

Creating Highly Reliable Accountable Care Organizations

Medical Care Research and Review
2016, Vol. 73(6) 660–672
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DOI: 10.1177/1077558716640413
mcr.sagepub.com



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Abstract

Accountable Care Organizations' (ACOs) pursuit of the triple aim of higher quality, lower cost, and improved population health has met with mixed results. To improve the design and implementation of ACOs we look to organizations that manage similarly complex, dynamic, and tightly coupled conditions while sustaining exceptional performance known as high-reliability organizations. We describe the key processes through which organizations achieve reliability, the leadership and organizational practices that enable it, and the role that professionals can play when charged with enacting it. Specifically, we present concrete practices and processes from health care organizations pursuing high-reliability and from early ACOs to illustrate how the triple aim may be met by cultivating mindful organizing, practicing reliability-enhancing leadership, and identifying and supporting reliability professionals. We conclude by proposing a set of research questions to advance the study of ACOs and high-reliability research.

Keywords

Accountable care organizations, high-reliability, HROs, mindful organizing

Pursuing accountable care and its “triple aim” of higher quality, lower cost, and improved population health remains a significant challenge for most health care organizations (Goldsmith & Kaufman, 2015). For instance, 13 of the 32 organizations that enrolled in the Medicare Pioneer ACO (accountable care organization) program dropped out. Others with extensive experience with managed care were also poised to

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leave the program. These Pioneers fared poorly because they failed to realize tangible benefits by missing spending targets, not attracting patients, and losing market share (Goldsmith & Kaufman, 2015). Thus, early experience with the Medicare ACO programs suggests the triple aim goals on a broad scale will be challenging not unlike the problems that precipitated the downfall of the integrated delivery networks of the 1990s (Burns & Pauly, 2012). However, recent evaluations do find cost savings on average without adverse effects on patient experience or quality in the first 2 years of the Pioneer ACO program (McClellan, Patel, Latts, & Dang-Vu, 2015; McWilliams, Landon, Chernew, & Zaslavsky, 2014; Nyweide et al., 2015).

One interpretation of the failure of many pioneer ACOs to consistently achieve objectives emphasizes significant, unwanted variation in operational reliability. The unwanted variation, in turn, results from inherent operational complexity, frequent fast pace, and tight coupling across disparate professionals and organizational units that have not previously coordinated (Perrow, 1984). Realizing the benefits of the ACO model requires taking systems seriously—thinking about interorganizational and interunit processes needed to effectively care for populations of patients over time (Shortell & Singer, 2008). Thinking systemically is essential because, as organizations grow in size and complexity, it becomes more difficult for providers of care to maintain awareness across the system. When this occurs, care transitions break down and operational reliability is compromised (Hilligoss & Vogus, 2015). Examples of such operational failures, including but not limited to failures to close referral loops between primary and specialty care, share information about patients across providers and work shifts, communicate test results back to patients, and reconcile medications prescribed by multiple providers, abound. To effectively manage complexity, fast pace, and tight coupling, ACOs need to develop capabilities and implement practices that avoid breakdowns and ensure reliably safe care.

Studying high-reliability organizations (HROs) could inform and support the development and implementation of ACOs. HROs like aircraft carrier flight decks and nuclear power control rooms are known for their ability to manage complexity, fast pace, and tight coupling reliably for extended periods (Roberts, 1990a). HROs set reliability as an organizational priority and cornerstone of organizational culture by utilizing a combination of design redundancy, continuous training, and learning from near misses (Gaba, 2000). Doing so also relies on capturing details that enables discrimination between problems and noise, cultivating a mindset committed to actively surfacing early harbingers of failure and unexpected events, and building behavioral capabilities to swiftly adapt to and improve through the new information (Weick, Sutcliffe, & Obstfeld, 1999). In this essay, we explain the concept of high reliability and share findings from research that illustrate key processes through which organizations achieve reliability (Vogus & Sutcliffe, 2007a), leadership and organizational practices that enable it (e.g., Madsen, Desai, Roberts, & Wong, 2006), and the role that professionals can play when charged with enacting it (Roe & Schulman, 2008). We review this research to inform the practice and evaluation of ACOs and propose further research that can advance the study of high reliability in health care.

