SUSTAINABILITY AND THE SECOND LAW OF THERMODYNAMICS

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INTRODUCTION

There is significant debate in the scientific community whether the second law of thermodynamics—that energy tends to disperse rather than remain concentrated in a contained space—applies to the humanities. This paper will not answer that debate here, but will use the second law's underlying principles to illustrate the challenges of achieving and sustaining transformational change in health centers and clinics that serve the poor, the uninsured, and the underinsured in New York City—organizations with which Primary Care Development Corporation (PCDC) works.

Over the past six years, PCDC has worked with more than 70 teams from 21 New York City organizations to create patient-focused health care centers where a visit to the doctor takes no more than an hour and patients can get an appointment with their own primary care provider within 24 hours. Building on the Institute for Healthcare Improvement's (IHI) Breakthrough Series Model to achieve change, PCDC has created a unique set of learning collaboratives, two of which address the twin issues of delays in access to care and long visit cycle time. The results of these two initiatives are the focus of this paper.

As we conduct collaborative programs more frequently in response to growing demand, we have witnessed impressive results while learning much about the challenges of making *transformational change*. Change, even when it consists of undeniable improvement, is extraordinarily difficult to implement and sustain even when everyone thinks it is

needed and is open to its possibilities. A successful implementation model needs to be based on clear, simple, and effective principles to guide the journey of change. A successful model needs to include strategies for coping with the inevitable challenges and resistance on the road to a transformed and highly effective system of health care.

Our collaborative program data suggest that PCDC has honed an effective model for helping organizations to implement change and reach their initial goals (i.e., appointment access within 24 hours and visit cycle time of less than one hour). We can confidently reproduce our success across highly varied settings in collaborative after collaborative. It is an altogether different challenge, however, to help organizations sustain the changed processes and their benefits, not to mention further spread the changes throughout the organization. Frequently, we have encountered the myth of the self-maintaining innovation—the belief that gains achieved by the end of a collaborative can be sustained without further effort. We have learned that the improvement process is not a project, but a part of a lifetime obsession that requires continual organizational focus, resources, and course corrections. We have learned that a collaborative can be a one-of-a-kind opportunity to transform leadership as it observes an organization change process unfold under its own sponsorship. We have failed, however, to teach the organizations we work with about these valuable insights. This is our next frontier.

In this paper, I share the story of PCDC's journey to accomplish transformational change in service to patients. To do this I focus on our most recent understandings about the sustainability of the new models developed by teams for providing timely access and care to patients.

THE EARLY YEARS: EXPANDING CAPACITY THROUGH PHYSICAL INFRASTRUCTURE

PCDC was founded in 1994 and has worked closely with city, state and federal governments as well as private funding sources—through its Capital Access Program—to provide construction loans and technical assistance to health care providers to modernize, expand, or build medical facilities in communities that lack critically needed primary care services. This program aims at building a sustainable, permanent, community-based infrastructure of affordable, quality primary care services in the most underserved communities of the city. To date, PCDC has financed the construction or renovation of 31 primary care centers in the five boroughs of New York City. At a total investment of $108 million, these centers collectively now have the capacity to serve over 300,000 people.

PCDC-funded centers fall into two main categories: (1) freestanding and hospital-sponsored community-based centers providing a broad array of primary care and specialty services to the general population who live and work around the center; and (2) special needs providers who target their services to a particular population subgroup, e.g., the developmentally disabled, the frail elderly, or persons with HIV/AIDS, who are drawn to the centers from across the city. The centers themselves differ widely in size:

- Physically, they range from under 1,000 square feet to over 50,000 square feet.
- The volume of services they provide ranges from 3,000 to 160,000 visits annually, although 60 percent of the PCDC-funded centers have the capacity to deliver between 25,000 and 50,000 visits yearly.

