Rapid workplace culture adaption using Goal-organized simulation exercises; an example from healthcare

Lia A. DiBello, David M. Lehmann
ACSI Labs Inc. San Diego CA
ldibello@futureviewplatform.com

ABSTRACT
Changes in business have caused major disruptions in how people do what is essentially the same job, often requiring them to integrate emerging technologies as tools in order to do their work . As a consequence, it's likely impossible to anticipate future training in any detail. This is a story about how we engaged a cross- functional, inter-organizational team to meet specific challenges facing their industry using a simulation excercise that started with a goal they must meet without specifying the skills or corporate culture needed to achieve it. In this case the organizations were health care providers and an insurance company trying to improve health outcomes for Medicaid patients. Knowledge elicitation and cognitive interviews were used with Subject Matter experts to help define the goal and a working model of expertise which guided the scoring scheme. The resulting exercise helped transform two failing organizations but also indicated a direction for quickly adapting a workforce when there are major shifts in the required outcomes.

KEYWORDS
Knowledge Elicitation, simulations, cognitive transformation, healthcare

INTRODUCTION

Changes in business have caused major disruptions in how people do what is essentially the same job, often requiring them to integrate emerging technologies as tools in order to do their work. As a consequence, it's likely impossible to anticipate ahead of time what skills will be needed for a specific role in an organization or to plan future training in any detail. This is a story about how we engaged a cross- functional, inter-organizational team to meet specific challenges facing their industry, health care for Medicaid patients. Rather than begin with the "capabilities" we challenged the team to start with the goal, and work backwards from that goal to develop the collaborative approach needed to achieve it, using a simulation exercise. We used cognitive analysis to define the problem and the solution from an expert's perspective, but not to define the means for getting there. We used an economic analysis of their position in the marketplace to help define reasonable financial and performance goals.

What emerged was a targeted method of changing the culture of the organizations, re-skilling the teams for the challenge before them and at the same time road-testing the relevance of both for the problem at hand. The collective team ended up developing an unanticipated approach, a new culture of practice (e.g., in the sense of Durati 1997 or Schatzki, 1996; 2002) and set of skills in response to this challenge. In this paper we describe how the simulation was developed, what happened, and implications for both reskilling and passing on expertise.

The companies

The companies were a not-for-profit health care insurance management organization and their "customers", i.e., clinics in poor communities. The patients were low-income or welfare recipients who were now "members" of the non-profit's health plan. We will call this non-profit MPH. Simply put, the primary mission of MPH is to eliminate the well-known "outcome disparities" between the privately insured and those who depend on Medicaid or other forms of public assistance. It was well known at the time that poorer patients have worse prognoses for the same conditions; impoverished or socioeconomically disadvantaged persons tend to get sicker and suffer poorer overall outcomes than privately insured people of the same age or with the same illnesses. (Adler, N. E., Glymour, M. M., & Fielding, J. (2016). Adler &Newman 2002; Braveman, P., Egerter, S., & Williams, D. R.

(2021).; Bambra, C., Riordan, R., Ford, J., & Matthews, F. (2020) Solar, O., & Irwin, A. (2010). Woolf & Braverman 2011; WHO report 2008). The purpose of the "membership" in MPH was to provide these patients with an insurance model closer to that enjoyed by private insured patients. We were brought in when MPH's plan to execute this strategy failed with the clinics.

It turned out competing goals were at play. The staff at the two kinds of organizations also had a different mental model of what would contribute to "wellness". Although, the common aim between MPH and the clinics was to eliminate outcome disparities; the insurer also wished to keep the costs per patient down while the clinics struggled to stay afloat financially. They saw MPH as a provider with unlimited financial resources and assumed the problems of the patients could be solved with more services; a "more=more" assumption. They were also concerned with staying open for these patients. As a result, the clinic employees had become skilled at targeting patients for whom they could claim the highest reimbursements and were focused on cash flow to solve their operating cost problems. In contrast, the major skill set of the insurance company's employees was cost auditing and an ostensible0 commitment to a preventive care model. Being insurance specialists, they knew that preventive care could cost less and produce very good patient outcomes. However, their approach assumed that patients could easily make themselves available for screenings and preventive care visits.

That said, MPH's "membership" model enjoyed considerable success in reducing health outcome disparities among some segments of patients (pregnant women and children) through a commitment to aggressive preventive care and socializing the benefits of wellness care among mothers. The difficulty was getting the same results with other kinds of patient populations (e.g., young men, elderly, and chronically ill but not acutely ill patients). MPH contacted us after reading an article about how we helped for-profit organizations break out of entrenched practices (Bower 2004). They were hoping our methods could apply to a non-profit health care organization as well.