High-Reliability Organizations

HROs are defined by their exceptional performance, characterized by sustaining nearly error-free performance for extended periods (LaPorte & Consolini, 1991; Roberts, 1990a; Schulman, 1993). They maintain this highly reliable performance despite operating in complex, dynamic conditions with tightly coupled operations that defy comprehensive understanding of entire systems (Weick & Sutcliffe, 2007). To navigate the unforgiving conditions they face, HROs capture discriminatory detail and early indicators of things that could go awry. What fosters this capability is an organizational mindset and interpersonal processes that emphasize surfacing the unexpected and continuously managing fluctuations (Roe & Schulman, 2008; Schulman, 1993). Managing fluctuations means developing capabilities to make sense of new data quickly and to deploy the right response at the right time (Schulman, 1993; Weick & Sutcliffe, 2007). These processes have been referred to as mindful organizing (Weick & Sutcliffe, 2007). In this article, we orient our review of HROs primarily around the construct of mindful organizing because it both provides a coherent theory and describes a set of mechanisms through which classic HROs (e.g., aircraft carrier flight decks; LaPorte & Consolini, 1991) and the people who work in them (i.e., reliability professionals; Roe & Schulman, 2008) produce reliability. In doing so, we do not mean to imply that mindful organizing fully encompasses the HRO tradition.

Mindful organizing entails five interrelated behavioral processes (Weick et al., 1999; Weick & Sutcliffe, 2007). First, preoccupation with failure is active consideration and ongoing wariness of the possibility of failure that treats failures and near misses as indicators of potentially larger problems that require systematic solutions (LaPorte & Consolini, 1991). Second, reluctance to simplify interpretations means actively questioning received wisdom and operating assumptions to better uncover blind spots and to eschew simple workarounds that mask deeper problems (Schulman, 1993). Third, sensitivity to operations means creating and maintaining a current, integrated understanding of work processes and valuing those who do the work (Weick et al., 1999). Fourth, commitment to resilience involves growing employee and organizational capabilities to adapt, improvise, and learn to better recover from unexpected events (van Dyck, Frese, Baer, & Sonnentag, 2005). Last, deference to expertise occurs when decisions migrate to the people with the greatest understanding of a particular problem regardless of formal rank (Roberts, Stout, & Halpern, 1994).

Health care practitioners, regulators, and researchers have advocated that hospitals emulate the practices and processes of HROs (Carroll & Rudolph, 2006; Chassin & Loeb, 2013; Institute of Medicine, 1999), with emerging evidence lending support to their recommendations. Qualitative studies in health care contexts have linked observed changes in mindful organizing to mortality rates (Madsen et al., 2006) and other clinical outcomes (Knox, Simpson, & Garite, 1999). Other re-analyses of high-profile disasters like the “excess deaths” of pediatric patients at the Bristol Royal Infirmary (Weick & Sutcliffe, 2003) illustrate the potential for negative consequences when mindful organizing is absent. A series of quantitative studies in hospital nursing units found that mindful organizing was associated with fewer medication errors

(Ausserhofer et al., 2013; Vogus & Sutcliffe, 2007a, 2007b) and patient falls (Vogus & Sutcliffe, 2007a). The positive effects of mindful organizing were found to be stronger in workgroups that trusted their leaders and most fully implemented standard operating procedures (e.g., care pathways; Vogus & Sutcliffe, 2007b). Related research also found that high-reliability practices and processes correlate with reduced incidence of patient safety indicators and readmissions (Hansen, Williams, & Singer, 2011; Singer, Lin, Falwell, Gaba, & Baker, 2009).

Research on HROs has also begun to document how leader characteristics and behaviors can foster mindful organizing and greater reliability. Specifically, leaders who establish reliability as an organizational priority (Roberts, 1990a) by championing its importance and utilizing political capital to pursue it (Bierly, Gallagher, & Spender, 2014) can enhance reliability. Additionally, leaders that build trust with (Ausserhofer et al., 2013; Vogus & Sutcliffe, 2007b) and empower frontline staff to make decisions, speak up, and lead (Klein, Ziegert, Knight, & Xiao, 2006; Madsen et al., 2006) can transform their organizations to be more reliable. Leaders can also create and sustain mindfulness and reliability by making investments in organizational infrastructure (Singer & Vogus, 2013), including infrastructure for learning from near misses (Carroll, 1998) and redundancy (Roberts, 1990b). HROs' leaders invest in careful selection practices paired with continuous training and extensive socialization that emphasizes interpersonal skills because they are foundational to building trust and credibility among interdependent colleagues (Schulman, 1993); engaging in richer, hazard-focused interactions (Gordon, Mendenhall, & O'Connor, 2012; Weick & Sutcliffe, 2007); and creating meaningful connections and helping relationships (Bierly et al., 2014; Madsen et al., 2006; Roe & Schulman, 2008). Leaders can help ensure consistent and continuous implementation of these practices by conducting periodic organizational audits, facilitating boundary spanning across operating units, disseminating best practices, and promoting more mindful organizing and enhanced reliability (Rerup, 2009). Conversely, when leaders try to retain control and operate in "traditional" hierarchy-enforcing ways, reliability can collapse (Madsen et al., 2006; Weick & Sutcliffe, 2003).

