Institute for Healthcare Improvement

East London NHS Foundation Trust

How To Implement Credible QI Projects….

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- Without large grants
- By leveraging interprofessional knowledge and skills
- In the conduct of routine work

My Personal Take on the “Science of Improvement”

- Scientific regardless of name:
  - Science of improvement
  - Health care delivery science
  - Implementation science
  - Systems strengthening
  - Systems engineering
- Scientific methods include
  - “Model for improvement” promulgated by IHI
  - Lean
  - Six Sigma
  - Lean Six Sigma

“Elevator Speech” on Key Attributes of Improvement Science (Model for Improvement Methodology)

- Clear, measurable aim
- A measurement framework in support of reaching the aim
- Clear description of the ideas (content) and how these ideas are expected to impact results (the causal pathway from changes to desired outcomes, and their attributable effect)
  - Conceptual or logic model, or “driver diagram”
- Clear description of the implementation strategy
  - What will be done to ensure reliable adoption of the content
- Dedication to rapid testing (PDSA) - prediction and learning from tests
- Understanding/describing/visualizing systems (process map, value stream)
- Learning from variation and heterogeneity
  - Use of time-ordered data to detect special cause and improvement
  - Understanding why results differ by ward, organization, region
- Application of behavioral and social sciences

Why Clinicians (Especially Physicians*) Are Skeptical About QI

- Many associate QI with old-style, punitive QA (profiling, pay-for-performance)
- QI gurus overemphasize the industrial quasi-”religious” origins of QI and use unfamiliar jargon
- QI experts tend to focus on non-clinical processes and outcomes rather than clinical outcomes of interest to clinicians
- Teams try to do QI “by the book” and get bogged down in tedious process and settle for small incremental improvements
- QI leaders are not up front about the fiscal agenda (“QI is free”)
- QI programs do not provide clinicians with the data they need to improve
- QI experts do not emphasize the academic potential of QI research

* I emphasize physicians because like it or not, improvement in clinical care requires that they be engaged

Why Physicians who Understand Laboratory Science Should be Comfortable with Rigorous QI

- My ten years working with a PhD scientist to develop a Staphylococcus vaccine…
- The "experimental method," mice, theories/hypotheses, and PDSAs
  - While the "context" of lab work is far less complex than the "context" of the hospital or clinic, behavioral and contextual issues do come into play
- And why don't QI leaders keep a "lab book" to document exactly what they are doing and learning?

What to Do

- Leaders must not lose touch with work at the front line
  - Understand that clinicians have limited capacity (time and energy) to take on new QI projects and little capability (skills) in QI methodologies

    A 'work smarter, not harder' approach to improving healthcare quality. Hayes CW, Batalden PB, Goldmann D;BMJ Qual Saf. 2015:24:100-2
  - Clinician “burn out” is increasing, and generally additional time and payment are not provided for QI responsibilities
- Find and address the pain points – “what frustrates you the most?”
  - A personal story – Visits to radiology and the emergency department

http://www.ihi.org/education/ihiopenschool/resources/Pages/Activities/GoodFirstStepToAnyImprovementProject.aspx

