

**Scale up and spread...**

**Why is it so hard?**



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# Spread and Scale Up defined

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**Spread:** Taking a new system or intervention and replicating it at other sites.

**Scale-up:** Overcoming the system/infrastructure issues that arise during implementation and spread of changes for results at the system level.

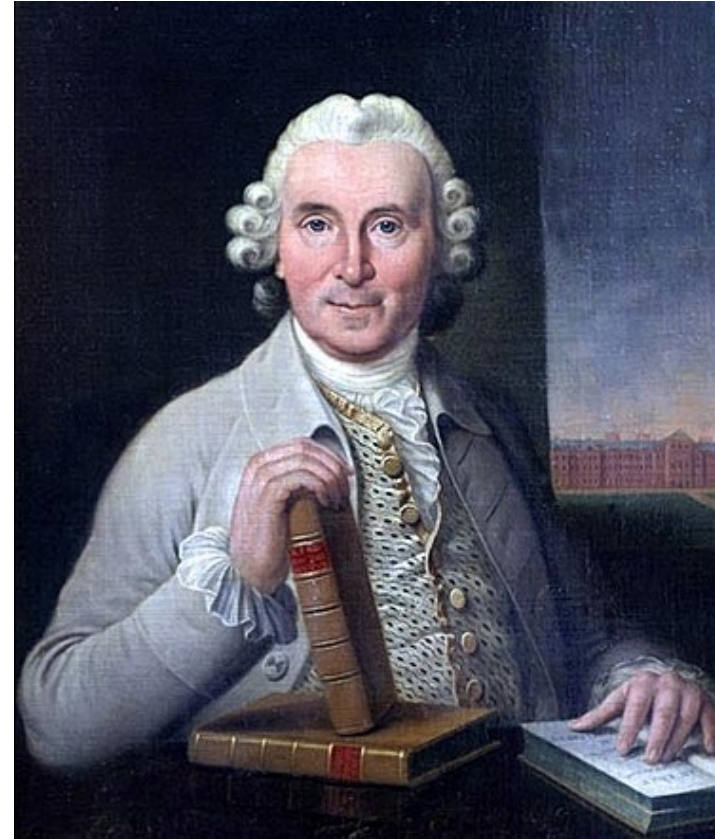
**“Strong evidence for an innovation is necessary, but not sufficient, to result in its adoption”**

Mark Freeman, 2012, The International Journal of Management Education

# Why is scaling up improvement hard?



James Lancaster - 1601



James Lind - 1747

# Why is scaling up improvement hard?

## *The* NEW ENGLAND JOURNAL *of* MEDICINE

ESTABLISHED IN 1812

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### An Intervention to Decrease Catheter-Related Bloodstream Infections in the ICU

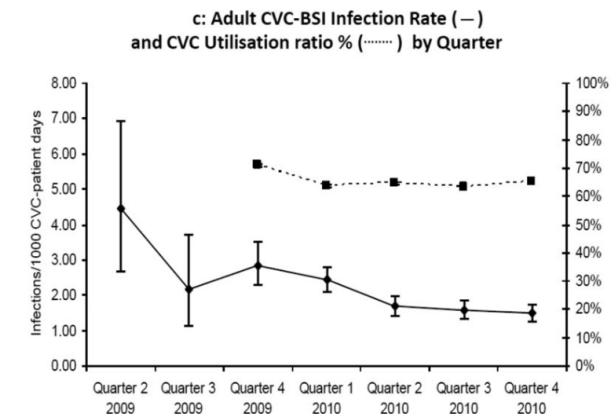
Peter Pronovost, M.D., Ph.D., Dale Needham, M.D., Ph.D., Sean Berenholtz, M.D., David Sinopoli, M.P.H., M.B.A., Haitao Chu, M.D., Ph.D., Sara Cosgrove, M.D., Bryan Sexton, Ph.D., Robert Hyzy, M.D., Robert Welsh, M.D., Gary Roth, M.D., Joseph Bander, M.D., John Kepros, M.D., and Christine Goeschel, R.N., M.P.A.

