

Harnessing the true power of cultural, clinical and operational data



Using data to track and improve performance has long been a hallmark of high-quality healthcare.

For decades, healthcare organizations have relied on clinical and operational data to assess quality and consistency, as well as anticipate risk and identify improvement opportunities. More recently, the field has begun to appreciate the role culture plays in performance. Organizations are now collecting and analyzing team perceptions of the work environment, exploring topics like burnout, teamwork and communication, and leadership. The recognition of culture's role in performance ushered in a fundamental shift in how healthcare organizations view quality and approach improvement.

Today, we stand on the verge of another transformation. Although viewing clinical, operational and cultural data separately is powerful, looking at the intersections of the different data types can offer an even richer picture. By integrating various data sources, we can better understand the relationship between an organization's culture and its clinical and operational outcomes. We can

see how factors, such as team communication, personal burnout and psychological safety, impact a work setting's ability to deliver consistently high-quality care, thereby identifying areas of improvement. Similarly, we can determine how operational constraints, like long work hours and persistent overtime, influence team resilience. Combined, these factors affect how much a team can improve its work and handle errors appropriately.

Correlations among data sets can reveal new performance drivers and help prioritize limited improvement resources for the greatest impact. "When we look at cultural, process and clinical outcomes data, we see key interrelationships," says Allan Frankel, executive principal for Vizient Safe and Reliable Healthcare. "Access to comprehensive data and meaningful correlations ushers in productive discussions on where to prioritize our efforts and allows us to approach opportunities in a well-informed and strategic manner."



The difference between correlation and causation

Data often tells a story, but it isn't always easy to determine what that story is and whether it's complete. "There is a frequently used adage that 'correlation does not imply causation,'" says Amy Richards, vice president of Advanced Analytics and Informatics for Vizient, Inc. "When we see two variables moving together, we don't always know which one influences the other, and we can't assume that these are the only two factors at play. Interpretation of the interplay between all three data domains (clinical, operational, and cultural) will be crucial to understanding the most meaningful connections."

By looking at correlations, we start to appreciate how changes in one aspect—say, culture or process—have the potential to affect other aspects—such as clinical outcomes and patient satisfaction. These effects could be positive, negative or a mixture of the two. Ultimately, we're able to see interesting facets of a complicated story and acknowledge that further research may reveal further insight.

Meaningful correlations to watch

We're just scratching the surface of the connections among different data sets, and our preliminary analyses already show interesting insights. The following sections offer a brief look at some impactful relationships.

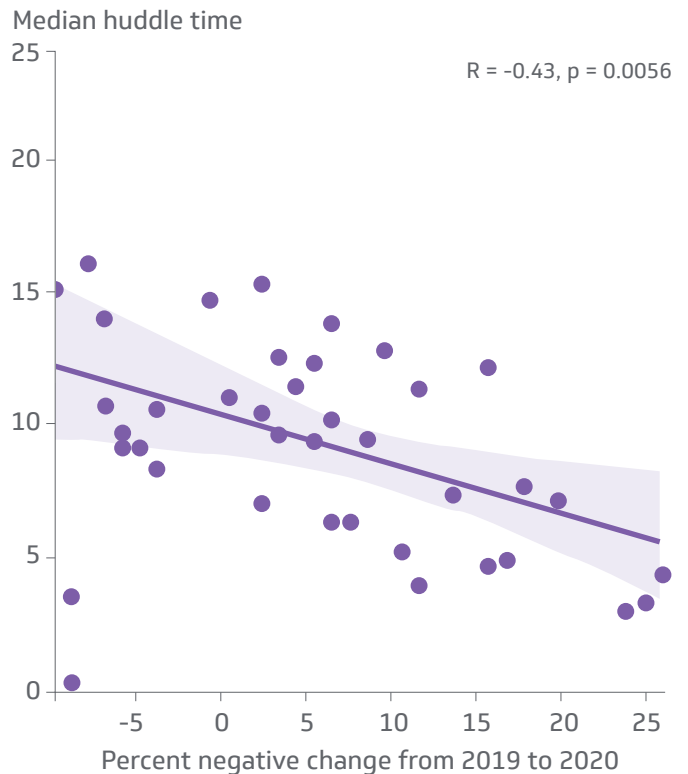
1. The effect of huddle times on improvement readiness