https://www.youtube.com/watch?v=831mdPYGouo

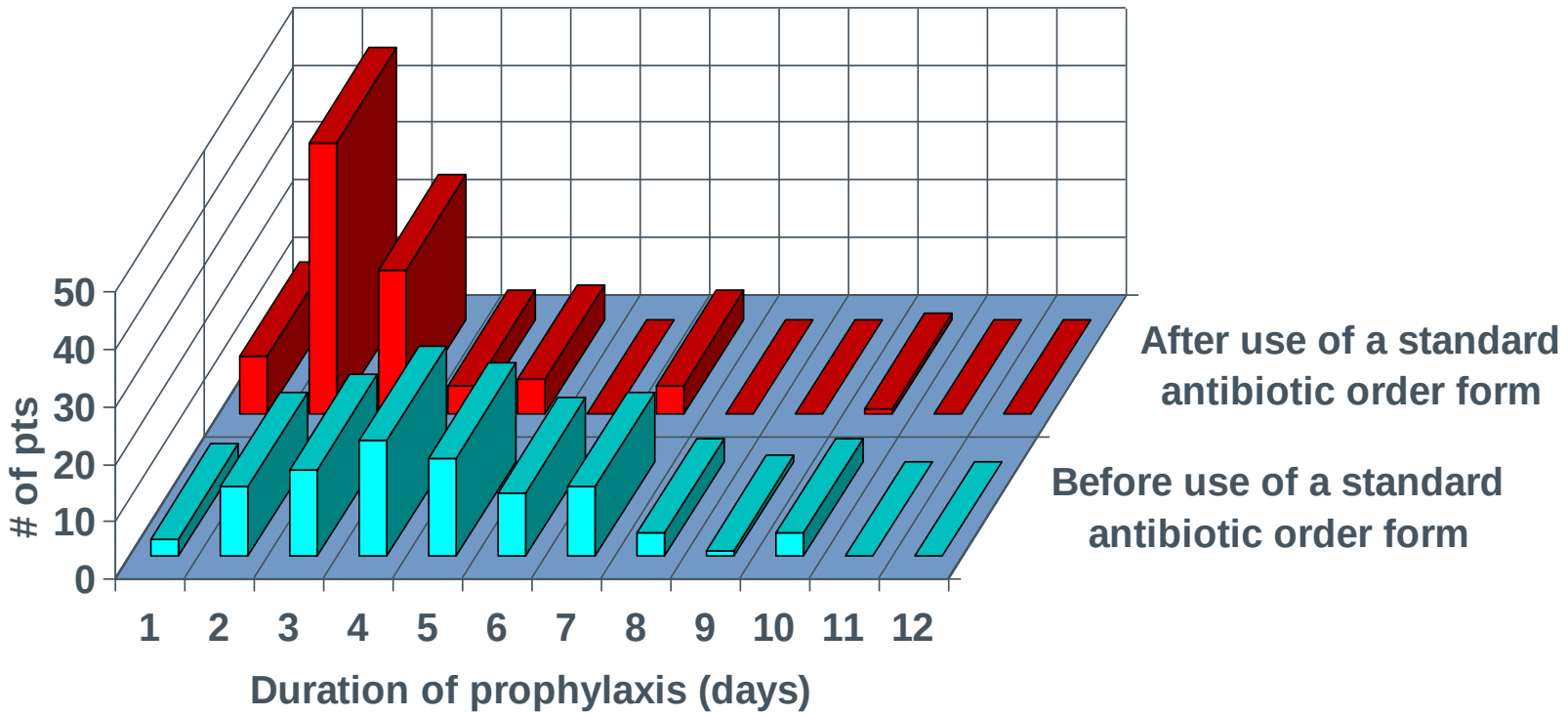
What to Do

- Teamwork is essential
  - QI is inherently inter-professional, yet clinicians generally are not trained to work in teams, nurse-physician tensions remain, and work patterns and schedules are hard to synchronize
  - A gulf remains between clinicians at the bedside and critical support personnel, such as pharmacists, physical therapists, and social workers
- Imbed QI, including data collection, in real work – not separate and added on
  - Example: Frustration with physician “maintenance of certification” requirements related to QI in the US

Rigorous, Even Publishable QI Is Possible Almost Anywhere – Without Grants (!)