#### Michigan Keystone project 108 ICUs

Reduction from 7.7 infections per 1000 catheter days to 1.4 at 16-18months follow-up  
( $p < 0.002$ )

**'Matching Michigan': a 2-year stepped interventional programme to minimise central venous catheter-blood stream infections in intensive care units in England**


215 ICUs across England



**“Up to 70% of improvement projects never spread”**


Eccles R, Miller-Perkins K, Serafeim G. How to Become a Sustainable Company. MIT Sloan Management Review 2012; 53(4): 43-50






**SIN:** Expect huge improvements quickly then start spreading right away.

**DO THIS INSTEAD:** Create a reliable process before you start to spread.




**SIN:** Don't bother testing—just do a large pilot.

**DO THIS INSTEAD:** Start with small, local tests and several PDSA cycles.




**SIN:** Spread the success unchanged. Don't waste time "adapting" because, after all, it worked so well the first time.

**DO THIS INSTEAD:** Allow some customization, as long as the elements that are core to the improvements are clear.




**SIN:** Rely solely on vigilance and hard work.

**DO THIS INSTEAD:** Sustain gains with an infrastructure to support them.




**SIN:** Give one person the responsibility to do it all. Depend on "local heroes."

**DO THIS INSTEAD:** Make spread a team effort.



**SIN:** Check huge mountains of data just once every quarter.

**DO THIS INSTEAD:** Check small samples daily or frequently so you can decide how to adapt spread practices.



**SIN:** Require the person and team who drove the initial improvements to be responsible for spread throughout a hospital or facility.

**DO THIS INSTEAD:** Choose a spread team strategically and include the scope of the spread as part of your decision.

# Why is scaling up improvement hard?

Attention to  
context as well as  
technical  
interventions

Designing for  
scale from the  
outset

Depth and  
closeness of  
support structure

Ability to adapt &  
customise the  
interventions

Capacity &  
capability

Leadership  
attention

Dixon-Woods, M., Leslie, M., Tarrant, C. *et al.* Explaining *Matching Michigan*: an ethnographic study of a patient safety program. *Implementation Sci* **8**, 70 (2013).

Dixon-Woods M, Martin GP. Does quality improvement improve quality? *Future Hosp J*. 2016 Oct;3(3):191-194. doi: 10.7861/futurehosp.3-3-191. PMID: 31098223; PMCID: PMC6465806.

Greenhalgh T, Papoutsis C. Spreading and scaling up innovation and improvement. *BMJ*. 2019 May 10;365:l2068. doi: 10.1136/bmj.l2068. PMID: 31076440; PMCID: PMC6519511.



# Two Key Challenges:

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Adoption: Supporting humans to make the changes

- How do you *build demand* for the changes (i.e., make them desirable)?

Infrastructure: Structural work to support adoption at scale

- How do you ensure the system has the *capacity* to meet the demand you have built?

