# Quality improvement as a primary approach to change in healthcare: a precarious, self-limiting choice?

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Total quality management activities have produced undeniable positive results. However, I predict that the way these activities are implemented will lead to the programs becoming self-limiting…seeds for the deterioration of total quality management lie in the very practices that today produce successful outcomes. (Chris Argyris, professor of organizational behavior, Harvard Business School)[1]

## INTRODUCTION

Argyris's contention above begs the question: Is quality improvement as a primary approach to change in healthcare potentially self-limiting? Our viewpoint is yes, particularly when fundamental underpinnings and mental models are not continually surfaced and challenged.[1 2] We propose two imbalances underlie why quality improvement as a primary approach to change in healthcare can become self-limiting: prioritising performance (improving organisational-level quality measures) over participants' (improvement leaders, facilitators, team members) emotional experience, and privileging process-technical over sociobehavioural design elements.[3] Contributing to these imbalances are performance-driven cultures (eg, 'zero-harm' goals[4]), pacesetting leadership styles,[5] and environmental and organisational pressures for rapid, substantial improvement.

To make clear, healthcare quality improvement approaches do address participants' emotional experience as well as sociobehavioural design elements. Examples of the former include assessing participant emotions during design[6] and implementation,[7] addressing drivers of participant burn-out,[8] using psychology of change principles,[9] and attending to participants' emotional energy.[3 5 10] Examples of the latter include human-centred design thinking,[6] mindful organising,[11] appreciative inquiry,[12] relational coordination,[13] social movements theory,[3 14] sociotechnical systems theory[3] and video reflexive ethnography.[15]

However, we argue for optimising performance *and* participants' emotional experience as an explicit, enduring aim of all healthcare quality improvement initiatives, and for change approaches (inclusive of quality improvement) that dually privilege process-technical and sociobehavioural design elements as the norm. Failure to address these imperatives has real consequences. Specifically, we contend that pushing ever-harder on process-technical strengths of quality improvement approaches (ie, magnifying the design elements imbalance) adversely impacts how participants emotionally experience change, which hinders performance. We refer to this as a self-limiting cascade.

Our aim in describing the self-limiting cascade is to catalyse dialogue on quality improvement as a primary approach to change in healthcare, and reinforce aspects of the human system,[3 16] especially the emotional experience,[5 10 17 18] to help drive successful, enduring change and improvement. We also hope to resurrect interdisciplinary focus on theories of quality management[3 19 20] (the 'how' and 'why') and spur another renaissance in quality improvement.[21]

## SELF-LIMITING CASCADE WHEN QUALITY IMPROVEMENT IS THE PRIMARY APPROACH TO CHANGE

Underpinning the self-limiting cascade are three variables endemic to change and improvement (figure 1): the change approach, performance and the emotional experience. Emotional experience refers to 'emotions and related cognitions and behaviours surrounding
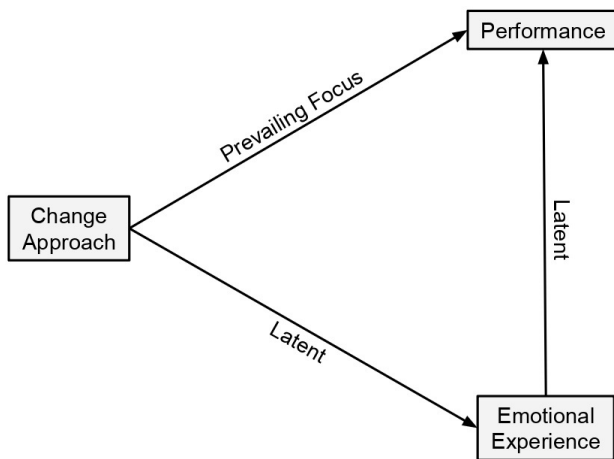
**Figure 1** Relationships endemic to change and improvement. Figure created by Keith E Mandel, MD, MSc and Steven H Cady, PhD.

events during change'.[18] While the prevailing focus is how a change approach impacts performance, we draw attention to two latent relationships: between a change approach and the emotional experience, and between the emotional experience and performance. Latent denotes that these relationships often lack visibility during change and improvement.

The latent relationships become salient as we describe the self-limiting cascade when quality improvement is the primary approach to change (figure 2).