Personal Experience

Baby Steps: Effect of Standard Antibiotic Order Form on Duration of Prophylaxis

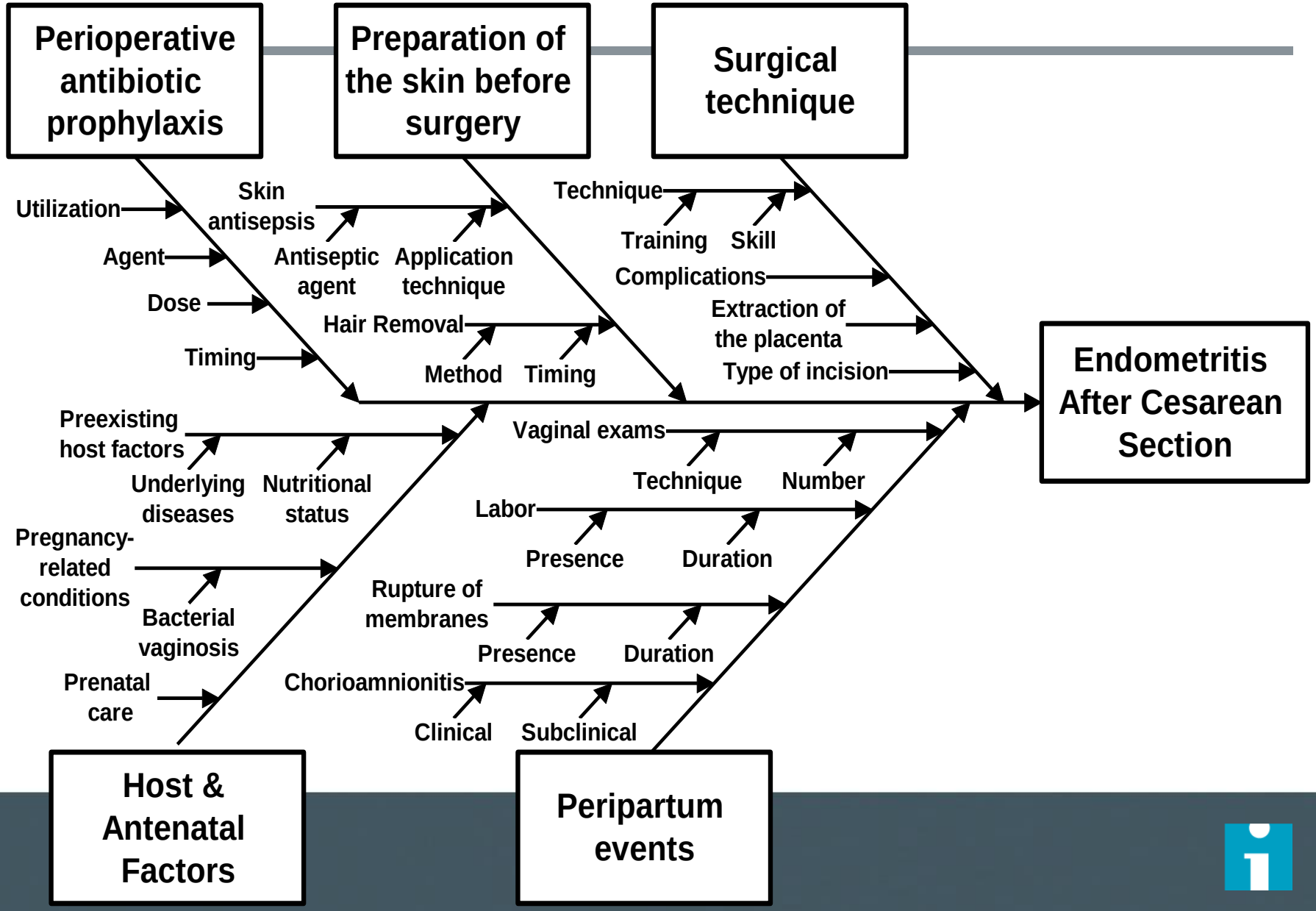


Durbin et al. JAMA 1981;246:1796

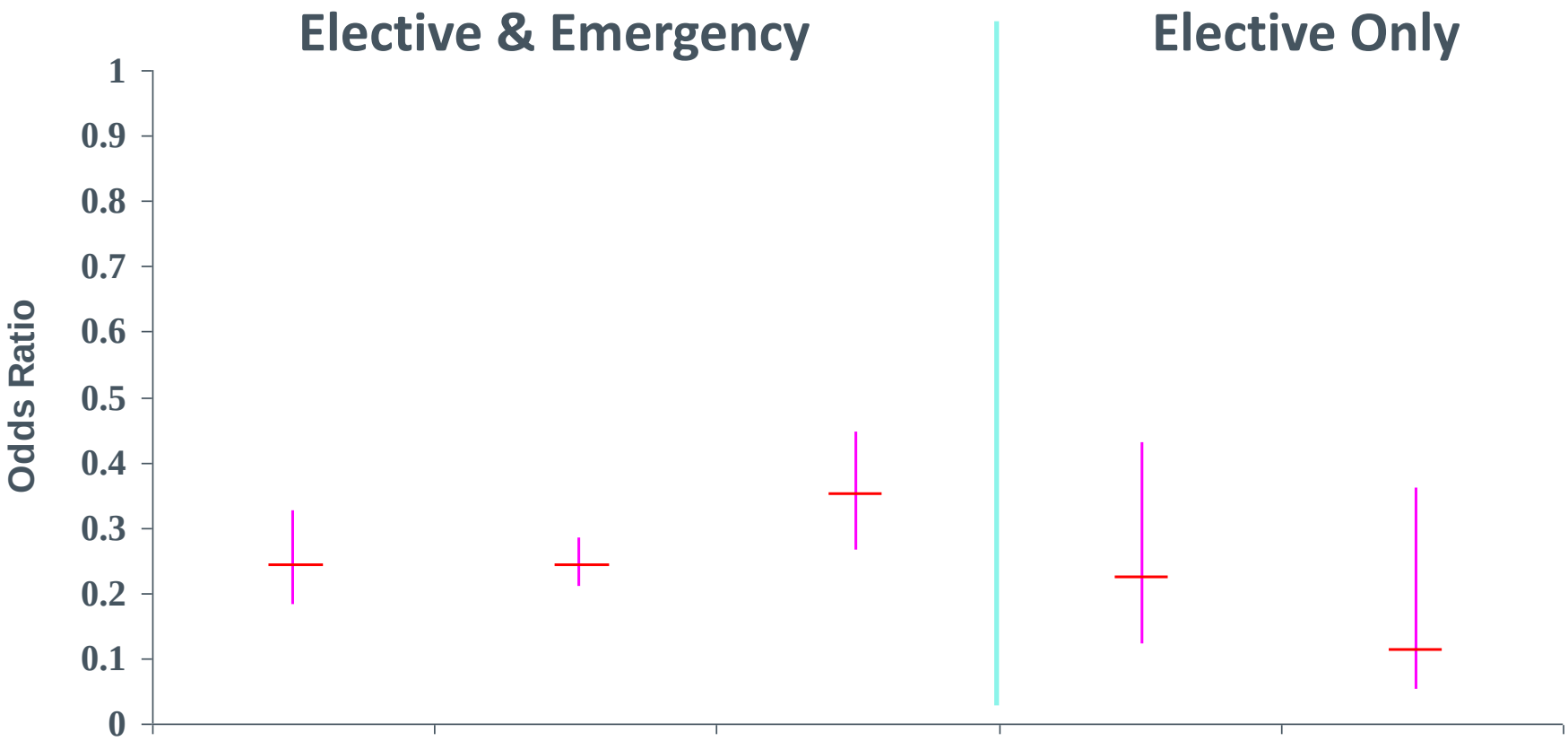
If They Can Do It in Bogotá during Civil Conflict with Constrained Resources…

Reducing Post-Caesarian Infections

Cause and Effect Diagram



Meta-Analysis the Effect of Antibiotic Prophylaxis on Infection Rates after Cesarean Section



Enkin M, et al. Prophylactic antibiotics in association with cesarean section. In: Chalmers, Enkin, Keirse eds. Effective care in pregnancy and childbirth.