# Social Aspects of introducing change

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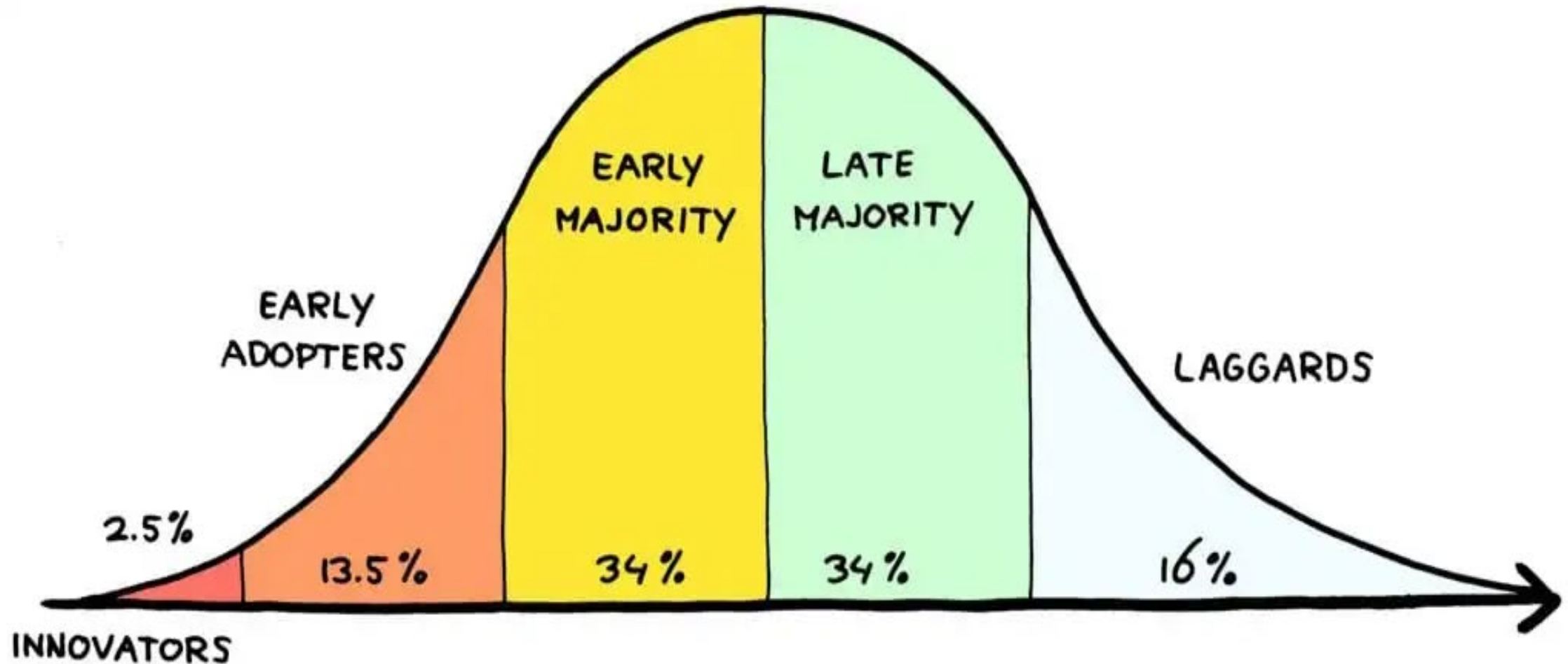
## Reactions to change

- Resistance
- Apathy
- Compliance
- Conformance
- Commitment

## People need to understand implications of change:

- Physical
- Logical
- Emotional

# Adopter Categorisation: Speed of Adoption



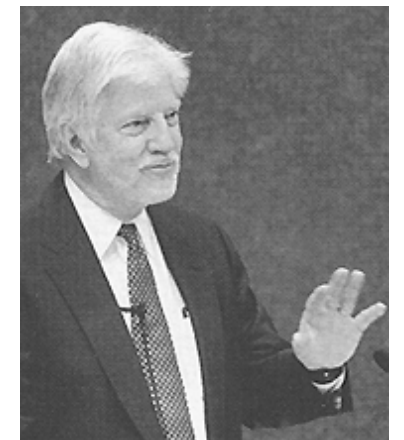
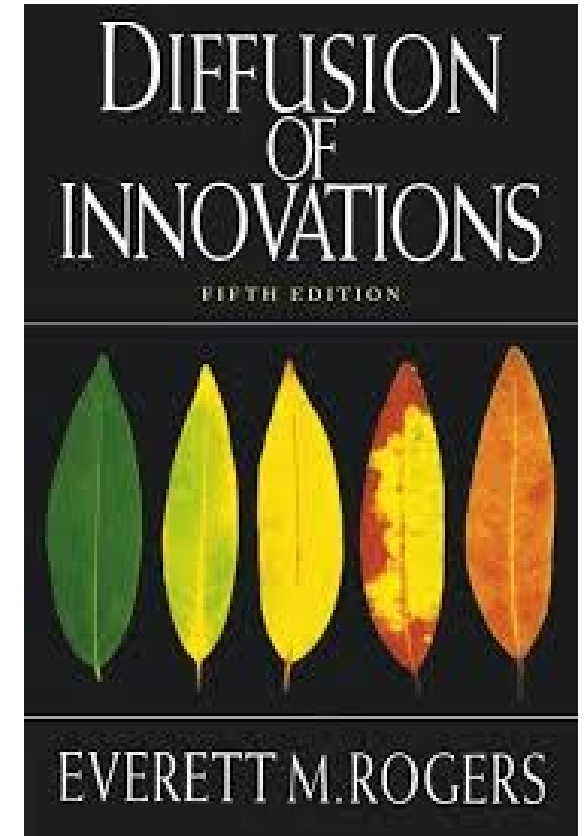
# *Diffusion of Innovations*, Everett Rogers