Creating and sustaining operational reliability, in part, relies on "reliability professionals" or employees with special commitment and skills to ensure operational reliability (Roe & Schulman, 2008). Roe and Schulman (2008) find that reliability professionals (i.e., midlevel managers such as technical department heads) play a crucial role in creating and sustaining organizational reliability by implementing organizational strategy and adapting it to local circumstances. They do the work of anticipating fluctuations in demands, managing sources of vulnerability, and balancing the need for anticipation and careful causal analysis with flexibility and improvisation in the face of unexpected change (Roe & Schulman, 2008). These professionals often work in teams that comprise a collective knowledge base that enables pattern recognition (i.e., sizing up a situation and connecting it to broader models of appropriate action), scenario formulation (i.e., developing flexible protocols that encompass a range of potential situations), and the application of both in practice. That is, they are the bridge between leader practices and ongoing frontline mindful organizing and reliability.

Both explicitly and implicitly, policy makers who envisioned ACOs conceived of organizations that would possess many HRO-like qualities. That is, performing highly reliably is essential for achieving savings while improving quality and population health (McClellan, McKethan, Lewis, & Roski, 2010). Thus, lessons from acknowledged HROs have great potential for helping scholars and practitioners to understand ACOs and for informing their organization and operations.

Lessons From HROs for ACOs

As an emerging organizational form, ACOs are incompletely understood. In addition, they represent complex arrangements in two keys respects. First, their charge is to organize care for a population. A population health focus necessitates collaboration and coordination across organizational boundaries, and the scale and scope of the operations required to serve populations make it difficult to fully resolve coordination issues contractually or through protocols. Second, they face new payment models that include various forms of risk sharing (which heighten the costs of errors and unexpected events), with difficult to achieve savings thresholds (e.g., Goldsmith & Kaufman, 2015) and a wide array of quality measures that must be satisfied. In both cases, the swift management of fluctuations becomes essential (Roe & Schulman, 2008) as does the ability of ACOs to catch, respond early to, and learn from signs of operational failures (Tucker & Edmondson, 2003). For example, catching, responding to, and learning from signs of lagging provider engagement like failures to close referral loops will be critical for ACOs. In the following sections we outline how lessons about mindful organizing from research on HROs—including their processes, practices, and people—can be applied to studying, understanding, and managing ACOs.

Cultivate Mindful Organizing Processes

As indicated above, a growing body of research in health care settings indicates that mindful organizing has a consistently positive effect on the quality and safety of patient care because it enables organizations and their members to discern discriminatory detail about emerging issues and to act swiftly in response to these details in the most trying environments (Weick & Sutcliffe, 2007). We offer suggestive evidence from health care organizations pursuing high-reliability and practices of early ACOs to illustrate how some organizations are establishing processes that elicit aspects of mindful organizing.

ACOs can better anticipate threats that undermine achieving the triple aim by continually discussing ways in which they can fail on costs, quality, or population health. Ascension Health makes it easy to detect weak signals of failure by monitoring a broad set of early and leading indicators including precursors that could have caused harm and near misses that were caught and stopped (Pryor, Hendrich, Henkel, Beckmann, & Tersigni, 2011). More richly representing risks to an ACO can help them overcome organizational tendencies toward unresponsiveness and overconfidence (Singer & Shortell, 2011). An ACO might look at information exchange associated with referrals

as a source of risk and put in place processes that more actively foster and track the reliability of these interactions. For example, “Northeast ACO” (a pseudonym) has worked to strengthen referral relationships and set expectations for care coordination through “speed dating sessions” between primary care physicians and specialists (Dupree et al., 2014). A study that looked at coordination across medical neighbors more generally found four common mechanisms for addressing such challenges: reliance on interorganizational routines, information connectivity, boundary spanners, and communication, negotiation, and decision mechanisms (Alidina, Rosenthal, Schneider, & Singer, 2016).