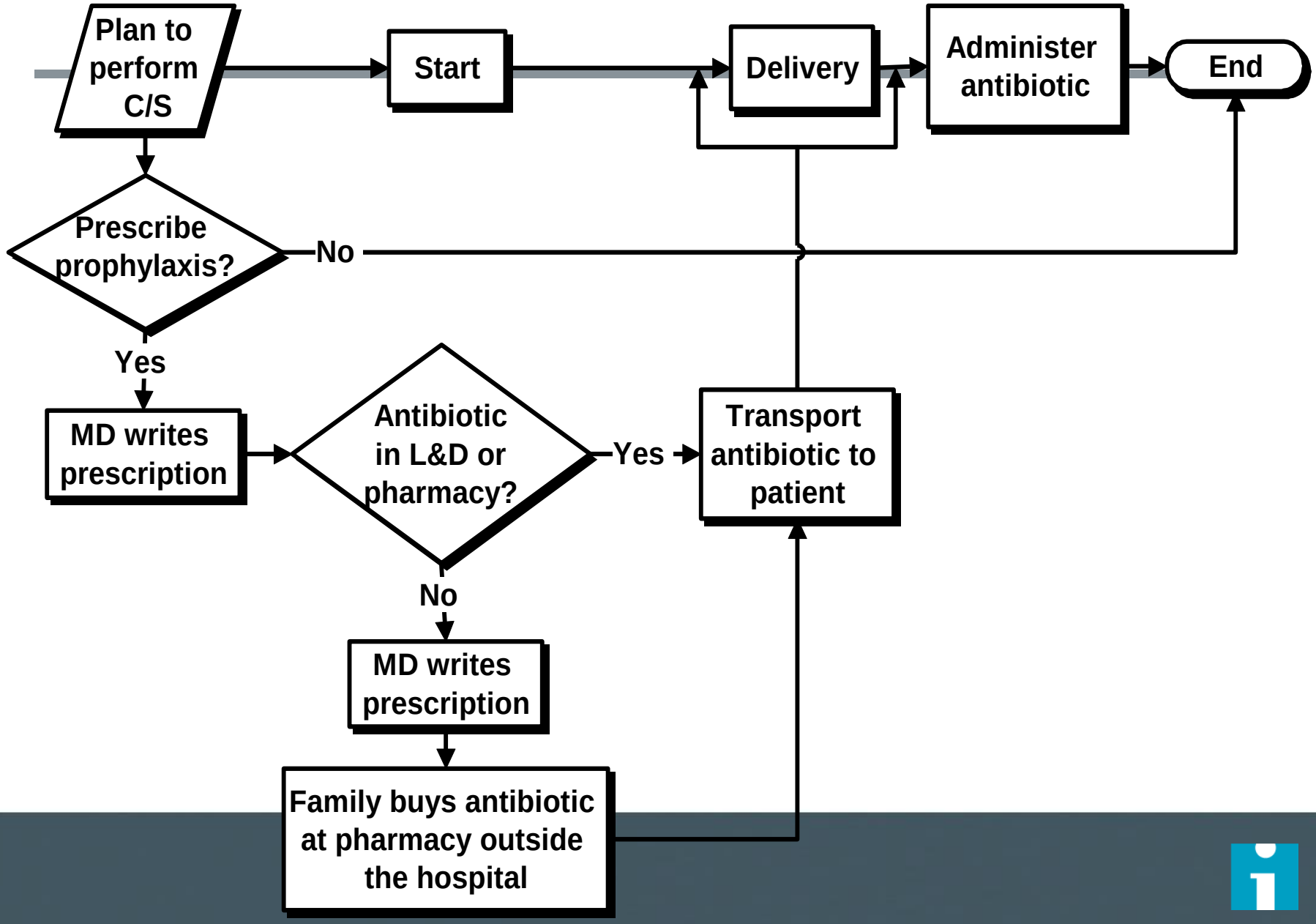
Priority Matrix

Factor	Importance	Within the capacity of hospital personnel to improve	Timeframe for improvement
Antibiotic prophylaxis	4	4	short
Skin preparation	3	4	short
Surgical technique	4	4	medium
Antenatal factors	3	1	long
Peripartum events	4	2	medium

