Institute *for* Healthcare Improvement

IHI Psychology of Change Framework

to Advance and Sustain Improvement

AUTHORS:

Kate Hilton, JD, MTS: *Faculty, IHI*

Alex Anderson: *Research Associate, IHI*

The Institute for Healthcare Improvement (IHI) is a leading innovator in health and health care improvement worldwide. For more than 25 years, we have partnered with visionaries, leaders, and frontline practitioners around the globe to spark bold, inventive ways to improve the health of individuals and populations. Recognized as an innovator, convener, trustworthy partner, and driver of results, we are the first place to turn for expertise, help, and encouragement for anyone, anywhere who wants to change health and health care profoundly for the better. The ideas and findings in these white papers represent innovative work by IHI and organizations with whom we collaborate. Our white papers are designed to share the problems IHI is working to address, the ideas we are developing and testing to help organizations make breakthrough improvements, and early results where they exist.

Contents

Executive Summary

This white paper is a guide for all leaders interested in understanding the underlying psychology of change and leveraging its power to impact quality improvement efforts: to achieve breakthrough results, sustainably, at scale. Improvement science has given health care improvers a theoretical framework and the applied technical skills to understand variation, study systems, build learning, and determine the best evidence-based interventions ("what") and implementation strategies ("how") to achieve the desired outcomes. Yet, health care improvers worldwide still struggle with the adaptive side of change, which relates to unleashing the power of people ("who") and their motivations ("why") to advance and sustain improvement — two commonly cited reasons for the failure of improvement initiatives.

The paper presents a framework and set of methods for the psychology of change — five interrelated domains of practice that organizations can use to advance and sustain improvement:

- Unleash Intrinsic Motivation;

- Co-Design People-Driven Change;

- Co-Produce in Authentic Relationship;

- Distribute Power; and

- Adapt in Action.

Building on the legacies of W. Edwards Deming, Everett Rogers, and many others, a renewed focus on the human side of change increases the likelihood that efforts to improve health and health care will succeed in the short term and be scaled and sustained over time.

The Human Side of Change

Although there are impressive examples of successful improvements and remarkable outcomes in health care systems all over the world, the challenge of achieving results in our health systems and communities, let alone at scale, remains persistent. There is a substantial gulf between what we know and what we do in practice. Countless evidence-based improvements and innovations across health disciplines take years to be adopted, or do not become common practice due to low rates of adoption and sustainability.[1]

The rate at which improvements spread relies at least in part on the people who are implementing, spreading, and communicating about the change in practice. In his book, *Diffusion of Innovations*, Everett Rogers posited that an innovation must be widely adopted in order to become self-sustaining. Within the rate of adoption, there is a point at which an innovation reaches critical mass. Rogers defines five categories of adopters: innovators, early adopters, early majority, late majority, and laggards (recently called "traditionalists").[2] Diffusion manifests itself in different ways and is highly subject to the type of adopters and their process for engaging others to adopt the innovation.

> *The rate at which improvements spread relies at least in part on people.*

Improvement thought leader W. Edwards Deming addressed this by stressing the importance of psychology — the adaptive, human side of change — in his System of Profound Knowledge, in which he distilled the body of information and skills that can be brought to bear on any improvement into four interrelated areas: appreciation for a system, knowledge of variation, theory of knowledge, and psychology.[3] Psychology, in Deming's definition, is the way people think and feel, what motivates them, what demotivates them, the problematic effects of incentives, and how they behave — including when they encounter change. Dr. Deming acknowledged that all improvement occurs in human systems, in which people interact with each other. He recommended that for improvement to succeed, leaders need to understand and master the broad area of psychology and interpersonal relationships. He understood that people are the fundamental source of value, and that it takes work and expertise to create a culture that respects and motivates them.

Most quality improvement projects require people to take new approaches to both technical and adaptive challenges. **Technical challenges** are clearly defined, can be solved by experts or compliance to authorities, and can achieve gains in short time frames. **Adaptive challenges** are harder to identify, must be solved by the people affected by the problem, and require more time to achieve outcomes.[4] For example, administering medication to lower blood pressure is a technical approach, whereas inviting patients to change their lifestyles and diets is an adaptive one. Adaptive change relies on people's commitment to adopt new attitudes, competencies, beliefs, and behaviors. Among other things, Ronald Heifetz, founder of the Center for Public Leadership at the Harvard Kennedy School, recommends that leaders dealing with adaptive change "pinpoint how value systems or methods of collaboration need to change," "give work back to people, to define and solve problems," and "regulate the inevitable distress that adaptive work generates — since people resist change."[5]

Improvement leaders frequently experience resistance. There are many good reasons why people resist change: fear of losing control, excess uncertainty, unease with surprise, and fear of threatening one's way of doing things.[6] Resistance is the judgment made by the brain that the proposal for change threatens what people are currently doing. Practically, resistance comes in the form of emotions or behaviors meant to impede being changed. People demonstrate it as apathy, hopelessness, complacency, self-doubt, outright rejection, and, most of all, fear. It can also take

more subtle forms such as publicly acting in accordance while privately disagreeing, especially in compliance-based settings. And it can come from many sources, from senior leaders who resist the provision of resources for improvement to occur, to frontline staff and patients who resist improvements that require changes in behavior.

What are the implications for health care leaders and improvers? As the health care workforce adjusts to growing workloads, changing technologies, and complex processes for delivering care, improvements in quality and safety are increasingly viewed as both necessary and burdensome. From managing the tension between the pace of improvement and the urgency of political pressure and financial stress, to engrained organizational culture that stops improvement in its tracks, to connecting top-level leaders to those with lived experience at the point of care, to decreasing clinician burnout, to the co-production of health with patients and communities — the test of effective health system leadership is how many people are motivated to achieve and sustain better results at scale.[7]

Fortunately, improvement leaders can learn and apply principles and tools from many disciplines related to the psychology of change to do just that. Building on the legacies of Deming, Rogers, and many others, a renewed focus on the human side of change increases the likelihood that efforts to improve health and health care will succeed in the short term and be scaled and sustained over time.

What Is the Psychology of Change?

Psychology of change: the science and art of human behavior as it relates to transformation.

Psychology is defined as the science of the mind and human behavior, especially as a function of awareness, feeling, or motivation. The definition of **change** is to cause to be different, or to transform. Put together, the **psychology of change** is the science and art of human behavior as it relates to transformation.

First and foremost, the IHI Psychology of Change Framework is an approach to advancing and sustaining improvement together with the people directly and indirectly affected by it — those working in our health systems, patients and families, community members, policymakers, and others. The framework emphasizes the inherent value of each person, regardless of his or her identity or position in an organization. It also recognizes the importance of identifying the ways in which all persons affected by the improvement can meaningfully contribute to the solution. The framework acknowledges that people act according to their unique identities, while, at the same time, adhering to many predictable human behaviors.

Methodology

In 2017, IHI's innovation team began exploring the psychology of change, and a research team set out to understand the potential use of adaptive tools from many related disciplines for increasing the success and sustainability of improvement projects. The team reviewed the literature (including academic and professional journals as well as popular books and papers) and conducted interviews with experts in a wide variety of relevant subjects. This information was synthesized in a series of internal reports and eventually led to the development of the IHI Psychology of Change Framework.

IHI's framework results from a crosswalk of hundreds of tools and frameworks from many disciplines and applied methodologies. Given its broad scope, the IHI Psychology of Change Framework is not exhaustive. The framework attempts to provide a useful summary of some of the many disciplines to advance improvement science and outcomes, such as psychology and sociology, as well as applied methodologies, such as change management, organizing, design thinking, adaptive leadership, scaling up, team building, and others. Many scholars and practitioners have dedicated their careers to specific niches within these fields; readers are encouraged to explore them further to deepen practice and learning.

The framework is grounded in a social theory of learning and recognizes that transformation requires individual and interpersonal changes in thinking, feeling, and acting, along with system-level changes in structures, processes, and conditions. At its core, it invites people to engage their head, heart, and hands in its conceptual, motivational, and practical dimensions. It defines concepts; offers examples; provides summaries of tools applied across social, self-authoring, and self-transforming stages of adult development; and recommends experiential practice, reflection, and discovery. The framework will evolve as research continues and feedback is received. IHI invites improvement leaders to test and share learning in the continued development of the theory, tools, and measures.

IHI Psychology of Change Framework: Activating People's Agency

Activating people's agency is the central objective of the IHI Psychology of Change Framework. **Activate** means to make active or more active, or to convert from inactive to active. **Agency** is defined as the ability of an individual or group to choose to act with purpose. Agency has two key components: 1) **power**, or the ability to act with purpose; and 2) **courage**, or the emotional resources to choose to act in the face of difficulty or uncertainty. Together, courage and power are the primary drivers for activating people's agency, or the ability of an individual or group to choose to act with purpose.

Activating people's agency = Power (the ability to act with purpose) + Courage (the emotional resources to choose to act in the face of difficulty or uncertainty)

Imagine, for example, a hospital postoperative surgical unit that has a high rate of avoidable patient falls. A unit staff nurse has ideas about how to prevent falls, but he is responsible for many specific tasks and has little time to change the standard work on the unit. He views his power — his ability to act to prevent falls — as limited; he does not believe that he has the requisite skills to initiate an improvement project. Moreover, he fears punishment: he believes from previous experience that working outside of the unit's standard practices can result in disciplinary action. His willingness to choose to act to prevent falls is minimal; his courage is constrained by the organization's operational norms. To engage in meaningful improvement and advance a process for change, leaders need to identify ways to activate the staff nurse's agency — both his power and his courage — to result in the mindful choice to act.