Using interviews, examining key artifacts, and conducting an economic study of the state of healthcare and outcome statistics, we landed on an analysis of the "whole" problem, including the clinic's/provider's role in the care of the Medicaid members. The MPH executives indicated a desire to craft a solution that worked around some of the issues with providers. They were committed to eliminating outcome disparities but believed providers (clinics) were contributing to the problems (understaffing, inconsistent records, the high rate of walk-in acute problems, the high rate of uninsured and non-paying patients.) They also believed clinics were struggling financially, which led to providers billing MPH for unneeded services. MPH believed that placing an MPH person in the clinic who could help socialize the preventive care model would fix some problems.

It was clear these MPH "helpers" were not welcome; the clinics quickly figured out that they were there to prevent overbilling or ordering unneeded services. On the other hand, MPH personnel did observe that "social issues" were indeed the cause of many patients not receiving preventative healthcare. This was not factored into MPH's original model of patient realties.

These differences were overcome using a kind of role-playing exercise in which they would solve the collective set of problems together in a simulation. MPH and the clinics participated together. The exercise was a version of a general approach our company uses called the "Strategic Rehearsal". The Strategic Rehearsal method is a unique kind of simulation exercise our team has developed over several years with dozens of companies (DiBello, 2001; DiBello Missildine & Struttman 2008; DiBello 2019). This approach allows participants to rehearse, experiment with, fail, and rework novel approaches to organizational problems while being held accountable to non-negotiable outcomes. It involves a reality analogous setting with realistic constraints and opportunities for navigating the options. The ultimate goal of the Strategic Rehearsal method is to help challenge the existing mental models participants use to approach problems by providing a platform of new leading goals and activities to help reorganize entrenched behavioral patterns.

The Strategic Rehearsal Method – like any "wargame" method – is hypothesized to capitalize upon workers' ability to implicitly learn the temporal correlations and patterns across episodes and events that are typically produced by dynamic situations in the real world (Gureckis & Love, 2019; Franco-Watkins, Rickard, & Pashler, 2019). This ability to implicitly learn dynamic patterns is at the

foundation of intuitive decision-making (Evans & Stanovich, 2013; Osman, 2014), which involves decision making by situational pattern recognition and which represents the usual mode of decision-making by individuals with expertise in a wide variety of naturalistic contexts (Klein, Kahneman & Klein, 2019; Patterson et. al 2009) such as in health care delivery systems.

Although implicit learning of temporal patterns and intuitive decision-making is considered to be robust (Stark, Scott, & Todorov, 2018; Newell & Shanks, 2014), it typically operates in situations for which the linkage between events and episodes occurs across short time spans. In a health care delivery system, as well as in other real-world (e.g., business) applications, the linkage among key variables may occur across relatively long time spans for which experiential learning would be difficult

Strategic Rehearsal's use of highly compressed time periods overcomes this constraint and optimizes this kind of experiential learning, making action and consequence links more obvious.

The MPH Strategic Rehearsal: Design and Execution

In a large event room, we built an environment which included three "practices" of various sizes, represented by Barbie doll scale clinics and a "Payer" company which could pay claims for Medicaid eligible patients. Participants were divided into three teams. The "Practice Team A" ran a "large" clinic. The "Practice Team B" ran two smaller clinics. And the "Payer Team" acted as the payer, modeled heavily after the MPH itself. The Practice Teams were made up of actual doctors and clinic staff that have MPH member patients. The Payer Team was made up of MPH staff. Each Practice Team received a file containing complete charts for all their patients , as well as financial records and a budget. These records emulated the electronic record keeping system being used at the time, (which also allowed records to be printed out). The patient demographics, histories and current medical conditions were generated by our FutureView Event Generator software. We generated over 3,000 patients, aged 6 months to 90 years with a range of typical conditions, with detailed histories going back as much as 25 years. These records were meant to emulate an electronic chronological patient history and included the results of any diagnostic tests. The demographics of the patient query database were modeled after the known demographics of the Medicaid population. Actual patient data were not used.

Timeline for each day of exercise		
Clinics	Payer	
Set up clinics, make schedules, print out needed records, obtain blank claim forms from Payroll	Set up office, access database, determine financial goals, assign member/patients to clinics. Begin to develop the preventive care model they wish clinics to use.	8am to 9am
Begin seeing patients. Seek out patients at the patient desk who do not show up. Negotiate with Payer to get some services to help patients attend appointments. Continuously pay overhead costs	Process claims, reject claims, negotiate with clinics re preventive care. Identify appropriate patients. Continuously monitor budget for all patients and each patient.	9am to 12pm (60 game periods)
Pause for lunch and deal with any additional technical support. Produce first financial reports		12pm-1pm
Continue with seeing patients and discuss any innovations for Payer for improving attendance	Process claims, reject claims, negotiate with clinics re preventive care. Identify appropriate patients.	1pm -4pm