(1962, 1971, 1983, 1995, 2005)

**Diffusion**: the process by which an innovation is communicated through certain channels over time, among the members of a social system

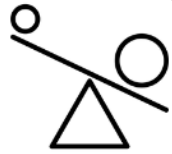
Diffusion includes both **spontaneous** and **planned** spread

**Innovation**: an idea, practice, or object that is perceived as new by an individual or other unit of adoption



# Attributes of the Change that Affect the Rate of Adoption

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## **RELATIVE ADVANTAGE**

Is it clearly better than what I am using now?



## **COMPATIBILITY**

How well does it align with my needs, beliefs, and accepted ways of working?



## **EASE OF USE**

How complex is it? What is the learning curve?



## **TRIALABILITY**

Can I try before I buy?



## **OBSERVABILITY**

Are the benefits obvious or easy to explain?

# Worksheet to Assess Ideas for Adoptability

Attributes	Relative to the Attribute, the ideas are:					Comments
	Weak	OK		Strong		
	1	2	3	4	5	
Relative Advantage						
Compatibility						
Complexity						
Trialability						
Observability						



# Building System Capacity to Support the Change:

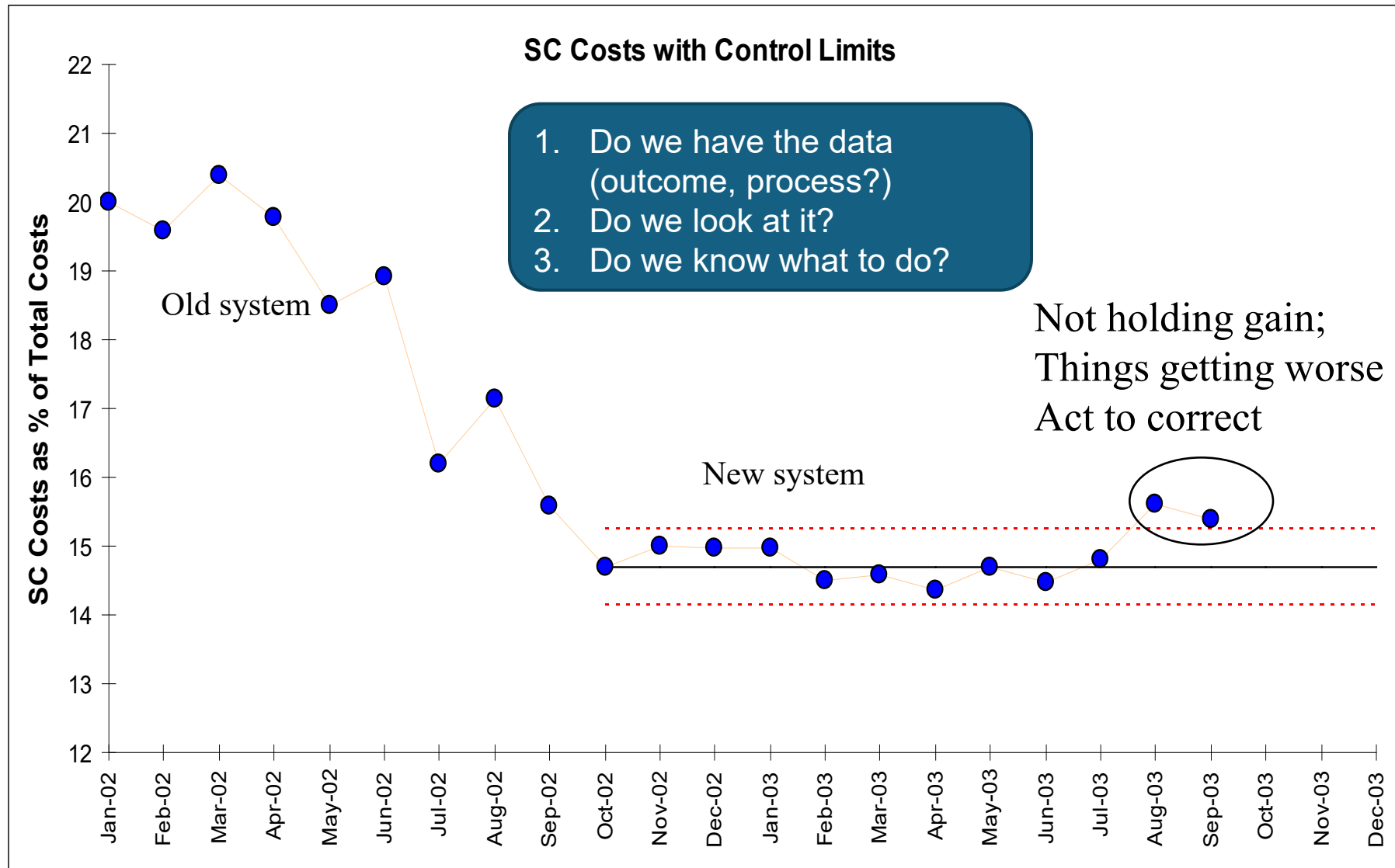
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## MOCHA