Power: The Ability to Act with Purpose

Power is not a position or title that a person has within an organization; it's not a thing, quality, or trait. Power is relational; it is produced by a set of interdependent relationships that can be leveraged to achieve a specified aim. Power is generated as people bring to bear their skills, knowledge, experience, and capacity to act, individually and together, to achieve an aim.

Courage: The Emotional Resources to Choose to Act in the Face of Challenge

The root of the word courage is "cor," the Latin word for heart. Courage comes from people's emotional resources for mindful choice to act in the face of challenge.[8] Educator Parker Palmer explains that the source of courage is in knowing ourselves, creating circumstances in which others can become more self-aware and self-knowing, and being in relationship with what is happening around us.[9]

Educator Parker Palmer explains that the source of courage is in knowing ourselves, creating circumstances in which others can become more self-aware and self-knowing, and being in relationship with what is happening around us.
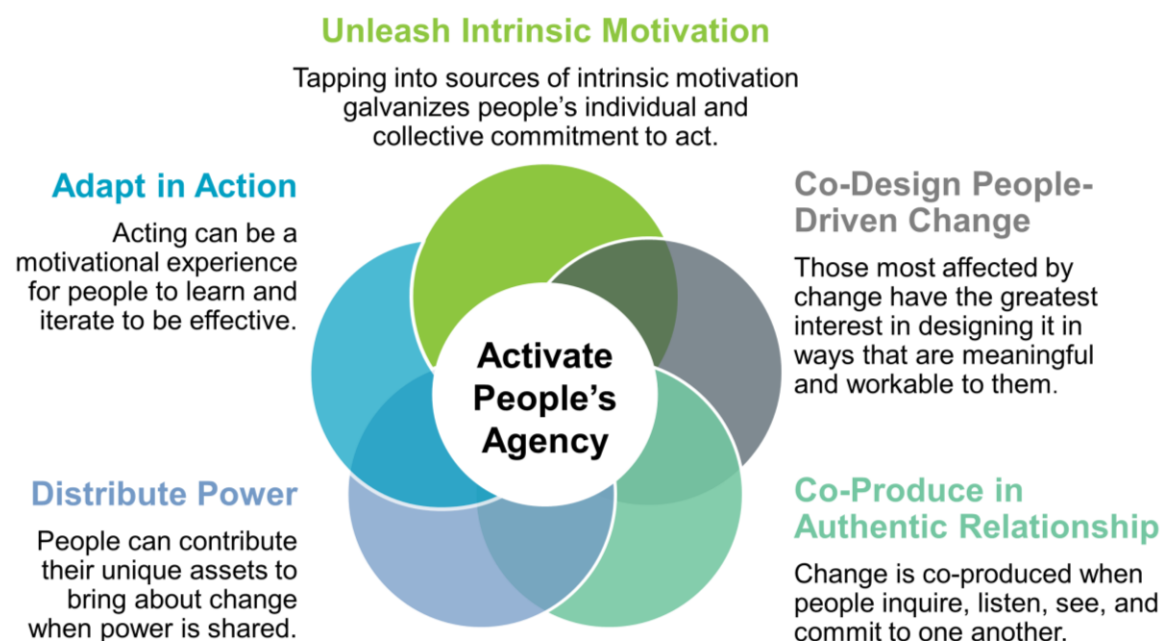
The IHI Psychology of Change Framework is centered on activating agency at three levels:

- **Self:** An individual's agency to make his or her own choices. People feel an increased sense of agency when they exercise their power and courage to take action.[10]

- **Interpersonal:** The collective agency of people acting together. People feel an increased sense of agency when they encounter positive experiences of other people exercising power and courage.[11]

- **System:** The structures, processes, and conditions that support the exercise of agency within and across institutions and organizations. People feel an increased sense of agency when the structures within which they operate enable them to exercise their power and courage.[12]

This is the objective in the IHI Psychology of Change Framework: to create the conditions that enable individuals and groups across systems to exercise power and courage (i.e., to choose to act with purpose) in order to advance and sustain improvements in health and health care. To establish these conditions, the framework is organized around five interrelated domains of practice (see Figure 1).

Figure 1. IHI Psychology of Change Framework

Unleash Intrinsic Motivation
Tapping into sources of intrinsic motivation galvanizes people's individual and collective commitment to act.

Adapt in Action
Acting can be a motivational experience for people to learn and iterate to be effective.

Co-Design People-Driven Change
Those most affected by change have the greatest interest in designing it in ways that are meaningful and workable to them.

Activate People's Agency

Distribute Power
People can contribute their unique assets to bring about change when power is shared.

Co-Produce in Authentic Relationship
Change is co-produced when people inquire, listen, see, and commit to one another.

1. **Unleash Intrinsic Motivation:** Tapping into sources of intrinsic motivation galvanizes people's individual and collective commitment to act.

2. **Co-Design People-Driven Change:** Those most affected by change have the greatest interest in designing it in ways that are meaningful and workable to them.

3. **Co-Produce in Authentic Relationship:** Change is co-produced when people inquire, listen, see, and commit to one another.

4. **Distribute Power:** People can contribute their unique assets to bring about change when power is shared.

5. **Adapt in Action:** Acting can be a motivational experience for people to learn and iterate to be effective.

These five domains are not meant to be sequential; rather, they are interrelated and can be engaged in many ways, in any order. The effective use of these practices to activate people's agency can and should be measured (see more in the Measurement section below).

The five domains are described in more detail below, including summaries of high-leverage tools to apply the concepts in an improvement context. In practice, each tool relates to all five domains.
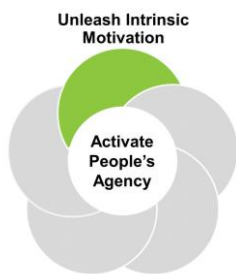
1. Unleash Intrinsic Motivation

What does it mean to unleash intrinsic motivation? Becky Margiotta and Joe McCannon, large-scale change leaders who co-founded the Billions Institute, define **unleashing** as "orchestrating the loss of control of people moving in the desired direction."[13] This involves an inherent tension of facilitating and guiding while losing control, as many people bring forward their energy and creativity to advance a shared cause.

Clinical and social psychologists Richard Ryan and Edward Deci define **intrinsic motivation** as "doing something for the inherent satisfaction that engaging in the activity provides."[14] (In contrast, extrinsic motivation means doing something because it leads to a separate outcome like reward, recognition, or avoidance of punishment.) Put together, **unleashing intrinsic motivation** means creating the conditions for many people to carry forward a shared cause on the basis of the inherent value that one experiences in the activity.

Deming likewise believed that improvers must move from systems driven by fear and extrinsic motivation to those driven by intrinsic motivation.[15] Influenced by Alfie Kohn, author of *Punished by Rewards*, Deming rejected management by carrot-and-stick rewards, as well as other common practices such as quotas and merit ratings, which seek to affix blame and reward to individuals. In their place, Deming focused on motivations that arise from an environment of trust, relationships, interdependence, and pride in work.

Deming understood what psychologists Deci and Ryan and social scientists Richard Hackman and Greg Oldham show: intrinsic motivation generates creativity, engagement, adaptive learning, and achievement. Hackman and Oldham demonstrate that tasks designed to draw on intrinsic sources of motivation produce greater commitment than those associated with extrinsic rewards. The conditions for motivational task design include an experience of meaningfulness (the task is important to the overarching purpose), responsibility (how well the task gets done is up to me), and results (as I do the work, I can see whether or not I am doing it well).[16] (All are premised on psychological safety, discussed later in the white paper.) These intrinsic motivators are generative and sustainable sources of commitment for advancing and sustaining improvement.

Unleash Intrinsic Motivation:

Tapping into sources of intrinsic motivation galvanizes people's individual and collective commitment to act.

To unleash intrinsic motivation, it is important for improvers to understand what matters to other people — individually, as related to the people they care about, and across society as a whole. When what matters to people is embraced and honored as part of the improvement work, it limits the fears associated with change because people are more likely to see and experience the fundamental value of change. In a 2012 article, Michael Barry and Susan Edgman-Levitan introduced the idea of asking patients, "What matters to you?" as well as, "What is the matter?" in the context of implementing shared decision making.[17] Their ambition was to increase clinicians' awareness of important issues in patients' lives that could drive customized plans of care. Maureen Bisognano, IHI President Emerita and a champion of the "What matters to you?" concept in health care, argues that eliciting a patient's goals, preferences, hopes, and dreams is essential to flip the focus from treating disease to co-producing health because it activates people's intrinsic motivations for being healthy.

The same lesson applies in improvement work. Leaders of improvement cannot assume that the reasons they believe a change will be an improvement apply to other people and their perspectives. Instead, improvement leaders can ask each member of an improvement effort what matters to them so that those affected by the change can articulate why the change is, or is not, valuable from their perspective.[18] The leader's task is not to judge the source of the motivation, but rather to enable people to access this motivation, over and over, to advance and sustain improvement.

How to Unleash Intrinsic Motivation

There are many methods to unleash intrinsic motivation. Here we present an overview of public narrative, motivational task design, and play and celebration, underutilized but high-leverage tools in improvement contexts.

- **Use Public Narrative**

Developed by Marshall Ganz, public narrative provides a practical approach to identifying and unleashing intrinsic motivation (see Figure 2).

Figure 2. Public Narrative

Source: Ganz M. *What Is Public Narrative: Self, Us & Now (Public Narrative Worksheet).*[21] Adapted with permission.

Public narrative includes three elements:[19]

- A story of **self**: Personal stories that can access the emotional resources embedded in our values that can enable mindful action;

- A story of **us**: Collective stories that can access the emotional resources embedded in the values shared by the group of people engaged in action; and

- A story of **now**: Stories that transform the present moment into a narrative moment in which we are confronted by an urgent challenge, access sources of hope, and respond mindfully (instead of reacting fearfully).