	Continuously monitor budget for all patients and each patient.	60 game periods
Analyze results and prepare presentations	Analyze results and prepare presentations	4:00-4:30
Present results.	Present results	4:30-5:00

In this toy environment the teams could "wargame" several months in the life of the clinics and their patients, trying various approaches to achieving their goals, with "game periods" of 10 minutes representing a week in the life of a healthcare system. Each team had 8 hours of "gaming" each day and data analysis time to devise and execute their solutions at the beginning and end of each day the exercise was conducted. Each clinic had the medical records in electronic and paper form for all the patients ever seen by each clinic (but not shared between clinics) and the ability to generate "tickler" reports for each game period. These tickler schedules were based on past history only; i.e., patients due to be seen based on the timing and findings of their last visit (e.g., came in for headaches; finding was high blood pressure, 3 months medication prescribed). The "Payer" had access to a claims database with the same patients and same history. In addition, their version of the database also had a multi-year history for every patient who was currently or ever had been a subscriber, across providers (over 3000 patients). The Payer team's laptops were connected to that comprehensive database. All teams had the ability to run queries on their databases and print various reports.
The last element of the game was the "patient desk". Here professional actors had scripts, personal histories and paper dolls representing patients. When a clinic or Payer contacted a patient, they went to the patient desk, and an actor played the role of a patient in any interaction regarding getting the patient to visit a doctor, address an issue or even pay a bill.

Results

After playing through twice, the teams were able to meet their goals both in terms of the financial benefits to clinics and insurers while at the same time eliminated the outcome disparities among patients.

Figures 1. and 2. show the overall revenue performance for practices and the cost savings for payers during the exercise. In general, on Day 1, costs were much higher with fewer patients being seen. Most important, on Day 1, the cost for preventable measures for patients covered by other plans was more than 3 times the cost for preventive care for the MPH members alone. On Day 2, costs for preventable claims were negligible for MPH members and for patients covered by other plans. In other words, the preventive measures that the MPH put into place for their patients had a spill over beneficial effect for all patients in the practices, even if they were not MPH members. The difference in income to the practices as a result of stepping up preventive visits was more than 100%.

