

Rethinking Healthcare: Why Paradox Science Is Core to the Future of Health and Health Leadership

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Abstract: Solutions to healthcare's most persistent and pervasive challenges remain elusive because we approach them as navigating oppositional tensions: the need to drive efficiency versus improve quality, to leverage cutting-edge technology versus maintain human compassion, to address population health versus providing care to the patient in front of you. The key to transforming healthcare lies in the ability of healthcare leaders to recognize when oppositional tensions are in fact paradoxes at play, to increase the capability and collective capacity to navigate them. Paradox science contends sustainable solutions to intractable challenges come not from eliminating the tensions that operate within the complexity but from the ability of those involved to hold opposing ideas in productive balance. It empowers leaders and their teams to find innovative paths by engaging with tensions directly. This perspective piece outlines three steps healthcare leaders can take to apply paradox science in practice, providing descriptions and example actions for each: 1) Clarify the paradox, 2) Encourage experimentation, and 3) Adopt a dynamic view. Moving forward, health leaders must leverage paradox science to drive forward innovation agendas in order to truly transform the healthcare experience for patients, populations, and the health workforce that serves them.

Keywords: leadership, paradox theory, strategies, leading change, innovation

At the core of healthcare's intractable grand challenges—rising costs, inequities in access, quality and outcomes, and the relentless pursuit of technological modernization alongside a workforce stretched to its limits—are a string of paradoxes. Solutions to these challenges remain elusive because we approach them as navigating oppositional tensions: the need to drive efficiency versus improve quality, to leverage cutting-edge technology versus maintain human compassion, to address population health versus providing care to the patient in front of you. The dialogue is not new, nor are the characterization of constituent elements.^{1,2} The key to transforming healthcare lies in our ability to recognize when oppositional tensions are in fact paradoxes at play, so that we may increase our capability and collective capacity to navigate them.

Paradoxes are characterized by “contradictory yet interrelated elements that exist simultaneously and persist over time”.³ A true contradiction includes elements that clash and cannot be true simultaneously. For example, if a surgery must happen immediately but the patient must be stable prior to surgery, one of these conditions must be prioritized over the other. In contrast, a paradox involves elements that contradict at first glance but can both be true and coexist in a surprising way. For example, standardization and personalization appear at odds with one another, but we can imagine a future where standardized pathways explicitly call for and describe opportunities to personalize care according to patient-specific factors. Paradox science posits that the solution to healthcare's persistent tensions is not about making binary choices but embracing and working within their competing demands. Imagine a patient with complex needs and no attachment to primary care in a busy hospital emergency department (ED). They likely require extra time to discuss their symptoms and history thoroughly, likely slowing down the ED's workflow. Clinicians feel the tension between

giving patients individualized attention and maintaining an efficient throughput to minimize wait times for everyone — a constant challenge between empathy and expediency.

Why does this matter? Because healthcare, perhaps more than any other sector, is a domain where human complexity and competing needs collide every day, in almost every interaction. We are well-versed in describing the scale and complexity of the problems we face but give comparatively little attention to their social component.⁴ The core tenet of paradox science is that sustainable solutions to intractable challenges come not from eliminating the tensions that operate within the complexity but from the ability of those involved to hold opposing ideas in productive balance. Rather than causing burnout or indecision, paradox science equips leaders and their teams to confront tensions directly, finding innovative paths forward. Consider Toyota as a case example:

Stable and paranoid, systematic and experimental, formal and frank: The success of Toyota, a pathbreaking six-year study reveals, is due as much to its ability to embrace contradictions like these as to its manufacturing prowess.⁵

While Toyota may be critiqued for moving slowly, it introduced a hybrid engine to market ahead of its competitors. This paradoxical balance—valuing both stability and agility—has driven its sustained success, creating a culture that thrives on collaboration over competition and integration over impulsive action. While healthcare may face unique tensions, paradox science offers a framework to embrace them to generate innovative solutions. By helping leaders and teams see tensions as opportunities rather than obstacles, paradox science supports a more adaptive, humane, and resilient healthcare system—one capable of navigating complexity while staying grounded in purpose.

How Paradox Science Brings a New Kind of Healthcare to Life

While leadership itself is an evolving ideal and practice, the capacity to articulate these tensions determines success⁶ and paradox science provides conceptual and practical support. Through deliberate “both/and” thinking, it helps leaders and teams identify and understand opposing forces so that they can manage them to their advantage. Lego introduced structured support to create an appreciation and respect for paradoxical tensions, where leaders received external guidance to identify and navigate tensions.⁷ The CEO went so far as to hire a change agent to contrast his own tendencies.⁷ In its simplest form, leaders can reframe tensions as co-existing goals, signalling to the team that they can and should co-exist.⁸ For example, instead of asking “How can we reduce costs while maintaining high-quality care?”, leaders can ask their teams

How might we leverage resource constraints as an opportunity to innovate care delivery and uncover efficiencies that improve both quality and cost-effectiveness?