- Measurement
- Ownership
- Communication (including training)
- Hardwiring the change(s)
- Assessment of workload



# Measurement: Quality control



# Ownership

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- Determine who will own the work (ideally those who own implementation and sustainability also owned the improvement work)
- Role of the process owner in quality control
  - Monitor operational status
  - Define standard work
  - Manage staffing
  - Escalation

# Communication and Training

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- Ensuring awareness of the change(s) and the decision(s) behind the change
- Decision to action:
  - Peer-to-peer (those who have tested the change help others)
  - “At the elbow” or mentoring
  - Ongoing technical support
  - Learning – action
  - Address the change of mindset needed and the technical change(s)
- Consider initial and ongoing training for existing and new employees

# How you train matters

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What do adults retain after three months?

- Lecture-based training (e.g., presentations, videos, demonstrations, discussions) = 10%
- Learn by doing (e.g., role plays, simulations, case studies) = 65%
- Practice what was learned in the workplace = ~100%

# Hardwiring the change

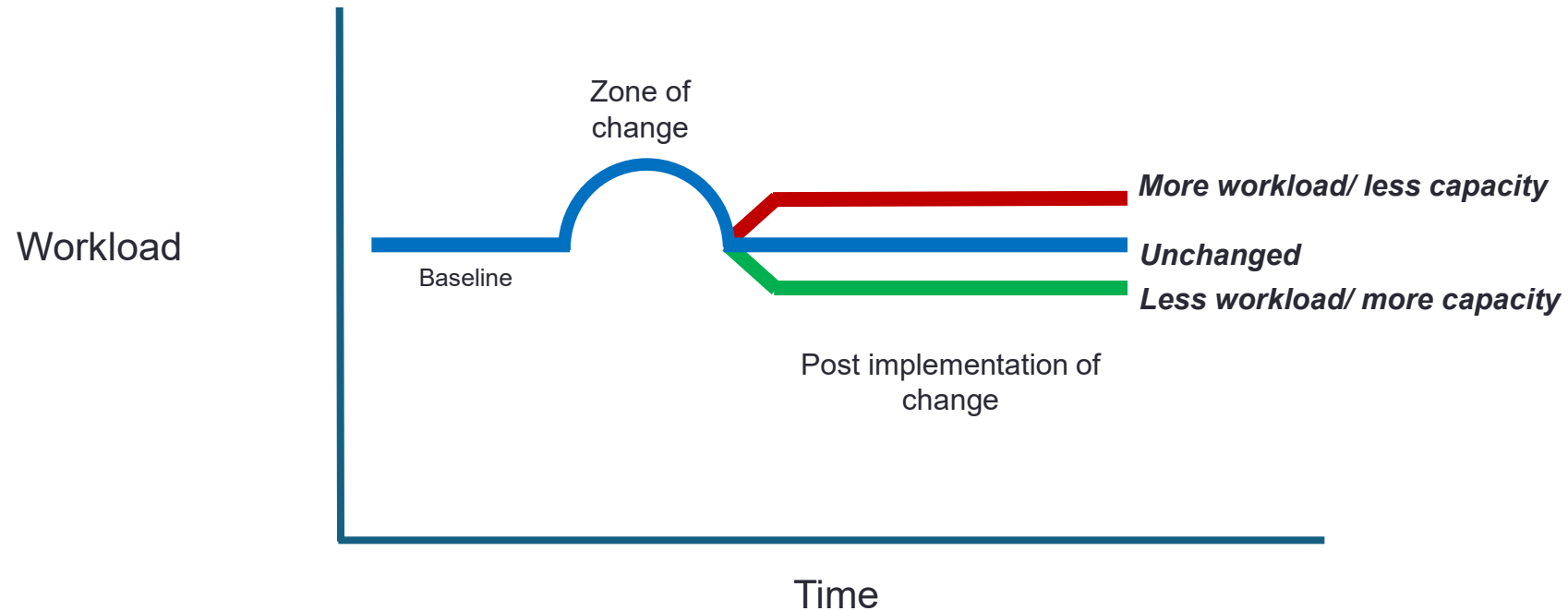
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Make it easy to do the right thing and hard to do the wrong thing

