee

# Find a Problem

- Is the problem you are pursuing a priority?
  - i.e. is it important enough to spend time and money?
- If not, consider other triggers/projects.
- If yes …

# Find the Evidence

- Gather existing research
  - Assemble a team
  - Critique and synthesize the research

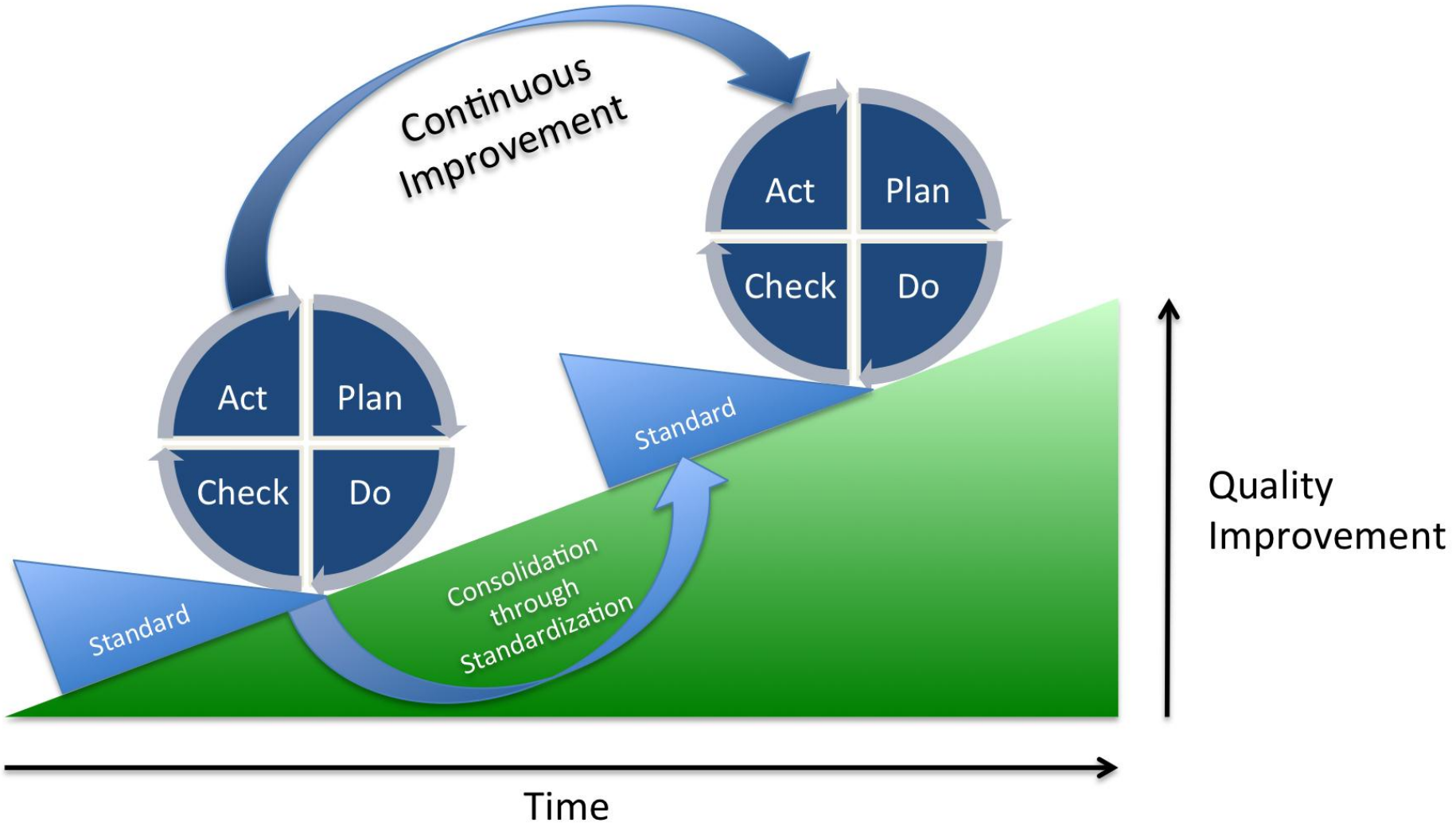
- Is the existing research strong and sufficient?
  - If not, consider the best evidence available (case reports, expert opinion)
  - Consider initiating your own research

# If the Evidence Is Strong …

- Select desired outcomes
- Collect baseline data
- Design EBP guidelines
- Pilot EBP change
- Evaluate the process and outcomes
- Modify guidelines

# If the Changes Is Appropriate …

- Implement the practice change beyond the pilot.
- Continue to monitor and analyze both process and outcome
- Disseminate


Continuous Improvement
Act
Plan
Check
Do
Act
Plan
Check
Do
Standard
Standard
Consolidation through Standardization
Quality Improvement
Time