Taken together, these three narrative threads establish a foundation within which an individual, team, or organization can lead on the basis of individual motivating values (stories of self), collaborate on the basis of shared values (stories of us), and access sources of courage to respond mindfully to an urgent challenge, as opposed to reacting to it (stories of now). These stories communicate the intrinsic motivations that propel improvement efforts, such as dignity and respect, fairness and equality, justice and safety, and love and kindness.

For instance, anesthesiologist Dr. Michael Rose drew on public narrative to unleash intrinsic motivation for the widespread adoption of an evidence-based surgical safety checklist at McLeod Regional Medical Center in Florence, South Carolina. For 18 months prior, adoption rates had hovered at 30 percent despite efforts to raise awareness, train, market, convince, cajole, and even mandate the use of the checklist. To unleash intrinsic motivation, Dr. Rose convened surgical team members to share what called them to enter the health care profession and care for patients. Team members shared stories of self: loved ones who experienced harm in hospitals, or injustices in health care. They described personal trials as children of elderly parents, as spouses, as parents of young children. They shared universal moments of grief and loss, or of people who had helped them through profoundly uncertain moments — and how those people and moments transformed them as human beings and professionals.

Through these stories, surgical staff connected to each other and their intrinsic motivations around patient care. Some described that they were hearing about each other's motivations to do the work that they do for the first time, despite having worked together for more than 25 years. Dr. Rose and his team then built a story of us and now, as they shared how the improvement work brought them all closer to what drew them to medicine: to care for people, safely and justly. They contrasted the urgent challenge of patient harm with hopeful stories about patients with improved surgical outcomes as a result of using the checklist and the positive effects for patients' families, employers, the broader community, and hospital staff. The results followed: 100 percent sustained utilization of the checklist, 35 percent decrease in mortality, and a reduction of 80,000 hours of annual resource time due to improved performance.[20] In addition, surgical team members reported improved safety culture measures, increased job satisfaction, and decreased burnout.

Improvement leaders create the space to elicit these stories. It is in sharing them that we reveal who we are as leaders and remind people (ourselves included) why we care — which, in an improvement context, motivates others to make hopeful, intentional choices to adopt and sustain improvement efforts. For instance, many boards of trustees and other health system committees start meetings with stories from patients, families, or staff members. Stories enable agency by eliciting people's emotions, feelings of urgency, anger at injustice, hope, solidarity, and the sense that they can make a difference. Action motivators help people overcome inhibitors such as

feelings of inertia, apathy, fear, isolation, and self-doubt.[21] Emotions motivate people to act, serving as a source of courage, especially in moments of difficulty or uncertainty, which in turn enables people to exercise power (the ability to act with purpose).

- **Integrate Motivational Task Design into Improvement**

Developed by Richard Hackman and Greg Oldham, motivational task design focuses on designing the tasks involved in an improvement effort in ways that generate people's intrinsic motivations and sustain their commitment. This method enables improvers to design meaningful actions whereby people see their effort tied to a valuable outcome, with the responsibility and freedom to make decisions (instead of being told what to do), alongside opportunities for feedback and learning.[22]

Hackman and Oldham identify five design criteria to build into motivational tasks: 1) action identity: the action can be completed from start to finish; 2) action significance: the action makes a difference and contributes to a larger goal; 3) skill variety: the action requires many skills and is not repetitive and boring; 4) autonomy: the actors have the freedom to choose their approach; and 5) feedback: the results are accessible and can be used to identify improvements going forward. When improvement leaders design actions to maximize these criteria, people experience three psychological states: meaningfulness of the work, responsibility for the outcomes, and knowledge of the actual results. These psychological states in turn propel people's personal and work outcomes as high internal motivation, high-quality work performance, high satisfaction with the work, and low absenteeism and turnover.

- **Play and Celebrate**

Play invites people to be authentic, deepens their imagination and creativity, and helps them take risks and access courage.[23] It occurs in community as a relational activity that builds trust. Improvement leader Joe McCannon, after studying hundreds of large-scale change efforts, discovered that those where people play together are the most effective. Why? Because play gives people the emotional resources to respond and adapt to what they need to learn to be effective. Making play a part of the improvement work activates people's agency, and a lack of play depletes it.

Celebration is an opportunity to stop and reflect, interpret, and honor what has happened, give thanks to people for contributions, and learn from successes and failures. Celebration provides rituals that allow people to join in community. It involves storytelling about what the team set out to achieve, names wins and losses, lifts up individual and team contributions, interprets events, acknowledges common identity, and offers a hopeful vision for the future. Celebration demonstrates an improvement team's values in action, and it is meaningful and fun.

2. Co-Design People-Driven Change

Quality improvement efforts test new ideas to see if they lead to better results. Idea generation is a continuous process, and filtering the pool of ideas is necessary for teams to decide which ideas they will test. The IHI Psychology of Change Framework ensures that all stakeholders are part of the ideation process by co-designing people-driven change.

Co-design occurs when people are *designed with* instead of *designed for*. The idea is that empathy regarding a problem is not the same as experiencing a problem. Those most affected by change, particularly those most vulnerable or marginalized, have the greatest interest in designing

improvements that are most meaningful to and workable for them. Co-design espouses a simple operating principle: Everyone who touches or is touched by an improvement, at every level, has something to contribute. IHI refers to this as "all teach, all learn."

In this domain of the framework, the people most affected by the change co-design the improvement. Their direct involvement on the improvement team captures their expertise and knowledge, resulting in better change ideas, smoother implementation, and higher adoption rates. For example, Randel Smith, an older adult, is a member of the improvement team at Anne Arundel Medical System in Maryland that is co-designing improvements in care for older adults as part of the system's participation in the Age-Friendly Health Systems initiative.[24] Smith works alongside health system senior leaders, quality improvement leaders, and frontline staff to generate, test, and offer and gain feedback from his peers on improvements. Chief Operating Officer Maulik Joshi remarked, "Co-design happens at all stages — early and often — and never just once. It means starting with our patients and then tackling our problems, instead of the other way around."

> *Co-Design People-Driven Change:*
>
> *Those most affected by change have the greatest interest in designing it in ways that are meaningful and workable to them.*

To initiate co-design, improvement leaders can focus on one little word in the Model for Improvement — "we": What are *we* trying to accomplish? How will *we* know that change is an improvement? What change can *we* make that will result in improvement?[25] In co-design, "we" includes internal and external stakeholders, or those directly and indirectly affected by the improvement. Internal stakeholders are those with lived experience of the problem of focus, like patients and families; external stakeholders are those who possess a shared set of values and interests in solving the problem, such as health system senior leaders, providers, and frontline staff. Together, these stakeholders work collaboratively to solve an improvement problem — and keep it solved.

This is the key shift in being **people-driven**: to expand improvement leaders' focus on the problem or solution (the "what") and implementation strategy (the "how") to include the people (the "who") experiencing and implementing it. The traditional approach to improvement is to identify the process and ideas for how to improve it, and then implement those improvements. A people-driven approach begins with identifying who is involved, and that means everyone involved, and then inviting all stakeholder groups to determine the improvements to make together. This can be effectively accomplished by starting small in initial design efforts with members of all stakeholder groups.

For example, when Christian Farman needed to restart dialysis after a kidney transplant, he approached Britt-Mari Banck, a nurse in the Ryhov County Hospital hemodialysis clinic in Sweden. Farman researched self-dialysis and became convinced he could manage his own treatment to reduce the impact of side effects (such as nausea, edema, and extreme thirst) more effectively than nursing staff. In five weeks, Farman and Banck co-designed a new process through which he independently managed his dialysis, with fewer side effects. Banck then trained other renal patients in self-dialysis, which led to patients having dialysis more often because it was a less burdensome process, and over time infection rates decreased as a result. Today nearly 60 percent of the hospital's peritoneal dialysis and hemodialysis patients manage their own treatments, with an aim to increase it to 75 percent.[26] This model of patient-managed dialysis has since spread to other health systems, including one in Texas, where the hospitalization rate of dialysis patients has fallen by one-half, and the mortality rate has decreased by one-third.[27]

This brings us to the **change** component of this domain. Everett Rogers' diffusion of innovations theory identifies five properties of changes that are favorable to adoption: responsiveness to need, compatibility with the local context, simplicity, trialability, and observability. In other words,

because improvement impacts people, it must not simply work from an evidence-based standpoint; the change itself must also be workable for the people affected by and implementing that change.

Approaching improvement with a psychology of change mindset compels improvement teams to be completely transparent in describing what the change is, who designed it, how it works, and why it matters. The focus is activating people's agency to advance the improvement — not going behind closed doors to design improvements that subconsciously nudge people through biased pathways, whereby they find it easier and exercise less resistance to doing things to advance improvement. The psychology of change offers all stakeholders affected by the improvement an opportunity to contribute and a conscious choice to act.

At the same time, to help equalize the power dynamics in co-design, improvement leaders must be mindful of people's biases and their effect on how we respond to each other and to change. Improvement leaders need to involve less powerful stakeholders in creating and leading the change.

How to Co-Design People-Driven Change

While drawing from a wide range of design thinking and empathy-based practices is a good first step, here we summarize three methods that enable improvement leaders and teams to shift focus toward people.

- **Become Aware of Bias**

Everyone has biases. Biases affect how we design tests of change. And, based on positions of power, our biases can be amplified to design worse situations despite best intentions. To become more aware of one's own biases, take Harvard University's Implicit Bias Test online, or practice the "five whys" root cause analysis in self-reflection, asking, "Why did I react to this person or idea that way?" or "Why did I assume that?" Another practice is to slow down, because unconscious bias thrives when people move too fast. Use the "seven-second rule" to pause before asserting ideas and allow space for those with less positional authority to share.