When confronted with workforce burnout against the imperative to innovate, leaders might ask “What practices could help us excel in today’s critical operations while creating space and resources to explore transformative future opportunities?”. By setting boundaries, leaders define the sandbox that teams can play in to create an evolving strategy that adapts in real time. This is amplified when leaders intentionally bring together diverse teams that hold conflicting viewpoints to reach well-rounded, innovative solutions. Instead of sacrificing one goal for the other, teams explicitly explore strategies that blend both sides, creating the potential for breakthrough ideas. This is not about compromise—it’s about integration. Leaders who embrace this way of thinking recognize that maintaining this balance is an ongoing journey, not a one-time decision. Balancing atypical knowledge with conventional knowledge is often critical to the link between innovation and impact.⁹ Through iterative processes, feedback loops, and a mindset open to continuous learning, it creates the structure that healthcare needs to adapt and thrive in a world where change and complexity are constants.

What Paradox Science Means for Healthcare’s Grand Challenges

Paradox science, at its core, is an approach to leadership and strategy that embraces tensions rather than managing them. It’s a mindset, a set of tools, and a methodology for making complex decisions in an increasingly complex world. Paradox science can be leveraged to support decision-making, organizational design, and leadership development that will enable healthcare organizations to meet current operational pressures without sacrificing future aspirations for a better, reimagined system. Leaders can support their teams in clarifying paradoxes, experimenting, and adopting a dynamic view (see Table 1). A range of resources exist to support these endeavours, including the paradox mindset

Table I Applying Paradox Science in Practice

Step	Aim	Action
Clarify the paradox	Support the team in articulating the core tensions they are face and how they are related.	Schedule a meeting with 5–10 people with diverse viewpoints. Leverage tools such as polarity mapping to visualize how tensions might complement one another.
Encourage experimentation	Promote small-scale tests of solutions that address both aspects of the paradox.	Create a cross-functional team tasked with designing and implementing innovative and integrated solutions.
Adopt a dynamic view	Emphasize that paradoxes are ongoing and require continuous navigation.	Set regular check-ins to discuss how the team is managing tensions and incorporate reflexive practices to learn from both success and failure without blame.

inventory,⁸ to support teams in exploring how they view and manage tensions; paradox mapping,¹⁰ to support teams in identifying and mapping tensions; and a range of curated resources to support reflection, discussion, and decision-making from the authors of Both/And Thinking (available at <https://bothandthinking.net/>). These applications of curiosity in practice support the creation of strategies that honor both personalized medicine and population health and workforce wellbeing and technological advancement, allowing health systems to provide high-touch, personal experiences while leveraging data and AI-driven insights to drive new models of care and deliver better outcomes.

Cultivating the Trust and Inspiration Needed for Health Systems That Learn

By admitting uncertainty and focusing on the purpose of applying paradox science in practice – the imperative to harmonize complex, historically competing demands—leaders and teams cultivate a foundation of trust. For healthcare practitioners and leaders, this validates the daily reality of their work, where they often face impossible choices. When leaders communicate that they are using paradox science to actively embrace these tensions, it speaks directly to the lived experience of their staff, patients, and broader community. It says, “We see you” and “We’re here to honor the complexity you experience with strategies that bring the best of both worlds”. This honesty can generate loyalty and genuine engagement among those with the diverse perspectives that paradox science aims to harness. It encourages a culture that courageously embraces complexity, respects the challenges of those working within and accessing the system, and is committed to crafting solutions that reflect both the science and the soul of medicine. This approach brings healthcare closer to its true purpose: a balanced, adaptive system that serves humanity in all its dimensions.

Embracing and applying paradox science is a means to amplify existing expertise, to help health systems embrace tensions as catalysts of improvement, create collaborative spaces that harness the wisdom of diverse voices, and balance familiarity with novelty to drive the transformation that patients and populations desperately deserve. Together, patients, staff, leaders, scientists, and communities can transform healthcare by embracing a mindset that honors both our tried-and-true practices and the bold, unconventional ideas needed to solve our most pressing challenges. By committing to balance, collaboration, and openness to new insights, we can create a healthcare system that serves everyone in an innovative and compassionate way. Inspired by the wisdom of those who have shaped my thinking, it is time for a new accountability in health care leadership, one that requires us to champion the “both/and”, stewarding the partnerships and corresponding dialogue needed to move beyond tensions and build our collective capacity to navigate the integration. Health leaders can start tomorrow, by identifying a key paradox at play in their daily work and convene a conversation that explores how persistent tensions can co-exist in innovative ways.

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Disclosure

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