Their organizational structures also vary, ranging from single-center freestanding organizations and hospital-based clinics to multicenter networks whose scope of service ranges from basic primary care to the full complement of ancillary and specialty services found in academic medical centers. They serve primarily low-income, uninsured, underinsured, and Medicaid-eligible New Yorkers and their patients tend to be predominantly ethnic minorities—notably of African-American, Hispanic, and Asian descent—and women and children.

THE NEXT PHASE: EXPANDING CAPACITY THROUGH OPERATIONS PERFORMANCE IMPROVEMENT

After the first set of new and expanded health centers became operational, their leaders and PCDC recognized that although the centers were essential for increasing primary care capacity, there was a need to ensure that new facility capacity actually translated into more patient visits and a higher level of care. And to do this, it became imperative to scrutinize work processes—the engineering of work—to ensure optimal operations and capacity to see patients. It was from these observations and ensuing dialogue that the Operations Success Programs were born.

Working with experts from around the country, PCDC developed a comprehensive strategy for building the operational and programmatic capacity as well as the effectiveness of ambulatory care centers, the underpinning of which was a series of technical assistance programs that focused on performance improvement. The aim was to bolster performance by creating a patient-focused system of care that would decrease delays in getting appointments, increase continuity of care, and decrease the cycle time for patient visits. Together, these improvements would increase productivity and the quality

of care provided to patients, which in turn would impact substantially on the health of the communities served by these health centers. These were the results we were seeking.

The PCDC learning collaborative structure was modeled after IHI's Breakthrough Series Model and includes preparatory work, learning sessions, and action periods. To produce optimal results, we added three elements to our model: facility selection, leadership conference, and team member selection. Each PCDC collaborative training program generally accommodates seven to 15 teams from different organizations. Each team consists of five to six frontline individuals largely from specific clinical areas (e.g., medicine, pediatrics, women's health, orthopedics).

Over the past six years, our Operations Success Programs have evolved from an individual health center working with a single redesign expert trainer to a learning collaboratives methodology—with active coaching—in four different areas: redesigning the patient visit, advanced access patient scheduling, marketing and customer service, and revenue maximization. Most recently, using the same change methodology, we have developed a clinical collaborative to address disparities experienced by low-income communities in pediatric asthma and prenatal care outcomes. This program was developed in partnership with a long-time client, a major provider of primary care in Brooklyn.

THE LEARNING COLLABORATIVE: POWER FOR MAKING CHANGE

What is truly remarkable about the learning collaborative is that time after time it produces consistent results across facility types and clinical practice areas. The redesigning the patient visit program is our oldest improvement program, developed originally by Roger Coleman, a leader in health care process redesign. Since the inception of the redesign program, we have worked with 33 teams from nine organizations. (Many of the organizations are multihospital networks or multihealth center systems and they field multiple teams.) Participating organizations have seen cycle times reduced by 50 percent or better, demonstrating that a one-hour cycle time is completely achievable. In the four-year period from 1998 through 2002, 18 participating teams reduced cycle time by half, from an average of 99 minutes to an average of 50 minutes.

Advanced access patient scheduling, developed by Mark Murray and Catherine Tantau, is the most recent Operations Success Program, first offered in 2001. This learning collaborative training program teaches teams to reengineer their appointment scheduling and supporting procedures to provide patients with a convenient appointment time with their own primary care provider. Often patients receive an appointment for the same day on which they call—even for nonurgent care. The program offers another important

benefit—continuity of care—by which patients see their regular clinical provider. In the first round of the collaborative, five teams reduced delays for all appointments from an average of 29 days to an average of 4 days, a reduction of 85 percent.

Reengineering as defined by Michael Hammer in his book, *The Reengineering Revolution,* is the core philosophy of our Operations Success Programs collaboratives. As Hammer states, reengineering is "the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in performance." Poor results typically stem from faulty processes, not from individuals' inadequacies. Our reengineering strategy focuses on redesigning both patient throughput—and the processes that underlie it—and provider paneling and patient scheduling as the keys to enhancing health care access, provider and customer satisfaction, and operating efficiency. What emerges is the delivery of patient-centered care.