The design elements imbalance becomes self-limiting as participants' emotional energy capacity for change progressively erodes, which diminishes their emotional experience. These self-limiting effects are

defined as follows. Emotional energy capacity is a 'continuum from enthusiasm, confidence, and initiative at the high end, down to passivity and depression at the low end'.[22] A diminished emotional experience manifests as recurring psychological distress, disengagement from one's social network or colleagues, and emotional exhaustion.[23] We link the design elements imbalance and self-limiting effects through the job demands-resources model and opposing domains hypothesis.

The job demands-resources model predicts that individuals experience stress and burn-out or motivation and engagement based on the balance between job demands and job resources.[24] Job demands involve sustained physical or mental effort that has physiological and psychological costs. Examples include workload, pace of change, and cognitive and emotional demands. Job resources help achieve work goals, reduce job demands and associated physiological and psychological costs, and stimulate personal growth and development. Examples include co-worker and supervisor support, team atmosphere and recognition.

Similarly, the opposing domains hypothesis specifies benefits and drawbacks based on the balance between two mutually suppressive brain regions: the task positive network (TPN) and default mode network (DMN).[25] TPN activation is associated with analytical thinking, problem-solving, decision-making and focused attention. DMN activation is associated with emotional self-awareness and self-regulation, developing relationships, sensitivity to others' emotions (empathy, compassion), and openness to new ideas.
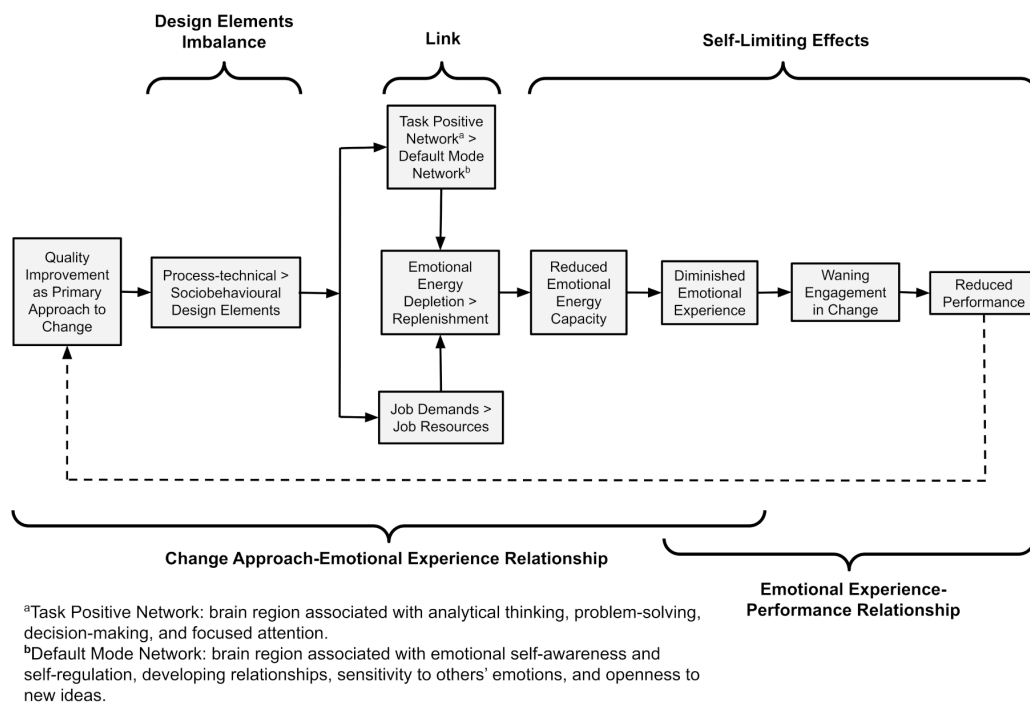


<sup>a</sup>Task Positive Network: brain region associated with analytical thinking, problem-solving, decision-making, and focused attention.
<sup>b</sup>Default Mode Network: brain region associated with emotional self-awareness and self-regulation, developing relationships, sensitivity to others' emotions, and openness to new ideas.

**Figure 2** Self-limiting cascade when quality improvement is the primary approach to change. Figure created by Keith E Mandel, MD, MSc and Steven H Cady, PhD.