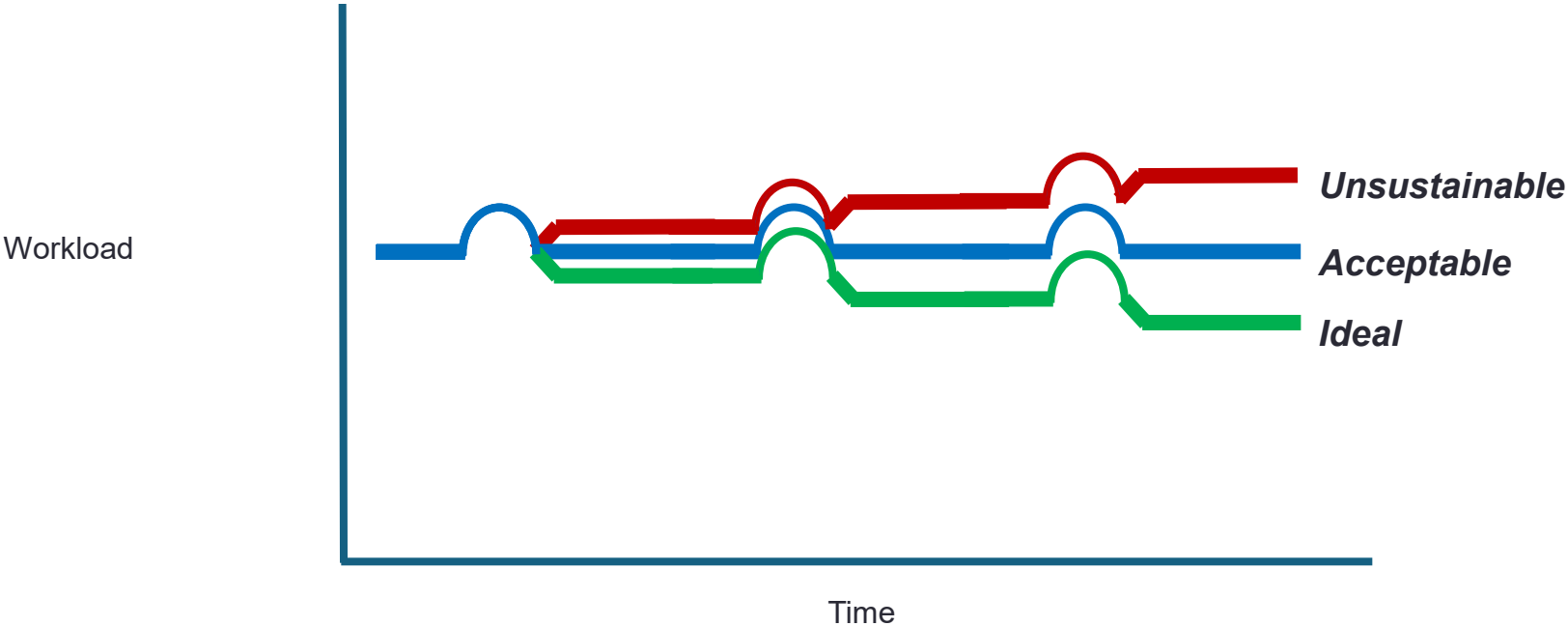
- Standardization and accountability for following standard work
- Documentation
- Remove the “old way”
- Reduce reliance on “vigilance”
- Ensure resources