Patients express satisfaction when these changes are made and they are able to access their primary care provider today instead of next week or next month and get in and out in less than one hour instead of the typical two, three, or four hours. For staff, the days run more smoothly and less chaotically and they are able to work at their highest level. People get to go to lunch and clinic ends on time. Ultimately, clinicians are better supported to do their work and are able to focus on building relationships with their patients.

PCDC's remaining two Operations Success collaborative training programs provide successful "wraparounds" to the above access programs. Our marketing and customer service collaborative teaches teams to use market segmentation to develop marketing strategies and new programs to meet community need. The corollary component of customer service teaches the importance of internal marketing and service quality for satisfying patients. The revenue maximization (revmax) collaborative teaches teams how to reengineer revenue processes and foster teamwork among financial and operations staff to minimize repetition and ethically maximize revenue. We have run the revmax collaborative twice in two small test collaboratives of five and four teams each over the past two years with good success. In the last collaborative, the four participants (three health centers and a large hospital ambulatory care department) realized increased cash revenues of $2.4 million within the last two months of the six-month collaborative.

Generally speaking, we have learned that it is optimal for an organization first to participate in the redesigning the patient visit collaborative before participating in the advanced access patient scheduling collaborative. The scope and breadth of change

required to succeed in redesigning the patient visit makes it nearly impossible for the organization simultaneously to tackle advanced access. Although both programs are highly appealing to the health care community and produce dramatically improved outcomes for patients, they also pose the greatest challenge: How to sustain the dramatic improvements over the long run.

THE SECOND LAW OF THERMODYNAMICS AND REACHING AND SUSTAINING ORGANIZATIONAL GOALS

Collaboratives do much more than simply fix a particular operations problem. They truly transform the way people work, expand the boundaries of responsibility, and instill accountability toward patients. We consistently have found that the collaborative journey has a remarkable impact on the motivation of the generally unsung heroes on the front lines. I am continually amazed at how charged up team members become over the course of a learning collaborative, how willingly they assume substantially more work, how they rise to overcome formidable challenges, how they reinvigorate themselves after moments of despair, and how they so unselfishly work as a team for the good of the patient. Many begin the journey steeped in skepticism if not cynicism, brandishing outright contempt for the trainers' messages of hope and possibilities, dragging their feet through the first few hours of the first learning session. But by the final learning session, they have become improvement converts, obsessed with improvement and sharing their victories with energy and passion. It is very powerful to hear the team members talk at the end of the collaborative program about what the collaborative learning experience has meant to them personally and professionally.

The power of the collaborative to unleash the zeal of everyday workers time after time does not change. And for the organizational leaders to experience and understand the transformational opportunity of the change process through the eyes of their own staff offers a view of possibilities far beyond their current experience of the possible. Our job is to keep them focused on that bright horizon. We have found that the quality of leadership involvement greatly influences how successful the collaborative team will be over the long run. Even teams with weak organizational leadership frequently reach their goals. Without consistent, engaged leadership, however, few teams can sustain the gain. Despite the well-documented effectiveness of the collaborative programs, without stellar organizational leadership the second law of thermodynamics rules supreme: Everything gets worse because the cold gets warm and the warm gets cold!

Significant gains will always dissipate without some additional force, pressure, and/or work to sustain them, and that extra force is required for as long as we want the

benefits of change maintained. Reaching the goal is often easier than staying there. We need to translate this simple statement into a principle for action. Reaching the goal requires intense focus, dedicated resources, keen leadership, and passionate participants. Maintaining the outcomes requires no less a commitment. Taken a step further, patient-centered care is not the natural order of the world. To get there and keep all the molecules (staff) together requires a significant expenditure of energy. There is a huge amount of energy in a patient-centered staff, but without some external force (the sides of a flask and a rubber stopper = leadership), nature takes over, the molecules escape, and the patient-centered staff dissipate, no longer working together. Being the force that keeps it together becomes the crucial work of leadership.