We contend that pushing ever-harder on process-technical strengths of quality improvement approaches (ie, magnifying the design elements imbalance) is associated with job demands exceeding job resources, and TPN exceeding DMN activation/activities. The job demands-job resources and TPN-DMN imbalances erode emotional energy capacity through depletion and replenishment effects. Emotional energy depletion results from excessive job demands, sustained TPN activation/activities and an associated stress response tied to sympathetic nervous system arousal. Reduced emotional energy replenishment occurs as insufficient job resources, and suppression of the DMN and related activities diminish positive emotions.[22 24–26] Decreased emotional energy capacity manifests as burn-out[22 24 27] and sacrifice syndrome,[26] with emotional exhaustion, distressing emotions (anxiety, frustration), and eroding relationships. These impacts are congruent with the abovementioned manifestations of a diminished emotional experience. The collective impact of reduced emotional energy capacity, burn-out, sacrifice syndrome, and a diminished emotional experience is waning engagement in change, which adversely impacts performance.

To illustrate, consider the health system quality leader who has just been appointed to help achieve organisational improvement goals. Early impressive results are attributed to well-designed projects and an enhanced quality improvement infrastructure. Project meetings include robust dialogues on the data and intervention testing cycles. However, the dynamic soon shifts as project teams begin raising more and more concerns. Underpinning the concerns is escalating stress from ever more improvement initiatives and quality measures. The quality leader acknowledges the concerns but isn't open to changing course. Frustrated by the pace of change, the quality leader pushes project teams and improvement staff even harder to meet organisational goals. However, as everyone (including the quality leader) gets worn out, things start to unravel. Quality measures start to plateau, team member attrition increases and project leads begin stepping down.

## JUXTAPOSING THE SELF-LIMITING CASCADE WITH SENGE'S *LIMITS TO GROWTH* SYSTEMS THINKING ARCHETYPE

In Senge's systems thinking framework, quality improvement is situated in the *Limits to Growth* archetype.[28] The *Limits to Growth* archetype is a diagram of interrelated system dynamics that help explain why improvement efforts plateau or decline.[29] Senge characterises system dynamics as '…the harder you push, the harder the system pushes back; the more effort you expend trying to improve matters, the more effort seems to be required'.[30]

Juxtaposing the *Limits to Growth* archetype and self-limiting cascade serves two purposes. First, the *Limits to Growth* archetype substantiates self-limiting consequences of the design elements imbalance. Second, the *Limits to Growth* archetype reinforces that quality improvement approaches and the self-limiting cascade are embedded in system dynamics that cannot be avoided or resolved, only effectively managed.

The *Limits to Growth* archetype includes a reinforcing loop, system constraint and balancing loop. The reinforcing loop reflects a bidirectional, positive relationship between a change process and performance. However, pushing harder on the reinforcing loop has a downside—it erodes a system constraint (ie, limited resource). The system response to an eroding constraint is to slow the reinforcing loop through a balancing loop. We juxtapose the *Limits to Growth* archetype and self-limiting cascade as follows. Pushing harder on quality improvement approaches (the reinforcing loop) escalates the privileging of process-technical over sociobehavioural design elements. As this magnifies job demands exceeding job resources, and TPN exceeding DMN activation/activities, participants' emotional energy capacity for change (the system constraint)[22] erodes. The decline in emotional energy capacity and related burn-out, sacrifice syndrome, and diminished emotional experience contribute to waning engagement in quality improvement approaches (the balancing loop). In turn, waning engagement in quality improvement hinders performance. Without recognising the system constraint and balancing loop, waning engagement in quality improvement can be misconstrued as resistance.

Consider, for example, the physician and nurse co-leaders of an intensive care unit overwhelmed with patients with COVID-19. On top of an already onerous workload, they now need to address rising quality concerns. Their confidence is high due to prior quality improvement success. With support from health system improvement experts, they launch a portfolio of projects. Early results are impressive. But they soon struggle to keep up with reviewing data, testing interventions and meeting with project teams. They also find themselves increasingly fatigued, frustrated and disconnected from colleagues. It reaches a point where they can no longer juggle their clinical, administrative and quality leadership responsibilities. Improvement efforts slow and early quality gains dissipate.