# Impact of Change on Workload/ Capacity



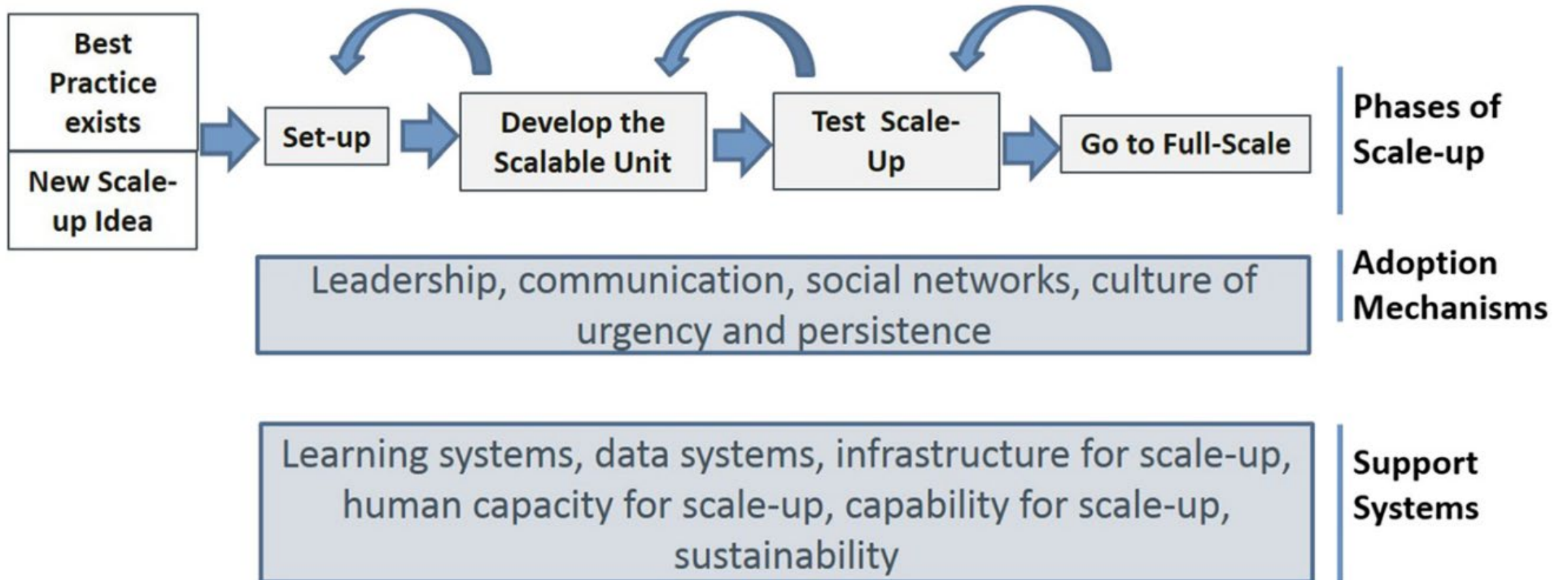
# Cumulative Impact of Change



# 9 Methods for spread and scale up

1. **Natural diffusion** - spread ideas without intentionality
2. **Campaigns** - shared, quantitative aim connected to a targeted social system (evidence-based intervention, measurement, communications, and distributed field operations)
3. **Collaborative** (physical or virtual) – networked structured learning and exchange around shared aims, measures, and goals
4. **Extension agents** - spread through training and mentoring.
5. **Emergency mobilization** – rapid efficient assembly of plans, materials, supplies.
6. **Affinity group** - develop superior model, then dissemination to other sites in the system.
7. **Executive mandates** – policy, guidelines, protocols
8. **Wave sequence** - systematic spread within integrated multi-level systems
9. **Hybrid approaches** - where combined elements from different approaches form a new approach.