Regular huddles among healthcare teams create a supportive environment in which each participant can freely share insights, express concerns and propose ideas. Huddles help organizations foster a culture of continuous improvement and strive toward becoming a high-quality, dependable learning organization. It's essential not only to conduct huddles regularly but also to analyze process and cultural data to identify correlations between the duration of huddles and the team's capacity for learning and development.

According to data from 2019 and 2020 (Figure 1), teams that huddled at a digital visual management board for 10 or more minutes were more likely to see improvement in crucial culture questions than those that had a shorter average huddle time. "These questions cover a range of topics, including whether teams use input and suggestions from staff, integrate lessons learned from

other work settings and feel prepared to handle errors appropriately—all vital factors for continuous learning and improvement," says Joshua Proulx, principal, Data Science and Member Insights for Vizient, Inc. "When we compare the teams studied after a year, those that had a longer median huddle time were more likely to see more positive scores for these improvement readiness questions that focused on quality and safety." This finding points to the value of huddling for a requisite amount of time to enhance culture and drive performance.

Figure 1. Huddle times compare with degree of improvement readiness



In this work setting, the learning environment effectively fixes defects to improve the quality of what we do.

Source: See appendix for data sources

2. The nuances around overtime and productivity

Overtime (OT) is a reality in most healthcare organizations, and data correlations reveal that overtime levels can have a mixed effect on culture. On the one hand, a small amount of overtime can help teams feel like their job is secure because they are needed to fill in the necessary hours to care for patients. On the other hand, teams working too much overtime become less resilient and less able to recover emotionally, which can lead to burnout.

The relationship between productivity and improvement readiness is similarly nuanced. When teams have more time to spend with patients, they feel more confident in their ability to handle errors, thereby enhancing the culture around improvement readiness. However, achieving a successful balance is essential because an increase in time spent per patient corresponds to inefficiencies and lower productivity. These results in turn negatively affect performance in other clinical, cultural, operational and financial measures.

“This outcome points to a tension that many healthcare organizations experience,” says Richards. “There are financial pressures and productivity measures that organizations are trying to meet for profitability. However, there also are cultural considerations because organizations want to create an environment where people feel respected, engaged and focused on meaningful work. With such an environment, organizations can stave off burnout, turnover and other cultural risks that have quality and cost implications.”



Amy Richards
Vice President of Advanced
Analytics and Informatics,
Vizient, Inc.



What is the right balance? And how can we triangulate on that determination using all the data assets available to us? These are the questions we aim to answer as we learn more about the data and how it correlates. As we expand our understanding, we can make better decisions as to what levels of productivity and usage are ideal for team dynamics.

3. The impact of team burnout on patient mortality

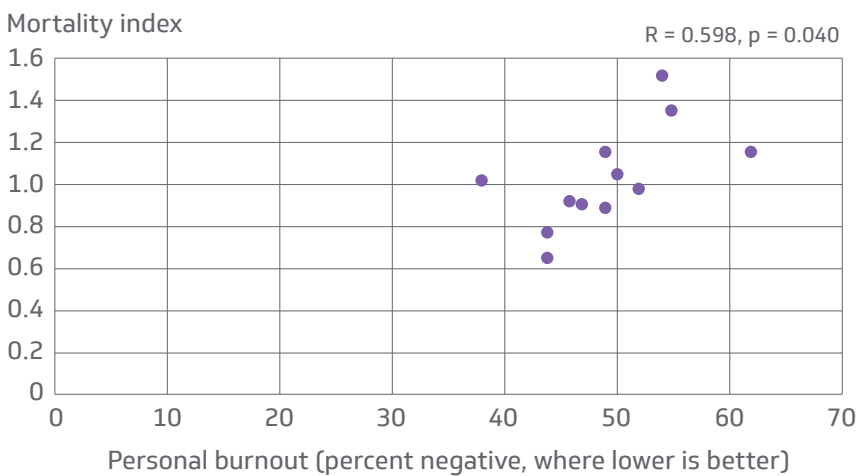
Burnout in healthcare isn't new, and the COVID-19 pandemic has exacerbated an already serious issue. When an individual experiences personal burnout, they feel events in the work setting affect their life in an emotionally unhealthy way. They're fatigued when they get up in the morning, knowing they must face another day on the job. They're frustrated and feel like they are working too hard.