- **Map Actors**

To determine who should be involved in co-design for a particular improvement project, teams can use the conceptual tool of mapping actors — that is, the key stakeholders in a proposed change. The objective is to see the whole system from the stakeholders' perspectives in order to build a strategy from their existing assets. It also helps improvement teams see how stakeholders connect to each other and view people as having equal status and as partners for improvement. The map itself is a living asset, changing over time as the improvement team becomes better informed about stakeholders' values, interests, and assets; identifies areas of alignment; and turns that alignment into co-designed improvement opportunities.

- **Craft People-Driven Aim Statements**

Also referred to as extended aim statements, this approach seeks to articulate who is working together to achieve the improvement aim (the people aspect), in addition to what is being improved, by how much, and by when. This practice reminds those involved in the improvement effort that people are the fundamental source of value for achieving aims, and it signals the use of the psychology of change lens for improvement.

People-driven aim statements emphasize the "we" in the Model for Improvement by naming who the people are:

> We (**who** — improvement team members) are co-designing (**with whom** — internal and external stakeholders) to do (**what** — the aim) by (**how much** — measure) by (**when** — timeframe) by (**how** — changes to test) in order to (**why** — motivation).

For example:

- Initial aim statement: We will decrease the length of stay (LOS) for intensive care unit (ICU) patients by 50 percent within 9 months.

- People-driven aim statement: We, Mary Marchetti, George Yin, and Juan Carlos Santiago, are co-designing with ICU patients and families, palliative care team members, and ICU staff to decrease LOS for ICU patients by 50 percent within 9 months by convening proactive meetings with ICU patients' families and/or palliative care consultations in order to improve the quality of patient care and reduce costs.

This approach also reminds teams to co-design metrics that really matter to them. For example, a co-design effort in the Veterans Health Administration shifted outcome measures to include waiting time and mental health services. The 100 Million Healthier Lives initiative co-designed with users its "Metrics That Matter" platform, which enables people to measure how their improvement work contributes to health, wellbeing, equity, and sustainability.

3. Co-Produce in Authentic Relationship

Co-production is the second part of a complete co-creation process when combined with co-design. The New Economics Foundation describes the concept of **co-production** as an approach that:[28]

- Treats people as assets, not burdens;

- Provides an opportunity for growth and development;

- Builds emotional intelligence and capacity of stakeholders to work together;

- Minimizes the distinction between producers of services and consumers of services; and

- Gives real responsibility, leadership, and authority to everyone involved.

The point of co-production, the Foundation explains, "is not to consult more, or to involve people more in decisions; it is to encourage them to use the human skills and experience they have to help deliver the solution." In co-production, those providing *and* using health care services share power and responsibility to solve problems and achieve outcomes.

Maren Batalden, Paul Batalden, and their co-authors expand on the notion of co-production in health care services. They identify the delivery of health care services as distinct from the delivery of products. For example, in the National Health Service of England, patients living with chronic conditions learned alongside providers the skills necessary for communication, care visit agendas, goal setting and progress monitoring, and problem solving. At Cambridge Health Alliance in Massachusetts, groups of patients convene to develop care plans and build community during shared medical appointments. Each of these interventions focuses on the relationships between providers and patients, who are working together toward improved health goals.[29]

Co-Produce in Authentic Relationship:

Change is co-produced when people inquire, listen, see, and commit to one another.

The IHI Psychology of Change Framework emphasizes **authentic relationships** as the foundation for co-production. Authentic relationships are fostered as people inquire, listen, see, and commit to each other in mutually supportive ways; such relationships require presence, mindfulness, genuine curiosity, humility, the courage to show vulnerability, and the ability to listen. Thus, **co-produce in authentic relationship** means recognizing and supporting differences between people and their perspectives, and creating a relationship where each member's real self and thoughts can come forward, resulting in mutual commitments to act. These interactions are transformational, not reactive or transactional.

The difference between transactional and transformational is akin to the difference between inauthentic and authentic. In a **transactional** context, improvement leaders seek contributions from patients and frontline staff but only on a nominal level. When that input has no genuine bearing on decisions, it is tokenism. Tokenism occurs when a person or group of people who belong to a traditionally dominant group (e.g., senior leaders, white people, men, physicians) involve a member of a less dominant group (e.g., entry-level staff, people of color, women, patients) for the purpose of having that individual represent their group. It also occurs when a leader invites input but does not incorporate that input into decision making; his or her course of action or decision will be determined regardless of input. Tokenism sends the clear message that an improvement leader, team, or organization does not see the individual or her ability (or the group and its ability) to contribute; rather, they see a representative that satisfies a desire to gain nominal contributions from other stakeholders.

In contrast, in a **transformational** context, when co-producing in authentic relationship, improvement leaders and organizations remain open to the possibility of being transformed by one another. For example, in 2012 health care providers and community members in Columbia, South Carolina, partnered to achieve the Triple Aim in a geographic region with one of the nation's highest rates of diabetes-related amputations. Despite entrenched historical, racial, and political factors, improvement leaders and community members built authentic relationships; in the first year, more than 350 people donated over 3,000 hours to improve community health, including conducting over 1,000 health screenings. A senior hospital leader engaged in the effort explained, "Instead of saying to community members, 'Here is what we [providers] think you should do,' we said, 'We want to learn from you: what are you going to do, and how can we partner with you?'"[30] The conversation likewise shifted for community members, from asking providers, "What can you do for us?" to instead saying, "Here is how you can help." Providers and community members changed how they saw their relationship to one another.

As Hahrie Han, professor of Environmental Politics at University of California, Santa Barbara, states, "We do not become transformed alone; we become transformed when we're in relationship with others."[31] Co-production redefines relationships — it is not just a means to designing better processes and achieving results; it has a psychological impact in and of itself. This outcome is consistent with research that shows that developing agency and empowering individuals can positively impact health.[32]

Some critics question co-production because of its slow pace. It is slow — initially. But once people establish authentic relationships, it saves both time and resources. Recall Dr. Rose, who wasted resources and time with approaches that did not result in the wide-scale adoption of the surgical safety checklist at McLeod — until he and his team began to co-produce in authentic relationship. Their strategy: each team member met one-to-one with four to seven colleagues of their choosing, eliciting intrinsic motivations and listening to concerns, before inviting them to test and improve the use of the checklist — and to join the improvement team.

Over several years, wave after wave of staff at McLeod were trained to practice co-production methods with four to seven staff members in a cascading network strategy. To date, more than 700 people have participated in one-to-one meetings across the medical center, leading to 100 percent sustained adoption of an improvement that saves lives, improves safety, reduces costs, increases staff satisfaction, and transforms culture. This is time well spent. Why? Because an authentic relationship itself is a source of value and motivation to act. As Dr. Rose notes, the relationships developed during the checklist effort now serve as the foundation for many additional improvement efforts to reduce waste, improve flow, and address safety concerns.[33] Authentic relationships are resources that grow with use.

How to Co-Produce in Authentic Relationship

While there are many tools in this domain, the selected methods described here, particularly when used in combination with one another, can enable improvement leaders and teams to co-produce in authentic relationship. Underpinning the tools in this domain is Edgar Schein's concept of humble inquiry: the "fine art of drawing someone out, of asking questions to which you do not know the answer, of building a relationship based on curiosity and interest in the other person."

- **Practice the Five Steps of a One-to-One Meeting**

The five-step practice of one-to-one meetings (see Figure 3) comes from Marshall Ganz and the field of community organizing.[34]

Figure 3. One-to-One Meetings
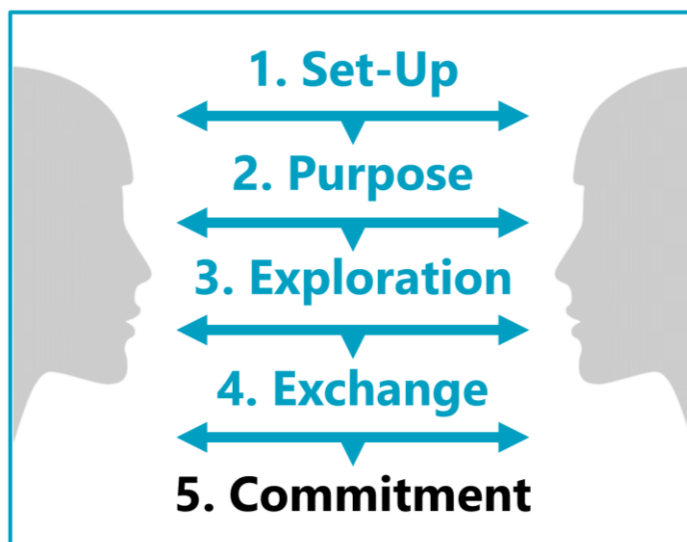
Source: Ganz M. *Organizing: People, Power, Change*.[34] Adapted with permission.

1. **Set-Up:** The organizer of the meeting gets another person's attention to dedicate intentional time together.

2. **Purpose:** At the start of the meeting, the organizer transparently describes the purpose of the meeting, articulates energy and appreciation, and confirms the end time in order to bound and pace the conversation.

3. **Exploration:** This is the heart of the conversation, in which the organizer asks open and honest questions and listens deeply (see below). In an improvement context, the focus is on learning what matters to and motivates people to unleash intrinsic motivation. The organizer of the meeting listens 80 percent of the time, taking mental notes about the other person's values, interests, and assets, while sharing about herself in the remaining 20 percent. This step establishes a basis for an authentic relationship (especially when combined with other practices below).

4. **Exchange:** Explicitly name the information, support, challenges, and insights the two people are exchanging during the conversation and explore a possible shared purpose. Invite the other person's view of what is possible; co-production is at play here.