THE EVIDENCE ON SUSTAINABILITY: IT'S NOT WHERE YOU START, IT'S WHERE YOU FINISH. BUT LET'S NOT GO BACK TO WHERE WE STARTED!

The evidence on long-term sustainability is weak. Data collection in collaboratives often stops shortly after their completion. We have observed a disconnect that occurs when we claim victory and walk away at the end of a collaborative, withdraw focus from the initiative, and allow nature to run its course. The change does not necessarily stick. Is it reasonable to expect that we can work with teams to make breakthrough change—change that requires a complete overhaul of existing processes—and then invest only minimal effort once the collaborative ends? The philosophy of many collaborative programs, including our own, is to draw a line in the sand at the final learning session and leave participating organizations to their own devices. Our evidence suggests, however, that this approach needs to be changed if we want to increase the likelihood that the gains made are not only maintained but also expanded. The confounding factor is that leaders often are tempted to draw the same line in the sand at the end of the collaborative.

Are there successful models for this extension of involvement without creating dependency? Let's examine Weight Watchers, recognized as the most effective weight-loss program and, interestingly enough, a Breakthrough Series Model. Eat less, move more, and drink eight glasses of water every day. That's all that's required. Simple principles. So easy to understand. So hard to do.

The principles underlying redesigning the patient visit and advanced access patient scheduling are equally simple and easy to understand yet so hard to do.

Redesign

- Don't move the patient
- Increase clinician support
- Create broad work roles
- Organize care teams
- Communicate directly
- Start all visits on time
- Exploit technology
- Prepare for the expected
- Get all the tools you need
- Eliminate needless work

Advanced Access

- Match capacity and demand
- Reduce backlog
- Decrease appointment types
- Expand visit intervals
- Maximize visit efficiency

Once you reach your Weight Watchers goal you become a lifetime member and go into the maintenance phase. But there is still some level of "outside" intervention to sustain focus and reinforce your newly accrued wisdom, your recent but fragile victory. Is anything less needed by our collaborative participants as they emerge from that final learning session flush with the victory of "wait loss"?

Perhaps the problem comes from thinking about a collaborative as a framework for learning a new method instead of as a process engaged in by a community of participants for making lifelong behavioral change. To transform the often sad patient experience into one that is immensely satisfying to patients and health care workers alike, we have to permanently change our individual and collective behavior concerning how we execute our work, i.e., the way we treat patients, the engineering of our work, our capacity to work together in teams, and our ability to use technology. We see that problems occur when an organization's leadership views a collaborative journey as it would a consulting engagement: Give us solutions that require little effort or time on our part. Leaders easily can assume the collaborative journey to be a method for "teaching them to fish" that imposes a method or discipline the organization has lost over time or never developed. We prepare the organization as best we can for sustained gains, but once we go our separate ways, it can flounder or flourish depending on the leadership's understanding of

these concepts. It is not clear whether most leaders ever learn through their participation in the collaborative how to initiate and sustain change, although all the salient lessons are transparent and obvious during the collaborative journey.

Many ask why it takes so much to achieve a 60-minute cycle time for a visit with a primary care provider on the day patients call. In response, I say that there are only three things you need to do to lose weight: eat less, move more, and drink at least eight glasses of water a day. Despite the fact that these three change factors are so simple, more than 60 percent of adult Americans are considered to be overweight and obesity is becoming an epidemic. Change efforts require a lot more than will to make it happen. They require an enormous amount of focus and resolve to develop a new and permanent habit, a new level of performance. Yet we continue to think that breakthrough improvement in six to nine months is too long.