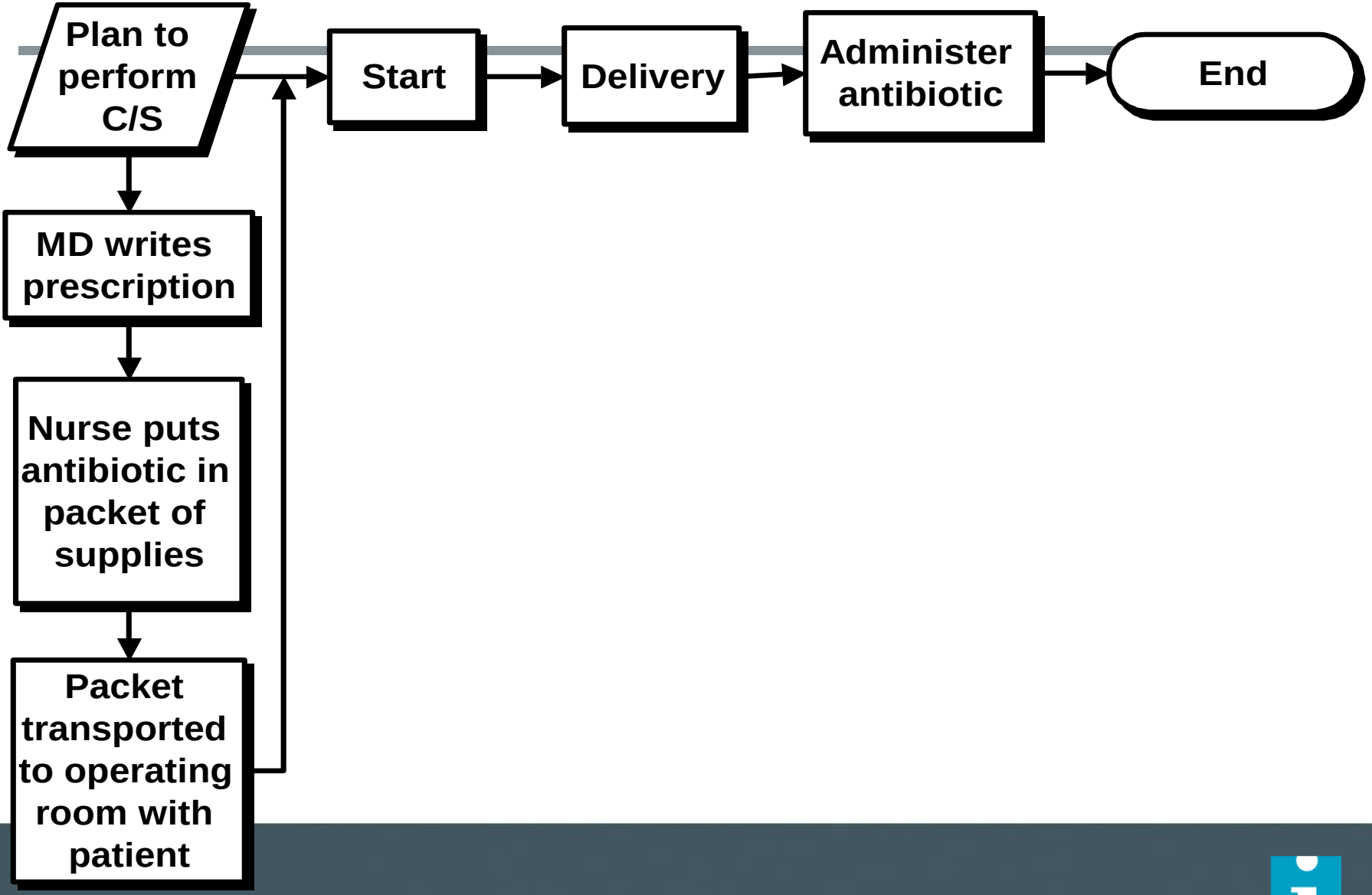
Utilization and Timing of Antibiotic Prophylaxis for Cesarean Section

	% receiving prophylaxis	% receiving prophylaxis ≤1 hour after delivery
Hospital A	**70%**	**31%**
Hospital B	**32%**	**70%**