5. **Commitment:** A successful one-to-one meeting ends with a clear commitment (i.e., who will do what, by when) to engage in a strategic and mutual exchange of assets.

Two common missteps are to ask for commitment without establishing a basis of shared values, or to skip the development of a shared purpose. This makes it a transactional exchange in which the organizer is extracting buy-in or agreement to do something for him or her. In contrast, when both parties explore each other's motivations and interests, and commit their assets toward a shared purpose that they agree upon with one another, they co-produce in authentic relationship. Individual interests are recast as common interests, to which both parties commit their combined assets. To the extent that these exchanges are grounded in shared values, they transcend transactions to become a foundation for transformational growth, learning, and development.

- **Cultivate the Habits of the Heart**

"Habits of the Heart" is a phrase coined by Alexis de Tocqueville and expanded on by Parker Palmer as "deeply imagined ways of seeing, being and responding... that involve our minds, our emotions, our self-images, and our concepts of meaning and purpose." The Habits of the Heart are five "ways of being" that ground people in mindfulness and authenticity. They include an understanding that we are all in this together, an appreciation of the value of "otherness," an ability to hold tension in life-giving ways, a sense of personal agency and voice, and a capacity to create community.[35] Improvement leaders use the Habits of the Heart as guideposts for self-awareness. Improvement teams reflect on the ways in which the Habits of the Heart resonate in their work together (e.g., unless we embrace a shared understanding that we are all in this together, we risk blaming or shaming ourselves or others; we must find ways to hold tension in creative ways in order to test new ideas).

- **Ask Open and Honest Questions**

Parker Palmer also developed the practice of asking open and honest questions that elicit the most complete answer by enabling multiple people to contribute, without a predetermined answer in mind.[36] Open questions leave space for others to share their ideas (e.g., What happened? How did that make you feel? What did you learn?). When asking open and honest questions, leaders listen deeply and seek to understand the answers.

- **Practice Appreciative Inquiry**

Appreciative inquiry invites people to reflect on and start from past successes and positive experiences.[37] When leaders ask about what is already working, even when change is needed, they demonstrate curiosity and show that they value the experience of those engaged in the work, some of whom may be resistant to change. For instance, "Tell me about a time that you felt pride in the team's improvement work." Appreciative inquiry can be motivating for leaders and teams, helping them create a new narrative that everyone shares, even if change is part of it.

- **Listen Deeply**

In the practice of deep listening, people still themselves to receive and take in another person. Technology is off, thoughts are parked, attention is given, and curiosity is piqued. People listen for understanding, for the emotions behinds the words, and for commitment (or lack thereof) to what is being expressed.

4. Distribute Power

All people exercise power in varying degrees and have prejudices and biases, both implicit and explicit. It is critical to see and act on the ways that prejudice and power combine to generate inequity at individual, interpersonal, and system levels.[38] In health care, this includes removing disparities in access, utilization, and outcomes across race, gender, age, sexual orientation or gender identity, socioeconomic status, religion, and other characteristics historically linked to discrimination or exclusion.[39]

From this perspective, leaders need to look at improvement projects and ask, to what extent are power disparities underlying causes of the problem? The unequal and inequitable distribution of power is the result of choices of individuals and groups in positions of power at the expense of those not in power. The outcomes generate systems of oppression, or the cultural values and habits that support the advancement of one group (e.g., white people, men, senior leaders, physicians) through the oppression of another group (e.g., people of color, women, frontline staff, patients). People who identify with an in-power group experience the benefits of a system designed for their advancement, while those in the out-power group do not.

To activate people's agency, this reality must be accounted for not only in co-design and co-production, but also in the distribution of power. Power is not a position or title that a person has within an organization; it's not a thing, quality, or trait. Power is relational; it is produced by a set of interdependent relationships that can be changed to achieve a specified aim. Power is generated as people bring to bear their skills, knowledge, experience, and capacity to act, individually and together, to achieve an aim.

The following four questions illustrate the interdependent and relational nature of power,[40] and each question is illustrated in a now-familiar example.

- **What change do we want? (What is our interest?)**
  Example: In the surgical safety checklist improvement project, what change does Dr. Rose want? He wants to reduce harm to patients by having surgical teams use the safety checklist 100 percent of the time.

- **Who has the assets to create that change?**
  Example: Surgeons, anesthesiologists, surgical nurses, surgical technicians.

- **What do they want? (What is their interest?)**
  Example: Surgeons may want to be in charge or may feel powerless to imagine responsibility for the patient any other way. Nurses and technicians may want to feel able to speak up on behalf of the patient. They all want the best possible patient outcomes.

- **What assets does our improvement work offer that they want or need?**
  Example: Dr. Rose and his improvement team have an asset that can help all parties connect to their common purpose: the asset of creating forums to unleash intrinsic motivation, co-design people-driven change, and co-produce in authentic relationship the best possible patient outcomes.

By exploring people's interests and inviting them to articulate what they have to gain and lose, improvers can determine strategies to address the power dynamics and sources of resistance that serve as barriers to improvement. In this example, as in most improvement contexts, Dr. Rose and his team built what Ganz describes as "power with," which means that they focused on a common interest (i.e., the best possible patient outcomes) to distribute power across professional groups by combining their assets in new ways.

Distribute Power:

People can contribute their unique assets to bring about change when power is shared.

But not everyone's interests are met all the time; some people experience (and resist) real loss with change. For instance, some surgeons at Dr. Rose's organization initially resisted a perceived loss of control due to the adoption of the checklist, asserting "power over" surgical teams to maintain the status quo. However, this dynamic shifted as surgical teams shared power by activating more and more staff to use the checklist, creating new pressure on and influence over the initially resistant surgeons. As Everett Rogers suggests, this reflects how improvement efforts that build "power with" others can over time assert "power over" resisters — fundamentally changing the power relationship to advance wide-scale adoption.

Distributing power is one way to build power (i.e., the ability to achieve a shared purpose) and facilitate team-based care. By definition, **distribute power** means that many people within a system, across boundaries and levels, work together to create the conditions to accomplish a shared purpose, with each person playing a necessary, interdependent role in the work. As Frederic Laloux notes in *Reinventing Organizations*, people can hold different levels of positional power, and yet bring to bear their ability to contribute to the common aim. For example, a senior leader brings the asset of decision-making authority to commit resources to an improvement effort, while frontline staff bring knowledge of the improvements tested. Despite differences in positional authority, both are necessary for success.

In their book, *New Power*, Jeremy Hiemans and Henry Timms offer a complementary commentary on power, in which they contrast old and new views of power:[41]

- **Old power** works like a currency. It is held by few. Once gained, it is jealously guarded, and the powerful have a substantial store of it to spend. It is closed, inaccessible, and top down. It downloads and captures. Power is a position, or something one wields.

- **New power** operates like a current. It is made by many through relationships. It is open, participatory, and peer driven. It uploads and distributes. Like water or electricity, new power is most forceful when it surges through co-production, endowing people with a sense of agency. The goal is not to hoard power, but to unleash and channel it in a desired direction. A common assumption is that we all have an inalienable right to participate and share in the power.

Similar to Hiemans and Timms' view of "new power," distributing power allows improvement tests to happen in multiple places simultaneously, with feedback loops to inform the overall improvement effort. Distributing power also helps organizations scale up improvements. An audacious goal can be broken into smaller improvement projects across teams whose leaders develop teams of leaders, and so on, offering entry points for people throughout an organization to engage in improvement at all levels toward the achievement of the overall goal. This form of collaborative leadership, cascading outward, can, when based on shared purpose, clear norms, and well-defined roles, encourage stability, motivation, adaptation, and most of all, the exercise of agency of all involved.[42]

For example, the National Health Service of England activated the agency of others to distribute leadership in a nationwide campaign called The Right Prescription, with the aim that "all 180,000 people with dementia who are prescribed antipsychotic drugs will undergo clinical review to ensure that they are receiving these drugs appropriately, that alternatives to their prescription have been considered, and a shared decision has been made by March 2013." The Right Prescription invited all stakeholder groups to co-design actions, including people with dementia and their families, leaders of care homes, general practitioners and primary care teams, psychiatrists and mental health teams, pharmacists, hospital doctors, commissioners of health and social care services, and medical and nursing directors of acute and foundation trusts. Each group then made its own commitment to the effort. For example, pharmacists pledged, "I commit to reviewing the people under my care to identify those who are prescribed antipsychotic medication and working in partnership with my prescribing and other health care colleagues to review each individual." With a focus on distributing power, 120 hospital systems, 5,000 general practitioners, 25,000 nurses, and 40,000 pharmacists together generated a 51 percent reduction in antipsychotic prescriptions for people living with dementia in under three years.[43]

However, it is important to note, as in the case of The Right Prescription, that distributing power requires investment in relationship building, development, and coaching, cascaded throughout an improvement effort, as frontline leaders learn to structure the work themselves. In addition, distributing power is only one way to structure power. Sometimes other structures are needed to advance an improvement goal, such as consolidating power in the hands of a few in order to shift a dynamic that is serving as a barrier. For example, when a senior leader does not allocate resources to an improvement effort, the most effective way to structure power may not be to distribute it, but to triangulate and target other sources of influence with that leader, on the basis of his or her interests. The critical step is developing strategies to alter the relational nature of power.

How to Distribute Power

While there are many tools in this domain, four methods create fundamental conditions to distribute power.