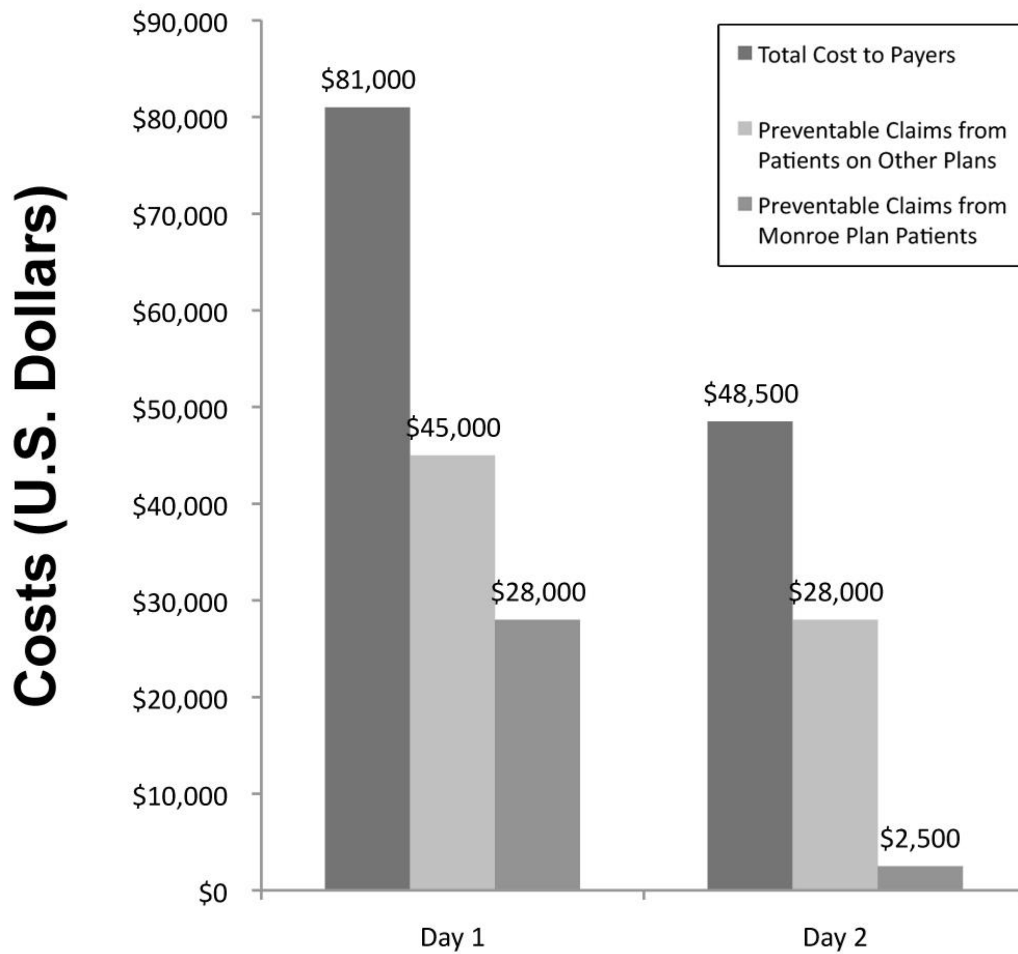

Figure 1. Simulated costs for Day 1 and Day 2 of the Strategic Rehearsal intervention, broken down as total costs to payers, and preventable claims from MPH patients and from patients covered under other plans.

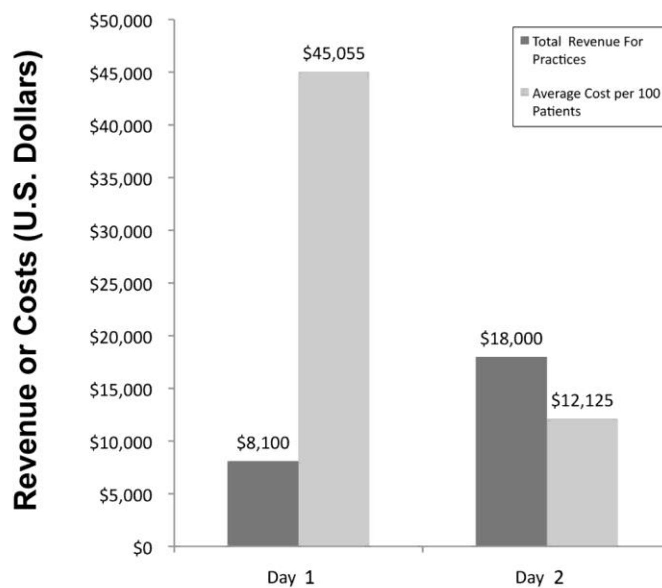

Figure 2. Revenue for practices, and average cost per 100 patients, for Day 1 and Day 2 of the Strategic Rehearsal

In sum, on Day 2, the teams discovered three things:

1. Working with the payer to analyze claims histories, practices could identify patients in their practices who were at risk for becoming sicker, based on all medical visits, including emergency room visits and visits to practices other than theirs. The Payer and practices together identified a number of claim-type clusters that could indicate that a patient might be at risk. Using queries, the teams worked to generate a list of the at-risk patients and contacted them. If the patients had "social" or "clinical" issues preventing a visit, the practice worked with the payer to overcome these or arrange a home visit. Such increased identification of at-risk patients represents an increase in patient quality care. Participants felt that they learned not only the "skill" to do queries, but also learned to formulate the right questions to ask of the data.

2. Following up on at-risk patients and patients identified by the query database filled the examining rooms to capacity and helped the practices meet their revenue goals without ordering unnecessary tests and avoiding most of the reimbursement disputes with the payer. The providers learned that recurring monthly revenue from preventive care was not only lucrative, but predictable. As a result, they focused on devising and implementing innovations to improve attendance.

3. Patients needing preventive care the most were now not only identified in a more comprehensive manner, but innovations were mobilized to overcome the traditional barriers to preventive care (e.g., transportation services, home visits, childcare and follow up calls).

CONCLUSION

There are many ways to interpret these results in terms of learning theory. However, the point of this article is to point out the potential for quickly preparing a workforce to adapt to changes in the workplace, or even changes in the purpose of the work, even when this involves new skills with technology. The exercise developed capabilities in the participants that addressed challenges they were facing in their real work and gave them practice at refining them.

Our team has used this method with dozens of companies, but usually to help the leadership wargame strategy for growing their company or overcoming a constraint in the marketplace or changes in access to capital (economic or political trends). In this example, we also achieved a fast way to change the culture of work and reskill a workforce in two kinds of organizations.

Many organizations are undergoing dramatic changes in technology (such as electronic patient records, in this case). These technologies offer opportunities for being more effective, but also require a different approach, not only in the technology itself but also in working effectively with customers, partners, and suppliers. In this case, rehearsing the new reality helped develop staff, but also revealed some clever ways that people make the best use of new tools. For example, we would not have thought of clinic-designed queries to identify at risk patients based on hands-on experience with patients. The insurance company had not thought of this either but were very pleased with the results.

Finally, we think an important feature of this exercise is that we got agreement from the collective management teams to allow the participants to implement the solution they devised if the exercise results proved it might work in real life. As a result, some form of all the innovations were implemented among real patients. In the end, MPH grew over 3X in subsequent years after this brief period of struggling.

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