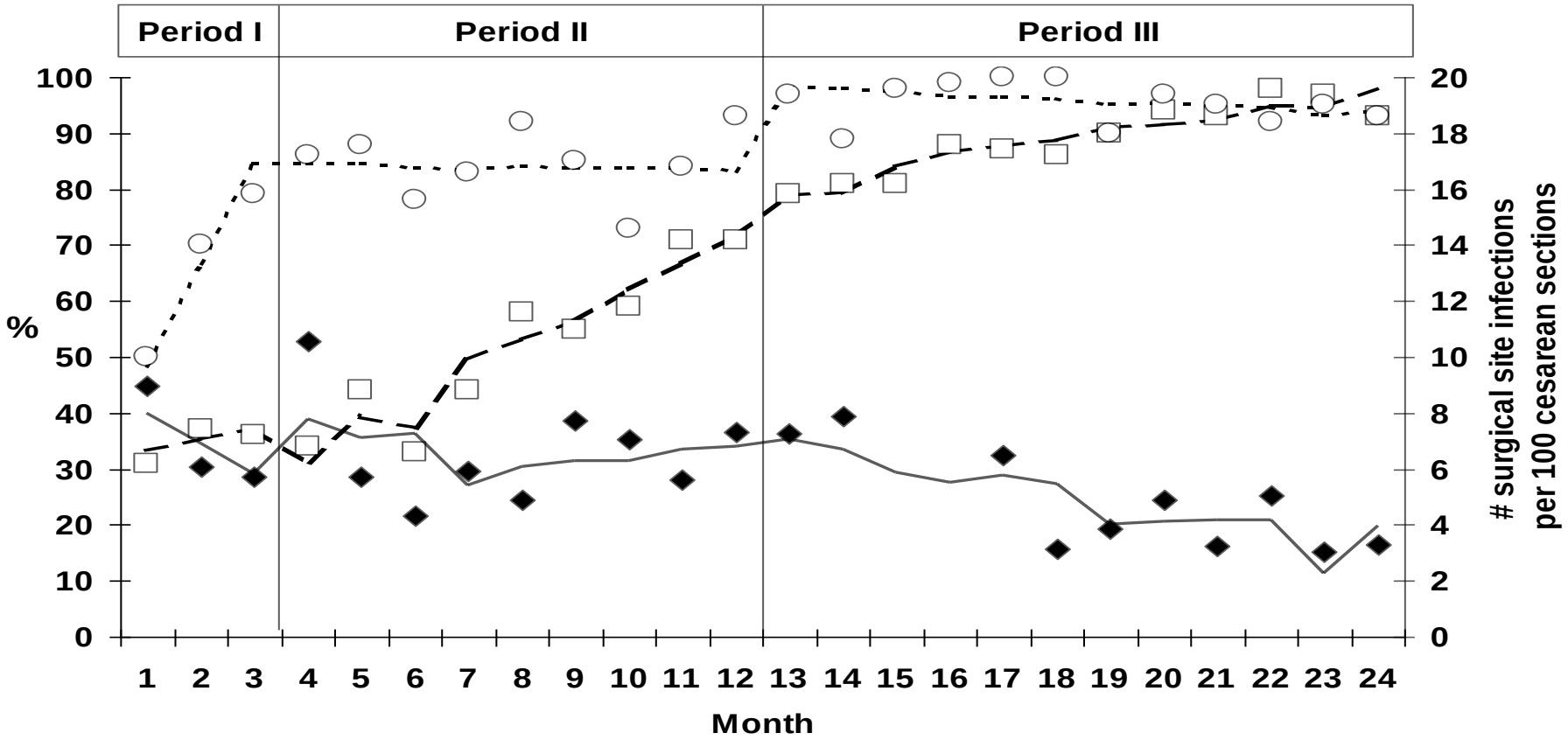
Hospital A: Existing System



Hospital A: Revised System



Utilization and Timing of Perioperative Antibiotic Prophylaxis & Surgical Site Infections After Cesarean Section



Weinberg M, et al. Arch Intern Med 2001

Experiential Learning – Making Rigorous QI Part of Routine Work at the Point of Care

Monitoring Patient Safety

- Voluntary event reporting
- Morbidity and mortality conferences/reports
- Chart auditing
  - IHI Global Trigger Tool
- Automated data mining
  - Patient Safety Indicators (AHRQ PSIs)
  - Automated trigger tools
- Random Safety Audit

Random Safety Audit

- Translated from industry (banking and random process audits *via* Paul Plesk)
- Real time by the front line
- Data and feedback virtually immediate
  - Reliability of key safety processes evident immediately
  - Motivating, enabling, reinforcing; builds self-efficacy and social norms (key elements of behavioral change theory)
- Combines audit and feedback with iterative PDSAs
  - Even better than “what can I try by next Tuesday”

Qual Saf Health Care. 2005:14:284-9.