- **Create a Shared Purpose**

A shared purpose addresses the challenge that arises when members of improvement efforts are accustomed to exercising different kinds of power and resources. A shared purpose suggests that all partners are equal by defining the collective work of the group, not of an individual. Although related to chartering an improvement initiative by framing a case for change and developing an aim, shared purpose establishes a scope of activity around which team members can cohere.[44] Pre-existing negative patterns in intergroup relationships can also be overcome by creating mutually valued superordinate purposes.[45]

Identifying a shared purpose also addresses another challenge in an improvement context: improvement leaders often have tenuous authority to influence others because many improvement projects are interprofessional and cut across accountability structures. Informal networks and personal relationships are often more important in advancing improvement efforts.[46] A shared purpose created collectively also helps team members sustain a public commitment to the work.

- **Develop a Distributed Leadership Structure with Clear Roles and Interdependent Work**

Rather than use top-down leadership, develop an improvement team structure that operates on the principle that no one person or subset of people holds all the power and accountability. Work together to develop a distributed leadership structure, in which responsibility is shared among all team members (see Figure 4). For example, triads in which a physician, nurse, and administrator share the leadership of a group and develop strong committee structures that address specific challenges, each led by individuals from affected constituencies, will distribute power while winning the hearts and minds of those needed for improvement to occur.

Figure 4. Distributed Leadership Structure
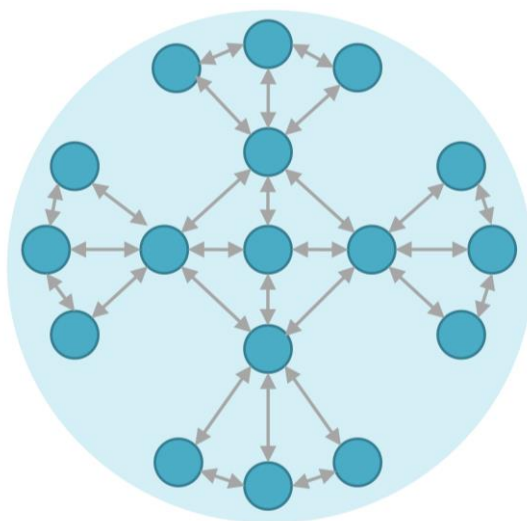
Teams might adapt this visual to help people see themselves as distributing power in relationship to one another. In interdependent work, the success or failure of one affects all. Everyone has a share of the work based on the unique skills and assets he or she brings to it, understanding that each part is necessary to achieve the shared purpose. Clarifying roles across the distributed leadership structure is critical to managing interdependency and coordinating work. Even in hierarchical settings, leaders can use this structure to create an agile "dual operating system" to distribute power and activate people's agency.[47]

- **Establish Explicit Working Agreements**

All improvement team members make choices that set the tone and create the conditions for others to exercise their courage and power, or not. People implicitly and explicitly send cues about what types of behaviors are acceptable and unacceptable. Improvement leaders have a responsibility to model courage and create safety for others to exercise power and choose improvement over the status quo.

To do this, take time to establish working agreements, or norms, for the improvement team to decide how to behave together to achieve its shared purpose. Working agreements also need to be mindful of the power dynamics that the team creates together. To distribute power, establish norms like ceding decision-making power to the team and determining an appropriate decision-making process. As a communication norm, invite team members who tend to hold back to step up, and ask those who tend to speak first or dominate the conversation to practice stepping back. Invite the team to co-create agendas, co-facilitate meetings, crowdsource ideas, alter the seating or space in which it meets, and rotate team meeting roles. Incorporate reverse mentoring, whereby those with the least positional authority mentor and review those with the most.

Parker Palmer likewise encourages the adoption of the "Touchstones for Creating Safe Spaces," such as to choose for oneself when and how to participate, make space for silence and reflection, embrace difference, turn to wonder (instead of judgment), ask open and honest questions, and observe confidentiality.[48] Norms like these create psychological safety, or a "climate in which people are comfortable being (and expressing) themselves," which is critical for improvement and learning.[49]

For working agreements to be effective in distributing power to guide behaviors, improvement teams can co-create a positive accountability mechanism about what happens in the group if someone does not live up to the norms.[50] Although it may sound counterintuitive, this practice energizes an improvement effort because when people positively surface accountability in order to function more effectively, they are more committed to participating in the work in a psychologically supportive way.

- **Celebrate When People Cede Power**

For many people, especially those in traditional positions of authority, changing behavior to cede power can be difficult; it goes against how they were trained and have worked historically. When people with positional authority say, "Tell me more" instead of, "I'd like a word with you after the meeting," appreciate them. When people with positional authority show vulnerability, or ask for a reverse performance review, thank them. When the team makes a decision together, note it as a successful group accomplishment. When one team member asks a less outspoken member to share his or her ideas, pause to thank both of them. Appreciating people for distributing power motivates more of the same.

5. Adapt in Action
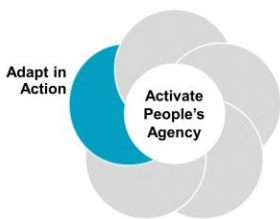
Many health improvers experience quality improvement methods as motivational. **Action** demonstrates people's courage and is an exercise of their power. This can generate a reinforcing mechanism of activating people's agency in a virtuous cycle — action begets action. IHI encourages improvers to action by asking, "What can we do by next Tuesday?" The Plan-Do-Study-Act (PDSA) cycle is an opportunity for testing, learning, and adaptive development — it's okay to make mistakes, and it's essential to analyze and learn from them. Data provide clues that reveal bright spots to harvest and share, or trends and patterns to address. Comparing performance across teams, units, and organizations can be intrinsically motivational for pride in work. Variation gives people energy to change behaviors. Tracking rates of improvement over time can be transformed into the urgency to act.

When quality improvers turn to scaling and sustaining impact, the name of the game is to **adapt**. There is no data to suggest that a "perfect innovation" spreads on its own. Likewise, improvers must avoid the "replica trap" of adoption — that is, the belief that they can accomplish the same

result widely by simply doing the exact same thing.[51] People's agency to adopt and adapt must be activated. Therefore, it is critical to understand what aspects of an improvement are essential and non-negotiable and must be held to tightly. It is equally important to hold everything else loosely so as to activate the agency of other improvement leaders, teams, units, and organizations to adapt the change.

Adapt in Action:

Acting can be a motivational experience for people to learn and iterate to be effective.

As improvers work together to adapt changes in new contexts, it leads to intrinsically motivational experiences of autonomy, growth, and community. Learning occurs as improvers make small and big (internal and external) adjustments through PDSA cycles in pursuit of an improvement effort's aim, their team's capacity, and their own growth. As people make choices about how to test and improve in action, they experience feelings of autonomy and growing mastery. And as they act with others, they experience a feeling that they are not alone.[52] In other words, adapting in action can generate increased commitment to quality improvement.

IHI's 100,000 Lives Campaign exemplifies this lesson. In the Campaign, thousands of improvement leaders in more than 4,000 hospitals across the United States implemented six core improvements to reduce harm and deaths in a period of 18 months, resulting in over 100,000 lives saved.[53] The IHI team could have taken the approach of telling improvement leaders how to demonstrate fidelity; instead, they distributed power to those implementing the improvements, providing coaching and support to regional field offices across the country, which in turn provided coaching and support to participating hospitals in their regions. Why? Because that is where the action was: the learning and breakthroughs happened at the point of care. At its peak, the Campaign's Mentor Hospital Network consisted of more than 200 participating hospitals from nearly all 50 states, from large urban academic medical centers, to mid-sized community hospitals, to small rural hospitals. The Mentor Hospitals presented on quarterly "office hour" calls for Campaign participants, sharing failures (and successes) with transparency. While participants appreciated the faculty experts on the call, the majority of questions were directed to Mentor Hospitals since they were peers at the point of care facing similar challenges. Their influence was immense; they showed people, credibly, how to adapt in action.[54]

Improvement leaders can put conditions in place for adapting in action to be motivational to those involved in the action. How? First, improvers can identify adaptive formulations of the problem and solution — a basic acknowledgment that people need to adapt changes in some way.[55] Next, improvers can incorporate motivational action design principles (see the Unleash Intrinsic Motivation section), emphasizing that all successes *and* failures are important, and that there is something for all team members to learn.[56] Most importantly, leaders can minimize the burden of judgment and the pressure to get a result by shifting the focus to learning the way toward the goal. The learning *is* the result, enabling teams to adapt to achieve the aim.[57] People can rarely learn all that they need to learn to succeed until they begin to do it — understanding proceeding from action, rather than preceding it.[58]

For instance, returning to the Dr. Rose example, as surgical teams adopted the surgical safety checklist, they reported and shared case debriefs across the department. In so doing, they shared stories of failure and success, and they improved their strategies to address each failure going forward. They adapted the checklist through small-scale PDSA tests — and then reduced variation by re-standardizing its improvements. They saw how their use of the checklist and debrief method led to the achievement of their shared purpose of patient safety and the best possible outcomes. Along the way, they learned to trust each other, building collaborative capacity as they shared stories of failure without blame, and celebrated stories of success with joy. And because they distributed leadership across professions and shared ownership of the work, they discovered

motivation to take on new improvement efforts, escalating people's commitment along "a ladder of engagement."[59]

When people see their efforts, regardless of how successful they are, as contributing to the advancement of the aim, they are more likely to want to fully participate. They share ownership, which in turn generates motivation and a sense of commitment that facilitates accountability toward improvement.[60]

Accountability must also occur at the level of people's willingness to learn from the impact of their thinking, feeling, and behaviors to change and adapt. Harvard Business School professor and theorist Chris Argyris suggests that learning is not problem solving that solely happens by correcting external errors in the environment. "There is a universal human tendency to design one's actions to remain in control, to maximize 'winning,' to suppress negative feelings, and to be as 'rational' as possible — by which people define clear objectives and evaluate their behavior in terms of whether or not they have achieved them."[61] He continues, "If learning is to persist, people must look inward. They need to reflect critically on their own behavior, identify the ways they often inadvertently contribute to the organization's problems, and change how they act."[62] Argyris notes that without self-awareness and reflection, people who are enthusiastic about continuous improvement can be the biggest obstacle to its success.