Not only is burnout a cultural problem—it also poses a quality and safety risk because burned-out teams may struggle to perform at a consistently high level

and have less resilience during challenging times. High levels of burnout undermine patient care and diminish an organization's capacity to improve. Moreover, when burnout increases, individuals tend to depersonalize, so patients become little more than "cases" or "the heart failure in Room 502."

Correlations between clinical and cultural data show that facilities that have lower levels of personal burnout also tend to have better (lower) in-hospital mortality rates, based on a review of data gathered from hospitals from 2016 through 2020 (Figure 2).

Figure 2. Hospital-level personal burnout compared with patient mortality (2016-2020)



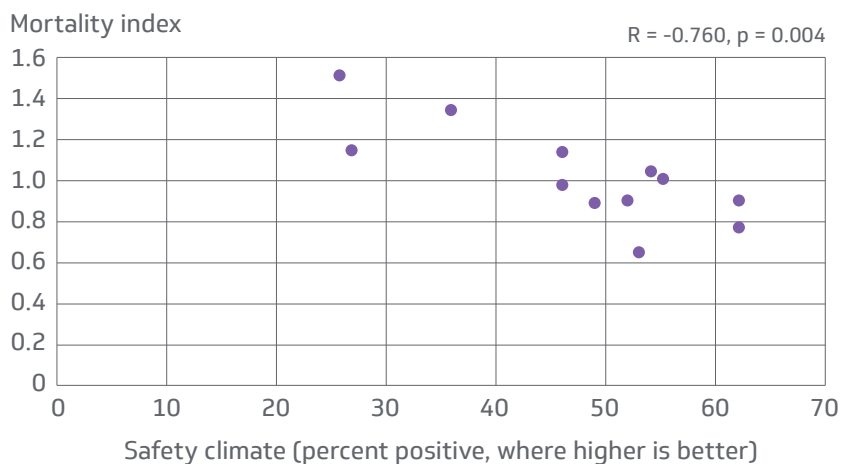
The more burned out the staff, the higher the mortality index

Source: See appendix for data sources

“What’s clear from the data is that if you don’t get your culture right, your standardized mortality rates are going to be variable,” says Frankel. “Although myriad factors increase mortality, burnout can signal systemic issues that contribute to substandard patient care. If you design interventions to address cultural issues and individual well-being, teams are more likely to feel good about the work they do, which can increase their likelihood of following process, engaging in improvement work and other factors that collectively help decrease patient mortality and elevate organizational performance.”

In addition to lower burnout levels, the presence of a climate of safety—where teams perceive a palpable dedication to safety in their work setting—is correlated with lower in-hospital patient mortality (Figure 3). This kind of workplace culture also yields lower levels of personal burnout. “The safety climate domain measures important aspects of the team’s psychological safety, including whether its members feel comfortable speaking up if they see an issue with patient care,” says Proulx. “We find that team members feel more hesitant to speak up at facilities that have higher mortality rates.”

Figure 3. Hospital-level safety culture compared with patient mortality (2016-2020)



Higher ratings for safety climate correlate with better mortality rates

Source: See appendix for data sources

4. The role of leadership in influencing outcomes

When we look at those organizations that consistently perform well clinically and sustain that performance over time, it's clear that strong leadership is one of the most influential factors. "The CEO and C-suite in these organizations have defined goals that put patient care first," says David Levine, chief medical officer for Vizient. "Here, teams are more engaged; they feel valued; they are focused on improvement; and clinical, operational and cultural metrics are positioned to improve."