Random Safety Audit

- Systematically monitors a subset of error-prone points in the system that have the potential to harm patients
- Items selected randomly to be addressed either on
  - On multi-disciplinary rounds (provider input required)
  - Any time during day (provider input not needed)
- Deck can be “packed”
- 20 items developed by expert consensus for testing in NICU (21st item added later)
- 4X6 “cards” include yes/no data form; trivia question on back

Staff Perceptions of the Random Safety Audit

- 84% of staff participated in rounds on which audit performed
- 100% agreed or strongly agreed that this improved quality and safety
- 95% agreed/strongly agreed that it increased knowledge of clinical guidelines and safety goals
- Only 9% agree with statement “asking a safety question of rounds took up too much time”

Three Simple Examples of Interprofessional QI Involving Junior Doctors

- Do you know who your doctor is?
- Understanding drug usage and reducing unnecessary prescriptions
- Learning how to look for medical errors as part of routine work

Try Something Yourself

- At work – “You are always late for rounds!”
- At home – avoiding the weed whacker *(http://www.ihi.org/education/IHIOpenSchool/resources/Pages/Activities/PDSACyclesFromCLABSIsToCucumbers.aspx)*

Ten Tips for Incorporating Rigorous Quality Improvement into Everyday Work

BMJ Qual Saf. 2011 Apr;20 Suppl 1:i69-72

Tip 1

- Select projects that really will make a difference to providers and patients
  - Focus on clinically relevant projects that substantially improve those processes of care that are tightly linked to the outcomes of interest to providers and patients
  - Think of a headline the CEO or CMO would want to feature on the organization's website

Tip 2

- Set bold, clear, measureable aims and a specific timeline for achieving them
  - Think of fundamental advances that will measurably impact care and outcomes and engage clinical staff

Tip 3

- Assemble a multi-disciplinary team including providers, stakeholders, and methodologists, tailored to the specific aim of the project
  - Be agnostic with respect to disciplines and titles when assigning roles and rewards
  - If publication is anticipated, define roles and authorships very early on
    - Giving appropriate first authorships to non-MDs does not jeopardize publication in leading journals

Tip 4

- Be creative in recruiting experts
  - Behavioral scientists, sociologists, economists, epidemiologists, statisticians, qualitative researchers, and other experts often are looking for opportunities to partner with clinical researchers, especially if there is a prospect of co-authorship

Tip 5

- Adopt the most rigorous study design possible without disrupting routine work unduly
  - Incorporate data collection into usual activities of professional staff (eg: infection control, clinical pharmacists)

Tip 6

- Do everything possible not to sacrifice data quality and completeness
  - Develop simple data collection tools that also simplify and increase reliability of daily work
  - Checklists and standardized order sets are especially useful

Tip 7

- Take advantage of emerging certification requirements for clinical staff and make improvement academically viable
  - MOC requirements can be satisfied by improvement activities (eg: Vermont Oxford's NICQ collaborative)
  - Morph "good citizen" work, such as CPG development and evaluation, into publications and other CV-worthy work products

Tip 8

- Do not assume that substantial external grant funding is required to perform credible quality improvement work
  - Leverage institutional resources
  - Encourage development of institutional small grant awards for quality improvement
  - Consider support from payers, industry, and professional societies
  - Look for “free” hands, such as graduate students

Tip 9

- Pay careful attention to the ethics of quality improvement work, but try to craft projects that are unlikely to require formal IRB approval
  - Remember
    - Poorly designed projects are unlikely to yield useful knowledge and arguably are not ethical
    - Patients have a right to expect that unexpected consequences will be considered and monitored

Tip 10

- Anticipate publication
  - Apply the SQUIRE guidelines
  - Write a “dummy” abstract and construct “dummy” tables and figures
  - Be clear about authorships
  - Make the most of “negative” studies