Argyris states, "The moment the quest for continuous improvement turn[s] to the improvers' own performance, something [goes] wrong... The professionals... [are] threatened by the prospect of critically examining their own role... Far from being a catalyst of change, these feelings cause most to react defensively... Defensive learning can block learning even when the commitment to it is high."[63] This is why it is critical for improvement leaders to not simply solve implementation problems as they adapt in action, but to develop a far deeper and more textured understanding and awareness of their own thinking, feeling, and behavior — their own psychology — to change and adapt, individually and together.

How to Adapt in Action

Tools to adapt in action draw on methods for continuous adaptive learning and can be used to support improvement leaders and teams in adapting the methods from across the IHI Psychology of Change Framework's other four domains.

- **Coach and Be Coached**

Coaching is the act (and art) of activating people's agency to achieve purpose in the face of uncertainty. It is a direct intervention in an individual's or team's work process to help them improve their effectiveness or overcome challenges. It involves a five-step process: 1) observing and gathering data; 2) diagnosing motivational, conceptual, and practical challenges; 3) intervening with open and honest questions that enable people to solve their own problems; 4) setting out action steps; and 5) following up with support. Improvement leaders can establish norms and build people's skills to give and receive coaching to advance improvement.

- **Adopt a Growth Mindset**

This is a popular concept in psychology and change management. Psychologist Carol Dweck describes "the growth mindset" of some learners, wherein some people's behaviors indicate a belief that intelligence or capabilities are fixed, while other people's behaviors indicate a belief that intelligence or capabilities can develop over time. Dweck shows that outcomes are improved when effort and process are praised and rewarded — in contrast to praising achievement.[64] Focusing on

effort and process requires a paradigm shift away from an achievement mindset toward a growth mindset.

- **Fail Forward**

In this approach, failures are embraced as a necessary step for improvement, and learning from failure is an explicit and intentional goal. Each attempt provides more data to improve a process or approach. Teams can plan to fail forward by using a simplified "failure mode" exercise that cultivates mindsets of resilience, positive adaptation in a stressful or adverse situation, and grit, perseverance, and passion for long-term goals.[65] The exercise helps people overcome outsized fears by identifying the failure, how likely it is to occur, how severe it would be if it did occur, and the mitigation strategies that could be put into place. Explicitly addressing fear of failure enables improvement team members to see their fears clearly and refocus on experimenting, making mistakes, and helping each other learn together.

- **Embrace Emergence**

The Model for Improvement asks, "How will we know that a change is an improvement?" Every improvement project needs a system to track progress and evaluate specific efforts. Emergent learning provides a discipline for understanding the learning that emerges from the work itself. The tools and practices support surfacing, capturing, and employing those insights and learning to inform future improvements, helping train our thinking process so we make decisions and take action based on deeper and more robust hypotheses about what it will take to achieve the future to which we aspire.[66]

The most foundational of these practices is Before- and After-Action Reviews, developed and utilized by the United States Army.[67] In a Before-Action Review, a team declares its intended outcome and how it will recognize success, identifies the challenges it predicts and draws insights from past experience, and develops a plan for achieving the outcome in the face of anticipated challenges. Teams use this tool during the "Plan" phase of any PDSA. Then during the "Study" phase the team can conduct an After-Action Review, comparing what it intended with what actually happened, reflecting on what caused the results, and identifying which elements to sustain and which to improve for the next PDSA.

Measurement

How can teams and organizations know that the IHI Psychology of Change Framework is having the desired impact on improvement efforts? A measurement system for psychology of change should focus on the effect of the framework on achieving the goals of the specific improvement activity. Given the variety of improvement initiatives, there is no single measure of effect of the IHI Psychology of Change Framework. Instead, each improvement initiative or project will have its own process and outcome measures. Compared to sites that have no experience with the framework, sites that do have this experience should achieve greater, faster, or more sustained improvements in the initiatives' desired outcomes and processes.

For example, an improvement initiative on adverse drug events may include the main measures of outcome (e.g., adverse drug events) and the rate of spread of the specific processes (e.g., the number of care units using unit briefings to identify medication safety issues). In addition, quality improvers may assess the effectiveness of the IHI Psychology of Change Framework through a series of potential activity measures (e.g., the number of trainings held, number of individuals who participate in improvement work, and number of core leaders who are engaged). An increase in

agency across an improvement team could also be measured, for instance, as team members report daily or weekly the percentage of team members that respond "agree" or "strongly disagree" to the statement, "I feel able to contribute my knowledge and skills to advance our team's shared purpose." By tracking this percentage over time, leaders can gain a sense of whether or not team members' agency has improved. Ultimately, beyond improvement-related aims and measures, improvement leaders should see system-level outcomes consistent with the behaviors that people are embracing: higher adoption of improvement methodologies across the system, improved psychological safety, and lower staff burnout and turnover.

In addition to these system-level measures of the effectiveness of the IHI Psychology of Change Framework, organizations can use individual-level measures of the framework's effectiveness. Process and balancing measures, as applicable, may indicate such things as whether those involved in improvement work experience increased wellbeing and satisfaction; higher discretionary effort and voluntary participation (or lower attrition over time); and increased retention and willingness to participate in future improvement work. Likert-scale-based assessments of those involved in improvement work may allow self-reported assessments of people's intrinsic motivation to participate (e.g., How motivated are you to participate in this project?); feelings of involvement in design and implementation (e.g., How involved were you in the design of this initiative?); sense of belonging and improved quality of relationships (e.g., How much do you feel that you are a part of something?); perceptions of how valued people on the team feel (e.g., How valued do you feel?); and resiliency to adapt and willingness to learn (e.g., How ready are you to adapt if needed?).

Quality improvers can apply the practices of all five domains of the IHI Psychology of Change Framework in the process of determining measures and collecting and analyzing data.

Quality improvement teams should determine operational definitions for these concepts and associated measures based on the practices employed to advance the psychology of change, as well as other contextual factors. Quantitative assessments may use a Likert-type scale of measurement, and qualitative methods may include story harvesting, observational data, and feedback. Specific improvement logic models may further subdivide these measures by short-, medium-, and long-term outcomes.

In addition, stratification and rational subgrouping (by unit, department, discipline, and other demographic factors such as race and ethnicity) are helpful. By drilling down into different units or groups of staff or patients, organizations can identify the people who can activate others, as well as those to target first for engagement in improvement efforts. More frequent and tailored data collection, and transparent sharing of results with each work unit and its leaders, allows for more real-time improvement and a better way to track the impact of changes over time. Data stratification and rational subgrouping should be determined by the improvement team and subject-matter experts, and teams should collect only data they will use.

Quality improvers can apply the practices of all five domains of the IHI Psychology of Change Framework in the process of determining measures and collecting and analyzing data. For example, make measurement people-driven by co-designing measures with the people affected by the changes and co-produce metrics that matter to them. Identify and share biases among team members before establishing measures and analyzing data. To distribute power, make data transparent. Only collect and track data that will be used for learning. Encourage people to measure by connecting measurement to their intrinsic motivations to learn and improve individually and together. Make measurement fun by incorporating play and celebration, while making failing forward transparent as adaptations of the measurement strategy occur. Use data over time to tell the story of improvement by annotating key events, changes tested, and other relevant information that adds context to the data. Share qualitative stories to connect data to people's lived experience.

Last, although the quality improvement efforts described in this white paper are successful examples of the applied tools and methods of the IHI Psychology of Change Framework, no single effort to date has evaluated the entire framework as presented. Intentional testing is necessary to understand the framework's effectiveness, and to provide an evidence base for increased adoption and sustainability. IHI invites feedback on organizations' experiences with the framework, tools, and measurement in order to identify bright spots, fail forward, and improve together.

Conclusion

It is neither simple nor straightforward to lead improvement work, yet through W. Edwards Deming's fourth and often forgotten lens of psychology, it can be made easier. Some improvements can be introduced using only technical methods, without requiring changes in behavior or culture. Yet, to reach a higher level of performance and reliability, improvement teams and health care organizations will need to create the conditions for people to advance and sustain improvement. The IHI Psychology of Change Framework presents a renewed focus on the human side of change, to increase the likelihood that improvement efforts will succeed.

Building on existing research, methods, and examples, and with a focus on Everett Rogers' early adopters and early majority categories, the IHI Psychology of Change Framework offers five interrelated domains of practice to help quality improvement leaders activate people to choose mindfully, and with purpose, to improve the care delivery processes and systems in which they provide and receive care.

Importantly, the five domains of IHI's framework are commitment driven, not compliance based. Courage is the emotional resource that enables people to activate their power, or their ability, to close the "know-do" gap. Whereas an "I have to" mindset forfeits choice and generates feelings of powerlessness, an "I choose to" mindset exercises the power inherent in choice.[68] Cultivating people's agency to act improves joy, job satisfaction, and health. It builds capacity that serves as an ongoing resource for addressing other adaptive improvement challenges.

The IHI Psychology of Change Framework challenges a traditional approach to quality improvement where technical experts implement new ideas based on their expertise and perspective. This approach has been comfortable and familiar to health care leaders and clinicians for generations; nearly all leaders were trained as and rewarded for being a "leader with authority" in their given context. The white paper authors appreciate the important history of this technical approach in health care and do not underestimate the difficulty of changing one's own and others' mindsets and behaviors to improve the adoption of quality improvement, sustainably, at scale.