Organizing is more mindful when people are reluctant to simplify their interpretations. More ideas are kept in play and refined when ACOs track early indicators, which signal if an organization is falling off track, thereby enabling swift course corrections. Early warning signs are more likely to be noticed and escalated when ACOs, for instance, arm care coordinators with patient and practice data. Developing and updating more comprehensive data dashboards such as Advocate and Blue Cross/Blue Shield’s collaborative quality, service, utilization, and cost dashboard (Meyer, 2012) enables organization leaders and members to keep more data in mind so that dangerous oversimplifications are less likely. In an organization as complex as an ACO, maintaining an up-to-date, integrated picture of operations (i.e., sensitivity to operations) is essential.

Mindful organizing, and the resilience and learning it promotes, results when more stakeholders seek input and when more infrastructure exists to process it. In collaborating to form an ACO, California based HealthCare Partners, Monarch HealthCare, and Anthem Blue Cross, their largest payor, jointly developed an ACO steering committee and topic-specific subcommittees so that each could contribute its unique perspective and knowledge to spur learning and greater reliability (Larson et al., 2012). ACOs can also organize more mindfully by deferring operational issues to frontline experts who are more keenly attuned to those problems and needs. For example, Cigna’s Collaborative Accountable Care initiative defers to frontline experts by authorizing practice-based care coordinators to refer complex patients to medical or behavioral case management, chronic condition coaching, or pharmacy services as they see fit (Salmon et al., 2012). Salt Lake City’s Intermountain Healthcare combines resilience with reluctance to simplify through its renowned information learning system, which allows doctors to freely override standard protocols, captures the overrides and reasons for them, and uses these data to inform further improvement to standard protocols (Bohmer, 2009; James & Savitz, 2011).

Practice Reliability-Enhancing Leadership

The complexity of ACOs present leadership challenges in the form of developing and managing relationships with a range of other organizations (e.g., post-acute care facilities, health departments, insurers, and community-based social service organizations). Specifically, Dupree et al. (2014) found that care coordination is seen as critical, with 86% of their survey respondents emphasizing the importance of avoiding wasted

resources due to poor care coordination. Leaders of ACOs are also charged with creating a context and transmitting the incentives to ensure that the combined organization diligently pursues cost reduction, quality improvement, and population health. To date, research on ACO leadership has emphasized basic, yet foundational, questions of who's leading these organizations and the organizational form they are choosing. Recent research indicates that 51% of ACOs were physician-led with another 33% jointly led by physicians and hospitals. Physician-led organizations are also less likely to participate in the Pioneer program, and few participating in the Medicare Shared Savings Program have agreed to share risk in the event of higher than expected costs (Colla, Lewis, Shortell, & Fisher, 2014).

Comparatively less research has explored what leader capabilities may be required to navigate the dynamic complexity facing ACOs. Research on high reliability in health care as well as classic HROs suggests that the social skills of leaders are especially critical for managing complexity, ensuring smooth coordination, and fostering continuous improvement. Specifically, according to this literature ACOs need leaders who choose to focus their attention on frontline staff, empower them to act and make decisions (Klein et al., 2006), build trusting and high-quality relationships with them (Vogus & Sutcliffe, 2007b), solicit their concerns, and engage in active problem solving to resolve them (Tucker & Singer, 2015). Also, key for ACOs is the language leaders use and through it their ability to create shared identity (Kreindler et al., 2012), accountability (Addicott & Shortell, 2014), and an emphasis on reliability (Ruchlin, Dubbs, Callahan, & Fosina, 2004). Research on HROs suggests that leaders more effectively do this and enhance reliability when they model new ways of talking, using new words to describe problems (Edmondson, Roberto, & Tucker, 2001) or when they ask questions related to mindful organizing of their frontline managers and clinicians such as "Where are we most vulnerable?" "What are the leading indicators of our vulnerability (e.g., readmissions, referral patterns)?" "Are we making the right assumptions about the population we're serving?" "What other people or stakeholders should we be consulting?" These kinds of questions not only have the potential to generate actionable responses but also to convey an expectation that frontline managers and clinicians should continuously consider these issues (Vogus & Hilligoss, 2016).