This impatience is certainly understandable given the state of our health care delivery system and our patients' responses to it, but it is out of synch with the reality of the undertaking that is required. Most would agree that it has taken years for the work processes and systems we use to provide a patient visit to deteriorate so badly that visits consistently take two hours or more after patients have waited for weeks for the appointment. The demand is to achieve one-hour cycle times overnight, but to achieve this, we must change how everyone works and how they work together and expect everyone to be accountable for their work and the results. These are radically new expectations for health care organizations. So why doesn't it work in a flash? Part of the problem is that investment in training is often minimal, with real attention and focus lasting only through the end of the formal collaborative program. The new patient care teams must operate consistently, like champion relay-race runners: smooth execution, perfect handoffs, no batons dropped. But champion athletes practice continually to achieve and maintain this level of performance. Why do we think that our health care workers can do it without similar levels of commitment to practice to achieve the best results?

The success of collaborative program participants one year or five years down the road is sketchy at best. If, however, we change our perspective on the improvement process from one that is severely time limited to one that emphasizes a lifelong process, we may be able to reinvent the collaborative framework to help organizations not only maintain their "wait loss," but to rapidly expand improved processes throughout their organizations and inject into their cultures a passion for improvement.

We have not prepared our clients to make a lifelong commitment to a collaborative program. We have not prepared our clients for an enduring attention span and intense focus on transforming the organization so there is no slippage backward into old habits, old perspectives, or old processes. To engage in maintenance is not an admission of failure but rather a necessary investment to prevent the slow unwinding of hard-won gains. I don't suggest a relationship of ongoing dependence but rather a framework for the periodic tune-up. To mix my metaphors, if the organization alone can't keep the heat under the frying pan, an external flame every now and then is certainly a viable tactic.

CHALLENGES IN IMPLEMENTATION: WHERE DO WE GO NOW?

We understand clearly now that the gains achieved through the collaborative process are fragile and almost certain to unravel without consistent focus and attention because the *transformation* of the organization has not been completed. We also recognize that leadership must focus on anchoring the new culture in the total organization. How does this happen?

Two essential actions on the part of leadership are necessary. First, communicating often and clearly to everyone about the new way of doing things and the new way of measuring results helps to create clarity concerning what is important to the organization, what it is passionate about. This empowers and energizes everyone in the organization and helps to ensure alignment around expectations and results. When communication is combined with clear, consistent systems for defining, measuring, and sharing the most important results, the foundation for creating a strong organizational culture is being put into place. But this is not enough.

In his book, *Obsessions of the Extraordinary Executive,* Patrick Lencioni states, ". . .[organizational] clarity provides for power like nothing else can. It establishes a foundation for communication, hiring, training, promotion, and decision making, and serves as the basis for accountability in an organization, which is a requirement for long-term success." (p. 154) Communication about organizational purpose is necessary but not sufficient without ensuring that the *human systems* of the organization are aligned to foster and reinforce the new culture and its values. Without this, the new passionate "converts" tend to leave the organization over time to be replaced by folks steeped in old ways. The new converts are forever changed. Now they don't just suspect that the way they are working is not serving the patient and is not efficient, they know it. And they can never fully adjust to a system that is not maintaining the new focus, the new culture. They go in search of the new in another organization. So the system looks like it has reverted to the

old ways when it has really lost its most powerful drivers of change: those who have taken the collaborative journey.

Ensuring the alignment of the human systems means that the processes for hiring, assessing performance, providing rewards and recognition, and even for employee dismissal need to be consistent with and shaped by these new values and goals. Organizational clarity supports this alignment. But as Lencioni warns us, ". . .like so many other aspects of success, organizational health is simple in theory but difficult to put into practice. It requires extraordinary levels of commitment, courage and consistency."