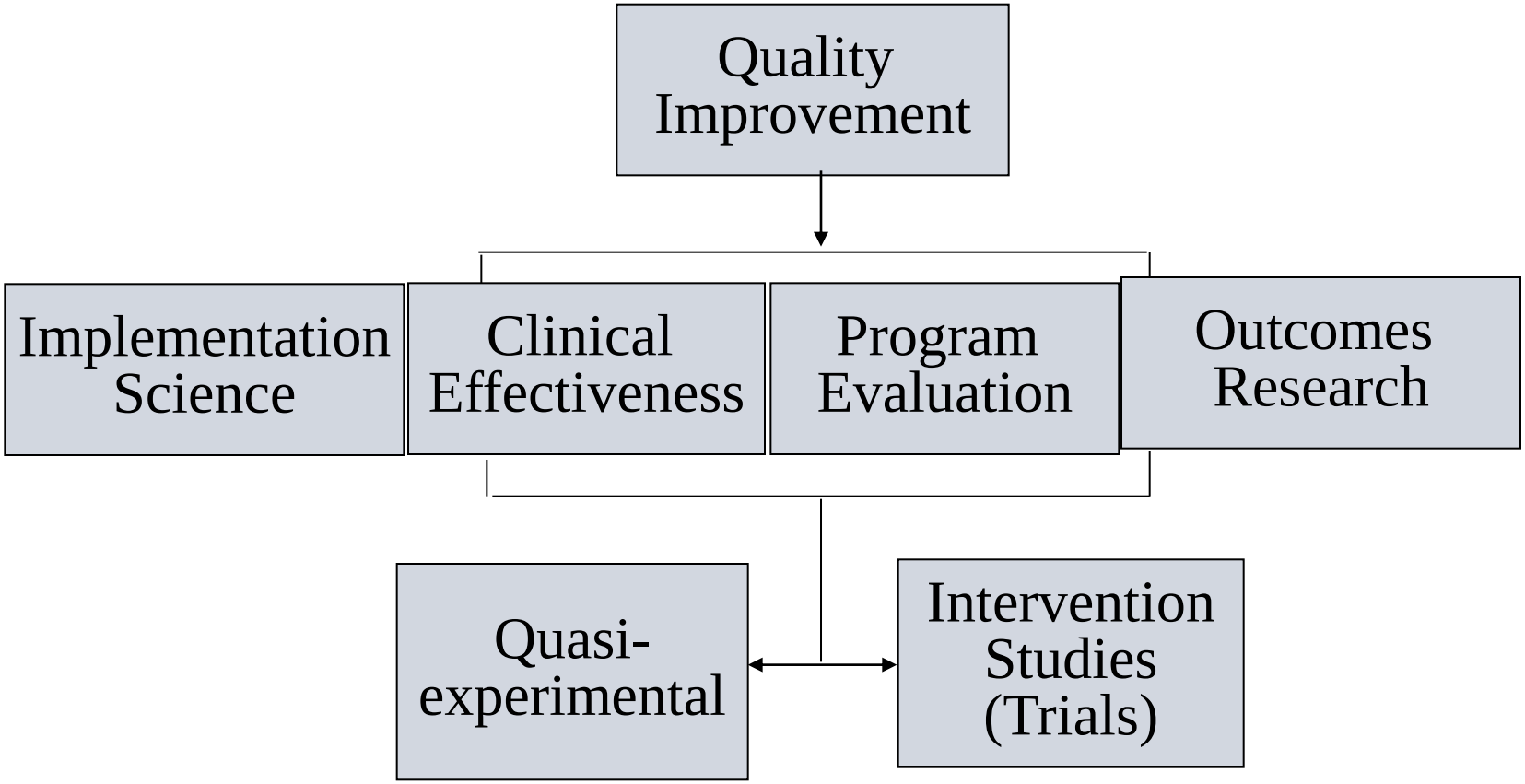
# Pros of the Iowa Method

- ***Detailed and systematic***, i.e. easy for organizations to apply.
- Emphasizes ***becoming evidence-based users***, since most Iowa projects to not require researchers to do new studies.
- Encourages a ***collaborative approach***, integrating EBP with multidisciplinary teams across multiple work settings and specialties.
- Uses concept of ***"change champions"*** who improve organizational expertise in their scope of practice and are passionate about innovation, about quality of care, and about positive working relationships among professionals.

# Cons

- It takes time and discipline to implement all seven steps in the Iowa Method.
- Assembled teams have to be committed to the topic and to retraining to acquire new skills.
- There may not be enough research to define best practice.
  - If evidence does not exist, consider developing research and running your own study.
- A poorly designed and analyzed pilot study data may disseminate error
- The Iowa Method may primarily be applicable in large organizations.