## MENTAL MODEL SHIFTS BASED ON THE SELF-LIMITING CASCADE AND SYSTEM DYNAMICS

Based on the self-limiting cascade and system dynamics, we proffer three mental model shifts that underpin successful, enduring change and improvement: (1) *From* an explicit aim of optimising performance *to* also optimising participants' emotional experience; (2) *From* perceiving performance and participants' emotional experience as separate outcomes *to* also recognising the relationship; and (3) *From* intervening on performance and participants' emotional

experience in parallel *to* also intervening on change approach design elements, a shared influencing factor. In addition to encapsulating key takeaways, these mental model shifts provide a new lens for viewing the relationships endemic to change and improvement (figure 1).

## IMPLICATIONS

The self-limiting cascade, system dynamics and mental model shifts have two central implications for quality improvement leaders, organisation executives, governance groups and funders (eg, foundations, payers, governmental entities). The first implication involves explicit, enduring commitment to optimising performance *and* participants' emotional experience with all change and improvement efforts. The second implication involves steadfast focus on change approaches that dually privilege process-technical and sociobehavioural design elements. We contend that addressing these implications is not discretionary as each reflects a perpetual aim of the system in which improvement efforts are embedded. Magnifying these implications are contextual dynamics, such as COVID-19 pandemic effects on pre-existing burn-out and already overextended individuals and teams.[11]

Addressing these implications necessitates a balanced approach to change, which we define as improving performance *and* participants' emotional experience by linking quality improvement with change models grounded in management and organisational science (eg, organisational behaviour, organisation development and change, positive organisational change/scholarship, organisational psychology, organisational sociology), and social science (eg, psychology, social psychology, positive psychology).[3 19 20 31 32] While many healthcare quality improvement initiatives use change models grounded in management, organisational and social science,[3 6 9–15 33–35] it is not the norm and may be founded not on a theoretical stance but a feeling that the balance isn't right. Further, an explicit aim of optimising both performance and participants' emotional experience is often lacking.

One balanced approach is to link quality improvement with collaborative change. Collaborative change is defined as achieving mutually desired outcomes through purposeful experiences of sharing knowledge and resources.[36 37] Appreciative inquiry is a type of collaborative change, with participants collectively engaged on what matters most to them, positively framing improvement opportunities, envisioning the best possible future, amplifying and aligning human and organisation strengths, and discovering improvement ideas through 'high point stories' (times when individuals, teams and organisations were at their best).[38] An overall effect of collaborative change is that participants' experience shifts from change being 'done *to* me' to 'done *by and with* me'.

By improving the equilibrium between job demands and job resources, and between TPN and DMN activation/activities, we contend that a balanced approach to change can shift the cascade (figure 2) from self-limiting to self-amplifying (ie, improve participants' emotional energy capacity and emotional experience).[22 24 25 27] To illustrate the improved equilibrium and self-amplifying effects, we recast the earlier examples. Senior executives invite the quality leaders into a new conversation that is temporally separate from improvement initiative review meetings. The conversation opens with, 'What do you need to be successful *and* thrive?'. The quality leaders are also asked to reflect on best possible futures, strengths and 'high point stories' from both a personal and improvement standpoint. Surprised by the appreciative inquiries, the quality leaders share, 'This is the first time I've been asked these questions'. Feeling highly supported and valued, the quality leaders are more empathetic, compassionate and open to others' ideas. Re-energised by positive emotions (hope, inspiration, enthusiasm, confidence) and stronger relationships (increased trust and respect), their emotional experience of leading change shifts from diminished to 'elevated'.[38] Improvement teams see and feel the difference. Further, team members personally experience the improved equilibrium and self-amplifying effects as the quality leaders engage them in similar appreciative dialogues. And quality measures improve at unprecedented rates.

In summary, optimising performance *and* participants' emotional experience necessitates questioning and deviating from quality improvement as a primary approach to change. This presents an adaptive challenge[39] for healthcare as quality improvement is deeply entrenched in organisational identity, culture, structure and operations.

## RECOMMENDATIONS

To address the self-limiting cascade, system dynamics and mental model shifts, we offer the following recommendations (box 1).