For PCDC, building on the success of the current collaborative programs by adding elements that will help to support and sustain transformational change is the agenda for the future. As we have begun to think about the needs we have identified, we see two areas that we will develop and begin to test in the near future. The first is to address the fact that organizational leadership generally is not prepared to make a lifetime commitment when signing up for a collaborative program. Although the teams actually do the work that creates the successful changes as they redesign the patient visit and the scheduling system, they soon discover the limits of their authority when it comes to engaging other departments and areas of the organization in their work. How do you get the medical records department to change its procedures to ensure that the charts will be ready on time for a patient who calls in at 10 a.m. and is given a 2 p.m. appointment on that same day? How can you successfully redesign the registration process when you have no authority over that department? How can you make the lab or the pharmacy more responsive? This is when it becomes very clear that if the entire organization is not aligned to produce the new results, the teams on their own are very unlikely to find the door in the wall. Leadership provides the opening.

To help prepare leadership more completely for the transformational change journey, of which the collaborative program is just the beginning, we have added a leadership conference to the beginning of the program. We also have designed special sessions within the learning sessions for the leaders as the collaborative progresses. Although this has helped many of the organizational leaders, we believe we could be more successful and plan to develop a track specifically designed for leaders and their role in the change journey. Just as we prepare and train team members, we will shape this program to train leaders more completely.

Another idea in development with our partner, Coleman Associates, is more radical and involves rethinking the entire structure of the learning collaborative program

with an eye to creating an initial critical mass of action and change that will move the organization rapidly to the tipping point for transformational change. We have learned that although making change stick takes time, introducing the change concepts and redesigning the system can be a faster process. We also have learned that although working in the initial target clinical area can be very successful, expanding the change to other clinical areas and especially to supporting areas such as the lab, radiology, and pharmacy units can stop the process in its tracks. Finally, we have learned that each of these problems can be overcome to some degree over time with strong leadership. But even a strong, committed, and focused leader can find the improvement process to be quite a climb, and thus risk slipping back.

Our new thinking involves an approach that would address a much larger part of the organization (in some cases, the entire organization) and would create change more quickly in rapidly progressive waves of specific training and action steps. These steps would address core areas of operations and systems crucial to a well-functioning health care organization. The initial change introduction period would be followed by a longer period of active coaching and maintenance checkups to ensure that the changes made are made permanently.

These new approaches hold much promise, but as with all great ideas, finding partners who share the excitement for this new vision can be challenging. For example, there is the client who wants to finish quickly. Even when we can successfully engage clients and convert them to the understanding that the process will not only take time but is never finished, there is still the issue of financing the work. Although maintenance checks do not have to cost a great deal of money, the organizations with which we work have to value the importance of the investment and be in a position to afford it. Our clients are largely centers that provide care to the poor. Therefore, continuing relationships with the visionary partners in corporate and private philanthropy as well as government who have provided a large measure of support for the work we have done are essential to our ability to continue.

WAIT WATCHERS: STAYING ON THE SCALE

This paper opened with comments that have been made over the past year in conversations with some of my health care colleagues. I had never been able to respond to my satisfaction to any of these comments or viewpoints until the day that I related them to my own "unsuccessful" personal improvement efforts focused on weight loss. I say unsuccessful not because I failed to reach my goal but because having done that, I ended

up back where I started. My struggles with achieving weight loss and sustaining it are no different from the "wait loss" efforts of the health centers and clinics with which we work.

To my disappointed ambulatory care director, I now totally sympathize with your frustration. Despite the fact that I fully knew better, I just walked away from the program and figured my weight loss would just stick, or maybe I'd gain a few pounds back but never the entire amount I had lost. To my successful CEO, I say that I don't know how the gains could be lost so easily, but I do know that I saw my waistline grow and I did not stop the reversal.

I think I actually have an answer for my health policy colleague. No process can ever be 100 percent foolproof and no process can sustain itself unless we work to keep it in place. I stopped putting the processes I learned into action. I knew my results were slipping. Without monitoring and correction of distortions, there is small hope of maintaining a breakthrough improvement. We simply cannot rely on a new process to maintain optimal performance without focus and attention.

We at PCDC are inspired on a daily basis by the teams that we work with and the patients that they serve. We are full of hope that the work we have been doing for the past six years can be done better and better and we are committed to making this happen.

Let's work together to stay on the scale and maintain our wait loss.