Common qualities in top performers include a shared sense of purpose, a hands-on leadership style, accountability systems for quality and safety, and a focus on results and a culture of collaboration.¹ Mutual respect, professionalism, multidisciplinary teams, and consensus between senior leaders and staff define the collaborative climate seen in these top performers.

¹Keroack MA, Youngberg BJ, Cerese JL, et al. Organizational factors associated with high performance in quality and safety in academic medical centers. *Acad Med.* 2007;82(12):1178-1186. doi:10.1097/ACM.0b013e318159e1ff

We've just begun unlocking the power of integrated clinical, operational and cultural data

Improving performance in a healthcare organization is a continuous journey—especially in a constantly changing environment where new people, new discoveries and outside factors can change dynamics in an instant. To advance along the journey toward better care, you need access to clinical, cultural and operational data. These data provide the tools and inform the expertise needed to uncover and interpret potential correlations, as well as the knowledge and experience to deploy interventions and drive outcomes in a meaningful way.

With the right information, we can direct improvement work toward the most impactful interventions. For example, we can see where visual management tools could foster transparency and communication while facilitating improvement initiatives and allowing teams to voice concerns safely and celebrate wins in real time. We can spot opportunities for leadership to equip managers with the skills, activities and behaviors they need to guide their teams toward better patient care and a healthier work environment. And we can discern where a stronger infrastructure is necessary to manage the work at hand.

When you partner with a strategic ally like Vizient that provides comprehensive data, analytics, improvement resources and consulting services, you can effectively understand and address problems. Even amid conflicting priorities, this alliance helps lay the groundwork for healthier patients and teams, improved operational efficiency, and strong financial growth.

Appendix

Data sources

- **Vizient Clinical Data Base® (CDB).** The CDB provides high-quality, accurate and transparent data on patient outcomes—such as mortality, length of stay, complication and readmission rates, and hospital-acquired conditions. More than 1,000 hospital facilities draw from the platform’s outcomes data to benchmark against peers, reduce variation, and identify and sustain performance improvements.
- **Vizient Operational Data Base® (ODB).** The ODB provides hospitals with transparent, comparative insights on the operational characteristics of hospital departments to support performance improvement, budgeting and cost reduction initiatives. It includes reliable financial and operational data that helps organizations make informed decisions about employee productivity, supply usage and other areas that directly impact the bottom line.
- **Vizient SCORE™ (Safety, Culture, Operational Risk, Resilience/Burnout and Engagement) Survey.** SCORE is a highly validated survey tool that measures the culture and engagement of a healthcare organization’s workforce. It looks at current indicators that directly correlate to patient and team experience at the local level, including questions about engagement, burnout/well-being, resilience, improvement readiness, psychological safety and more.

Methodology

- **The effect of huddle times on improvement readiness.** This factor was measured from fall 2019 to fall 2020 across 37 hospital departments using Learning and Engagement System boards as part of a high-reliability organization transformation. Pearson correlation coefficients were created for the correlations measuring the year-over-year increase or decrease in culture scores when compared to median huddle times.
- **The nuances around OT and productivity.** ODB and SCORE data from the organizations were combined at the department level. The associated time frames for the two data sets were 2022-2023. Departments more involved in patient care were the focus of the study (e.g., nursing units, procedural areas). Pearson correlation coefficients were created for these departments’ overtime (overtime hours as a percentage of total hours worked) and productivity measures (total hours worked per each department’s unit of service) against individual SCORE questions, as well as SCORE domains. The correlations were then reviewed for themes.
- **The impact of team burnout on patient mortality.** This factor was measured at the facility level among hospitals with data gathered from Jan. 1, 2016, through 2020. Pearson correlation coefficients were created to evaluate the correlations between mortality and the cultural measurements of safety climate and personal burnout.



290 E. John Carpenter Freeway
Irving, TX 75062
972.830.0000
Vizientinc.com

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