First, measures of participants' emotional experience warrant as much focus as performance. Leaders' commitment is signalled by embedding emotional experience measures in aim statements of all change and improvement initiatives, and related scorecards. It is also demonstrated by learning from variation in emotional experience measures at the individual, improvement team and organisational levels. This includes engaging participants to understand their emotional experiences and improvement ideas, and identifying 'positive deviants',[33] initiatives with exceptional levels of performance *and* participants' emotional experience. Emotional experience measurement instruments for testing and refinement include the Feelings of Energy at Work Scale,[22 40] Toxic Emotional Experiences Scale,[23] Energy Compass,[24] Thriving at

**Box 1    Recommendations to address the self-limiting cascade of common approaches to quality improvement**

1. Publicly commit to an explicit, enduring aim of optimising performance *and* participants' emotional experience with all change and improvement efforts.
2. Embed participant emotional experience measures in aim statements of all change and improvement initiatives, and related scorecards.
3. Discuss emotional experience measures with participants to understand their perspectives and improvement ideas.
4. Identify 'positive deviants', initiatives with exceptional levels of performance *and* participants' emotional experience.
5. Use Senge's *Limits to Growth* archetype to discern system dynamics that impact improvement efforts.
6. Link quality improvement approaches with change models grounded in management, organisational and social science.
7. Maintain a steadfast focus on change approaches that dually privilege process-technical and sociobehavioural design elements.
8. Promote the adoption and spread of balanced change approaches and emotional experience measures.
9. Strengthen governance, executive and improvement leader expertise in science underpinning the self-limiting cascade, system dynamics, emotional experience measures and balanced change approaches.
10. Access management, organisational and social science domain experts, including professional and academic scholars, and incorporate content into education and leader development programmes.

Box created by Keith E Mandel, MD, MSc and Steven H Cady, PhD.

Work Scale,[41] Productive Energy Measure[22 42] and Maslach Burnout Inventory.[43]

Second, knowledge of, and experience with, science underpinning the self-limiting cascade, system dynamics, emotional experience measures and balanced change approaches should exist at the governance, executive, improvement leader and centralised infrastructure (organisation effectiveness, quality improvement, human resources) levels. Strategies include accessing management, organisational and social science domain experts, such as professional and academic scholars, and incorporating content into education and leader development programmes.

Third, academic-practice collaboration towards linking management, organisational, social and quality improvement science is pivotal.[3 19 20 31 32 44 45] Collaboration opportunities include designing and evaluating balanced change approaches, integrating balanced change approaches and emotional experience

measures into improvement initiatives, using the *Limits to Growth* archetype,[28–30 46 47] and advancing novel theories of quality management (the 'how' and 'why'). Building on past (National Science Foundation *Transformations to Quality Organisations* initiative,[20] *McLoughlin Colloquium on the Epistemology of Improving Quality,* Academy of Management-Institute of Medicine *Knowledge Sharing Project*, Health Management Research Alliance *Brilliance Project*) and current (Partnership Centre for Health System Sustainability, The Healthcare Improvement Studies Institute, Organisation Theory in Healthcare Association, National Science Foundation *Centre for Health Organisation Transformation* initiative) interdisciplinary partnerships is important in this regard.

## CONCLUSION

All improvement requires change, but not all change will result in improvement. (Langley *et al*)[48]

We conclude by recasting this oft-cited quote. We do so to encapsulate the primary message and highlight its broader relevance.

All improvement requires change, and all change requires a balanced approach that improves performance *and* participants' emotional experience.

Quality improvement as a primary approach to change in healthcare is a precarious choice because it is not explicitly designed to optimise performance *and* participants' emotional experience. Magnifying the precariousness is a self-limiting cascade that can adversely impact both outcomes. Our intent in describing the self-limiting cascade and its implications is to catalyse dialogue on quality improvement as a primary approach to change in healthcare, heighten focus on participants' emotional experience, engender the proposed mental model shifts, and further balanced change approaches (inclusive of quality improvement) explicitly designed to improve performance *and* participants' emotional experience.

Our views proposed here re-envision the healthcare quality improvement paradigm by building on influential contributions that include Argyris's self-limiting contention,[1] Senge's *The Fifth Discipline*[30] and the National Science Foundation's landmark effort (*Transformations to Quality Organisations*) to link management science and other disciplines with quality improvement.[20] Standing on the shoulders of these (and many other) giants,[49] we also hope to resurrect interdisciplinary focus on theories of quality management[3 19 20] and spur another renaissance in quality improvement.[21]

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