Creating the environment where mindsets and behaviors can evolve so that each team member's full potential is applied to given work is an aspirational goal for any leader. Doing this effectively requires an appreciation for the central objective of this work: activating people's agency. Inside each of us, and among all of us, are the necessary elements to make our systems better. Focusing on the value in people, getting to the heart of courage and power, presents an opportunity to change the way things have always been done. It's time the quality improvement community re-centers attention on every organization's greatest asset: its people.

References

1 Bastian H, Glasziou P, Chalmers I. Seventy-five trials and eleven systematic reviews a day: How will we ever keep up? *PLoS Medicine*. 2010;7(9).

2 Rogers E. *Diffusion of Innovations*. 5th edition. Simon and Schuster; 2003.

3 Deming WE. *The New Economics for Industry, Government, Education*. 3rd edition. The MIT Press; 2018.

4 Heifetz R, Grashow A, Linsky M. Diagnose the adaptive challenge: Understanding the human dimensions of change. In: *The Practice of Adaptive Leadership: Tools and Tactics for Changing Your Organization and the World*. Harvard Business Press; 2009.

5 Heifetz R, Laurie D. The work of leadership. *Harvard Business Review*. December 2001.

6 Kanter RM. Ten reasons people resist change. *Harvard Business Review*. September 2012.

7 Ganz M. How to organize to win. *The Nation*. March 16, 2018.

8 Ganz M. Public narrative, collective action, and power. In: Odugbemi S, Lee T (eds). *Accountability Through Public Opinion: From Inertia to Public Action*. The World Bank; 2011:273-289.

9 Francis S. *The Courage Way*. Berrett-Koehler Publishers; 2018.

10 Bandura A. Self-efficacy. In: Friedman H (ed). *Encyclopedia of Mental Health*. Academic Press; 1998.

11 Bandura A. *Self-Efficacy: The Exercise of Control*. WH Freeman; 1997.

12 Bandura A. A social cognitive theory of personality. In: Pervin LA, John OP (eds). *Handbook of Personality: Theory and Research*. Guilford Publications; 1999:154-196.

13 McCannon J, Margiotta B, Zier Alyesh A. Unleashing large-scale change. *Stanford Social Innovation Review*. June 16, 2017.

14 Ryan R, Deci E. Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*. 2000 Jan;25(1):54-67.

15 Deming WE. *The New Economics for Industry, Government, Education*. 3rd edition. The MIT Press; 2018.

16 Hackman R, Oldham G. Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance*. 1976;16(2):250-279.

17 Barry MJ, Edgman-Levitan S. Shared decision making — pinnacle of patient-centered care. *New England Journal of Medicine*. 2012 Mar 1;366(9):780-781.

18 Perlo J, Balik B, Swensen S, Kabcenell A, Landsman J, Feeley D. *IHI Framework for Improving Joy in Work*. IHI White Paper. Cambridge, MA: Institute for Healthcare Improvement; 2017.

[19] Ganz M. *What Is Public Narrative: Self, Us & Now (Public Narrative Worksheet)*. Harvard University; 2009.

[20] Hilton K. "How to Make Change Happen." Institute for Healthcare Improvement Blog. April 30, 2018.

[21] Ganz M. *What Is Public Narrative: Self, Us & Now (Public Narrative Worksheet)*. Harvard University; 2009.

[22] Hackman R, Oldham G. Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance*. 1976;16(2):250-279.

[23] Brown S. *Play: How It Shapes the Brain, Opens the Imagination and Invigorates the Soul*. Penguin Group; 2009.

[24] Pelton LJ, Fulmer T, Hendrich A, Mate K. Creating age-friendly health systems. *Healthcare Executive*. 2017 Nov;32(6):62-63.

[25] The Model for Improvement, developed by Associates in Process Improvement, is a simple, yet powerful tool for accelerating improvement.

[26] "A Patient Directs His Own Care." Institute for Healthcare Improvement; 2012.

[27] Shinkman R. Is "empowered dialysis" the key to better outcomes? *NEJM Catalyst*. March 15, 2018.

[28] Stephens L, Ryan-Collins, J, Boyle D. *Co-Production: A Manifesto for Growing the Core Economy*. New Economics Foundation; 2008.

[29] Batalden M, Batalden P, Margolis P, et al. Coproduction of healthcare service. *BMJ Quality and Safety*. 2016;25(7):509-517.

[30] Hilton K, Wageman R. Leadership in volunteer multistakeholder groups tackling complex problems. In: Peus C, Braun S, Schyns B (eds). *Leadership Lessons from Compelling Contexts (Monographs in Leadership and Management)*. Emerald Group Publishing Limited; 2016.

[31] McKay S. "Organizing for Transformational Change." Carnegie Common Blog. Carnegie Foundation for the Advancement of Teaching. May 2, 2016.

[32] Han H. An innovative community organizing campaign to improve mental health and wellbeing among Pacific Island youth in South Auckland, New Zealand. *Australasian Psychiatry*. 2015 Dec;23(6):670-674.

[33] Rose M, Rose K. Use of a surgical debriefing checklist to achieve higher value health care. *American Journal of Medical Quality*. 2018;33(5):514-522.

[34] Ganz M. *Organizing: People, Power, Change*. Harvard University; 2014.

[35] Palmer P. Five Habits of the Heart that help make democracy possible. In: Palmer P. *Healing the Heart of Democracy: The Courage to Create a Politics Worthy of Human Spirit*. Jossey-Bass; 2011.

36 Palmer P. *A Hidden Wholeness*. John Wiley and Sons; 2004.

37 Cooperrider DL. A time for action: Appreciative inquiry, peacebuilding, and the making of a Nobel nomination. *International Journal of Appreciative Inquiry*. February 2018.

38 Southern Jamaica Plain Health Center. "Liberation in the Exam Room: Racial Justice and Equity in Healthcare." Institute for Healthcare Improvement; 2018.

39 Wyatt R, Laderman, M, Botwinick L, Mate K, Whittington J. *Achieving Health Equity: A Guide for Health Care Organizations*. IHI White Paper. Cambridge, MA: Institute for Healthcare Improvement; 2016.

40 Ganz M. *Leadership, Organizing and Action: Leading Change*. Harvard Kennedy School; 2015.

41 Heimans J, Timms H. *New Power: How Power Works in Our Hyperconnected World — and How to Make It Work for You*. Doubleday; 2018.

42 Hilton K. "Leadership and Organizing for Change." Institute for Healthcare Improvement virtual program.

43 Boyd A, Burnes B, Clark E, Nelson A. *Mobilising and Organizing for Large-Scale Change in Healthcare*. NHS Improving Quality; June 2013.

44 Nayar V. A shared purpose drives collaboration. *Harvard Business Review*. April 2, 2014.

45 Montoya RM, Pinter B. A model for understanding positive intergroup relations using the in-group-favoring norm. *Journal of Societal Issues*. 2016;72(3):584-600.

46 Battilana J, Casciaro T. The network secrets of great change agents. *Harvard Business Review*. July-August 2013.

47 Kotter JP. Accelerate! *Harvard Business Review*. November 2012.

48 Palmer P. "Touchstones for Creating Safe Spaces." Center for Courage and Renewal.

49 Nembhard I, Edmondson AC. Making it safe: The effects of leader inclusiveness and professional status on psychological safety and improvement efforts in health care teams. *Journal of Organizational Behavior*. 2006;27(7):941-966.

50 Wageman R, Nunes D, Burruss J, Hackman JR. *Senior Leadership Teams: What It Takes to Make Them Great*. Harvard Business School Publishing Corporation; 2008.

51 Sutton R, Rao H. *Scaling Up Excellence: Getting to More Without Settling for Less*. Crown Business; 2014.

52 McCannon J, Margiotta B. Inside the command center. *Stanford Social Innovation Review*. January 21, 2015.

53 Berwick DM, Calkins DR, McCannon CJ, Hackbarth AD. The 100,000 Lives Campaign: Setting a goal and a deadline for improving health care quality. *Journal of the American Medical Association*. 2006;295(3):324-327.

54 Endo J. "Mentoring in the 100,000 Lives Campaign: Just a Hospital Away." Institute for Healthcare Improvement; 2006.

55 Kegan R, Lahey LL. *Immunity to Change: How to Overcome It and Unlock the Potential in Yourself and Your Organization*. Harvard Business Publishing; 2009.

56 Kegan R, Lahey LK. *An Everyone Culture: Becoming a Deliberately Developmental Organization*. Harvard Business Publishing; 2016.

57 Edmondson A. Strategies for learning from failure. *Harvard Business Review*. April 2011.

58 Ganz M. *Handbook of Leadership Theory and Practice*. Harvard Business School Centennial Colloquium; 2010.

59 Fletcher A. *The Ladder of Engagement*. CommonAction.

60 Hannah S, Avolio B. Moral potency: Building the capacity for character-based leadership. *Consulting Psychology Journal: Practice and Research*. 2010;62(4):291-310.

61 Argyris C. Double loop learning in organizations. *Harvard Business Review*. September 1977.

62 Argyris C. Teaching smart people how to learn. *Harvard Business Review*. May-June 1991.

63 Argyris C. Good communication that blocks learning. *Harvard Business Review*. July-August 1994.

64 Dweck C. *Mindset: The New Psychology of Success: How We Can Learn to Fulfill Our Potential*. Ballantine Books; 2006.

65 Duckworth A. *Grit: The Power of Passion and Perseverance*. Scribner; 2016.

66 Kania J, Kramer J. Embracing emergence: How collective impact addresses complexity. *Stanford Social Innovation Review*. January 21, 2013.

67 Sullivan G, Hamilton M. *A Leader's Guide to After-Action Reviews*. Headquarters Department of the Army; 1993.

68 McKeown G. *Essentialism: The Disciplined Pursuit of Less*. Crown Business; 2014.