Identify and Support Reliability Professionals

With ACOs' emphasis on the structure of contractual arrangements and governance structures, the critical role of frontline professionals within the ACO has been underappreciated. However, emerging research has begun to document how roles bridging the strategic intent of ACOs with their operational realities can aid them in achieving their ambitious goals, even overcoming their mixed results to date. The Massachusetts General Physician Organization, for example, assigned practice-based care coordinators to high-cost beneficiaries, resulting in reduced mortality, improved beneficiary satisfaction, and significant cost savings (McCall, Cromwell, & Urato, 2010). Jubelt et al. (2014) found that high-quality case managers were associated with higher

satisfaction with care and lower incidence of emergency department use. That is, these kinds of clinical coordinators, whose job it is to smooth communication and coordination across organizational and professional boundaries for high-risk patients and populations, can play an important role in reliably delivering accountable care.

Care coordinators can also enhance ACO performance by proactively identifying threats to cost, quality, and population health. For example, New York Presbyterian's regional health collaborative has created the role of the nurse care manager to proactively search "the hospital's electronic disease registries to identify high-risk patients who have a high number of ED visits, hospital admissions, or both who have abnormal clinical indicators for one or more chronic conditions" and pre-visit planning teams that anticipate what screenings, referrals, and educational activities will be necessary to reduce costly emergency department visits and hospitalizations (Carrillo, Carrillo, Guimento, Mucaria, & Leiman, 2014, p. 1987). Other organizations as diverse as the Hennepin Health safety net ACO and University Hospital in Cleveland have similarly deployed care coordinators and navigators as reliability professionals (Meyer, 2012; Sandberg et al., 2014). In sum, research on ACOs suggests that establishing and empowering clinical coordinators to act as reliability professionals can produce significant benefits.

Future Research

We have argued that ACOs can benefit by applying lessons from research on HROs in practice. Doing so will also raise important research questions including the conditions under which ACOs are most likely to foster mindful organizing, institute high-reliability leadership and work practices, and leverage reliability professionals, and with what impact. An additional question is whether and to what extent the complexity and size of ACOs limits the applicability of recommendations based on typically smaller, less complex HROs. At the same time, ACOs provide a context for significantly advancing high-reliability research in three key ways.

First, HROs have been considered mostly in the context of errors and safety outcomes, but a growing body of research has linked mindful organizing, for example, to enhanced patient experience (Ndubisi, 2012), cost savings (Hales, Kroes, Chen, & Kang, 2012), organizational innovation (Bierly et al., 2014; Vogus & Welbourne, 2003), and lower employee turnover rates (Vogus, Cooil, Sitterding, & Everett, 2014). Building on this research, new studies of HRO practices and processes applied by ACOs could investigate whether mindful organizing, for instance, is positively associated with multiple outcomes simultaneously (e.g., the triple aim) or if specific aspects of HROs (mindful organizing, reliability professionals, and leader behaviors and practices) matter differentially depending on the outcome. Such research could also provide a fuller cost-benefit analysis of pursuing an HRO approach. Second, foundational research on HROs as well as prior research applying high reliability frameworks to health care has tended to focus on components of organizations like a single unit (Madsen et al., 2006) or type of unit (e.g., Vogus & Sutcliffe, 2007a). ACOs can help illustrate the conditions under which mindful organizing and reliability scales up to the organizational and interorganizational levels. It also provides an ideal context to

explore how mindful organizing operates across boundaries and the practices needed to support boundary-spanning activities. Third, given the importance of information technology to the operation of ACOs, these new and varied organizations provide an opportunity to further investigate the relationship between information technology and interoperability, mindfulness, and reliability. Valorinta's (2009) case studies of two organizations illustrates how information technology both enhances (heightening attention to specific concerns) and inhibits (through routinization and automation) mindful organizing. Such findings may help explain the mixed results of health information technology on quality and safety (Koppel et al., 2005; Schiff et al., 2015). Specifically, studying ACOs could help identify the conditions under which IT enhances or inhibits mindfulness as well as the effects of the IT and mindfulness relationship on varied organizational outcomes.

Conclusion

ACOs face considerable uncertainty and complexity both internally and externally in working to achieve the triple aim objectives. The concepts and evidence from research on HROs can help ACOs to provide care in a nearly error-free manner. We hope this stimulates both rethinking how the challenge of accountable care is pursued and inspires additional research on ACOs and high-reliability in health care.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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