# QI: Role in Driving Evidence Base




*Driving the science of change/innovation…*

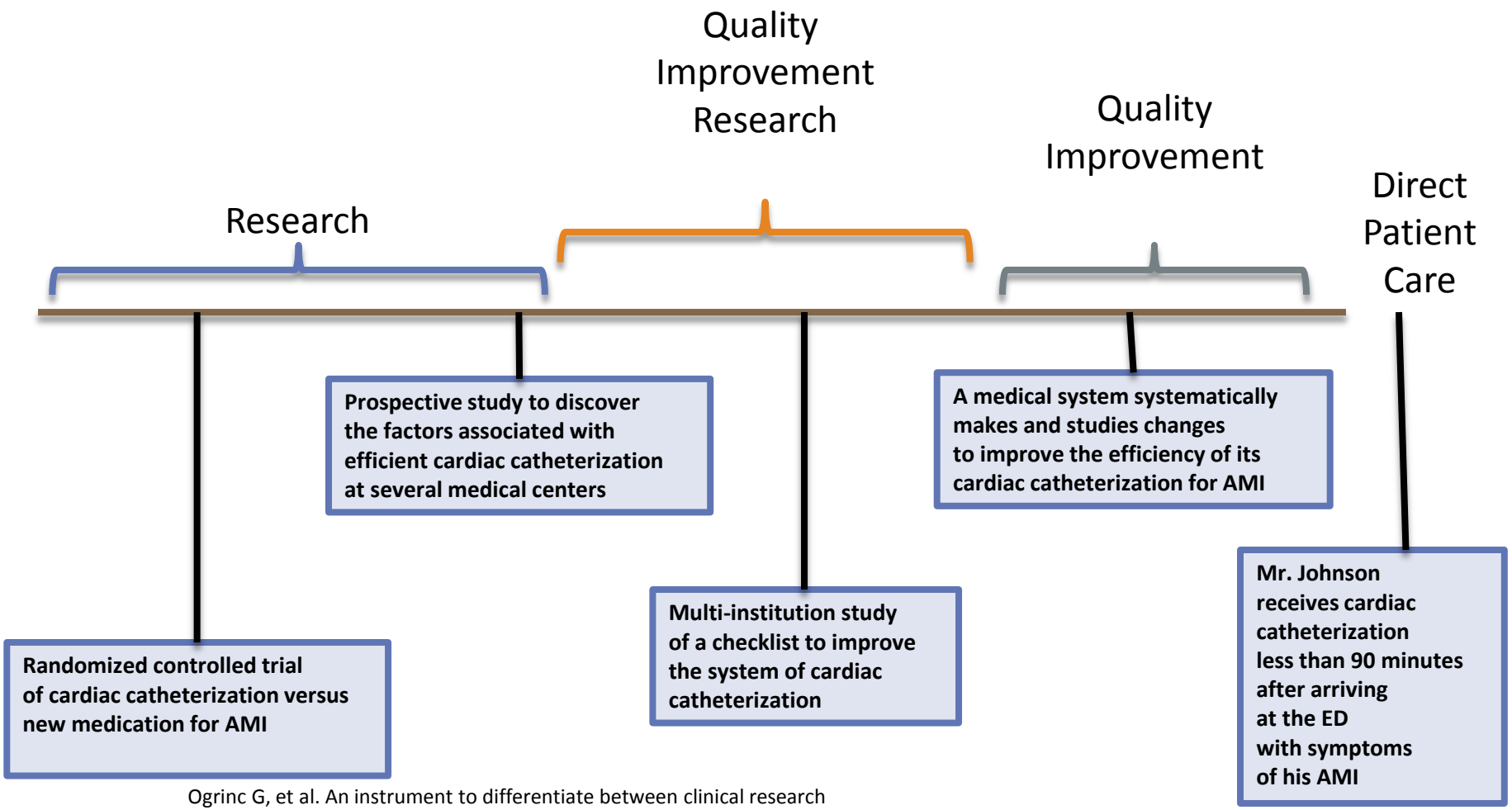
# Quality Improvement Research

- Clinical Research is typically oriented toward intervention with individuals (e.g. patients, survey respondents), and measures their individual information  and outcomes relative to the intervention.
- QI Research is typically oriented toward delivery systems (e.g. healthcare networks, performance teams), and measures system performance and performance outcomes from a baseline level.

# Distinguishing QI vs. QI Research

- What is the intent (mens rea)?
  - Generalizability (publication/presentation)
- What is the intervention?
  - Rigorous, systematic
- What is the funding?
- How safe is it?
- How feasible is it?

## Continuum of clinical research, quality improvement, and patient care activities. Examples are provided relating to care, improvement, and research for acute myocardial infarction (AMI)

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# Measurement and Data

- Measurement and Data are unaware if they are being used for Research of QI.

- Accomplishing either goal successfully the same rigor for defining and collecting measures.

# The ART of Measurement

- Available (Attainable)
- Accurate
- Reproducible
- Related to Outcomes
- Referential (i.e. has a baseline or starting point).
- Timely

# Publishing Quality Improvement Results

# SQUIRE Guidelines

- Standards for QUality Improvement Reporting Excellence.
- Nineteen checklist items to standardize reporting of QI projects that are shared through the literature.
- Published in 2008 in the journal, Quality and Safety in Health Care.
  - Qual Saf Health Care 2008;17(Suppl I):i13–i32. doi:10.1136/qshc.2008.029058
- SQUIRE replace  Quality Improvement Reporting (QIR) from 1999.

# Key Elements of SQUIRE

- Background
- Local problem
- Intended improvement
- Study question, i.e. what improvement-related question(s) is the intervention designed to answer?
- Local environmental assessment
- Planning the intervention
- Planning the study of the intervention
- Methods of evaluation, including collection of relevant data
- Analysis

# Discussion