# Designing for scale from the outset...



METHODOLOGY

Open Access



# A framework for scaling up health interventions: lessons from large-scale improvement initiatives in Africa

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## Abstract

**Background:** Scaling up complex health interventions to large populations is not a straightforward task. Without intentional, guided efforts to scale up, it can take many years for a new evidence-based intervention to be broadly implemented. For the past decade, researchers and implementers have developed models of scale-up that move beyond earlier paradigms that assumed ideas and practices would successfully spread through a combination of publication, policy, training, and example.

Drawing from the previously reported frameworks for scaling up health interventions and our experience in the USA and abroad, we describe a framework for taking health interventions to full scale, and we use two large-scale improvement initiatives in Africa to illustrate the framework in action. We first identified other scale-up approaches for comparison and analysis of common constructs by searching for systematic reviews of scale-up in health care, reviewing those bibliographies, speaking with experts, and reviewing common research databases (PubMed, Google Scholar) for papers in English from peer-reviewed and “gray” sources that discussed models, frameworks, or theories for scale-up from 2000 to 2014. We then analyzed the results of this external review in the context of the models and frameworks developed over the past 20 years by Associates in Process Improvement (API) and the Institute for Healthcare Improvement (IHI). Finally, we reflected on two national-scale improvement initiatives that IHI had undertaken in Ghana and South Africa that were testing grounds for early iterations of the framework presented in this paper.

**Results:** The framework describes three core components: a sequence of activities that are required to get a program of work to full scale, the mechanisms that are required to facilitate the adoption of interventions, and the underlying factors and support systems required for successful scale-up. The four steps in the sequence include (1) *Set-up*, which prepares the ground for introduction and testing of the intervention that will be taken to full scale; (2) *Develop the Scalable Unit*, which is an early testing phase; (3) *Test of Scale-up*, which then tests the intervention in a variety of settings that are likely to represent different contexts that will be encountered at full scale; and (4) *Go to Full Scale*, which unfolds rapidly to enable a larger number of sites or divisions to adopt and/or replicate the intervention.

**Conclusions:** Our framework echoes, amplifies, and systematizes the three dominant themes that occur to varying extents in a number of existing scale-up frameworks. We call out the crucial importance of defining a scalable unit of organization. If a scalable unit can be defined, and successful results achieved by implementing an intervention in this unit without major addition of resources, it is more likely that the intervention can be fully and rapidly scaled. When tying this framework to quality improvement (QI) methods, we describe a range of methodological options that can be applied to each of the four steps in the framework’s sequence.

**Keywords:** Scale-up, Spread, Adaptive design, Sustainability, Large-scale spread, Quality improvement

## Using quality improvement methods to test and scale up a new national policy on early post-natal care in Ghana

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**Introduction** The first week of life presents the greatest risk of dying for a young infant. Yet, due to the sociocultural, financial, geographical and health system barriers found in many resource-poor settings, infants do not access health care until much later. To reduce neonatal mortality, the Ghana Health Service proposed a new policy that promotes skilled care during the first week of life. We report the results of an initiative that uses quality improvement (QI) methods to test the feasibility and effectiveness of the new early post-natal care (PNC) policy and its subsequent scale-up throughout northern Ghana.

**Methods** Over a 10-month period, 30 networked QI teams from 27 rural health facilities developed and tested both facility-based and community-based changes to their processes of maternal and neonatal care. Coverage and outcome data were analysed using an interrupted time-series design.

**Results** Over 24 months, early PNC increased from a mean of 15% to 71% for visits within the first 48 h, and from 0% to 53% for visits on Day 6 or 7. We observed a slower increase in skilled delivery (mean of 56% to 82%) over a longer period of time (35 months). Facility-based neonatal mortality remained unchanged: mean of 5.1 deaths per 1000 deliveries. Using the most effective change ideas developed in the 27 test facilities, the early PNC policy was scaled up over the subsequent 2 years to 576 health facilities in all 38 districts of northern Ghana.

**Conclusions** This initiative demonstrates the utility of a QI approach in testing, implementing and subsequent scaling up a national policy for early PNC in a resource-constrained setting. This approach provides a model for improving the implementation of other national health policies to accelerate the achievement of the Millennium Development Goals in Ghana and other resource-poor countries.

**Keywords** Quality improvement, implementation science, post-natal care, neonatal mortality, large-scale change, Ghana