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Lean Thinking in Government: The State of Iowa

Government agencies throughout Iowa are applying the kaizen event methodology and lean principals to streamline the workflow and find permanent solutions to chronic problems.

By David Drickhamer

Gray skies and a wet, late winter snowfall marked the low point of the week for the pharmacy kaizen event team at the Iowa Veterans Home (IVH) in Marshalltown, Iowa (ivh.iowa.gov). For three days they had been sequestered in a windowless room in the basement of Assembly Hall, a former chapel and theater circa 1902. Today it's mostly used as a meeting space. The team included a doctor, nurses, pharmacists, pharmacy technicians, and an outside facilitator, as well as representatives from accounting, facilities, regulatory compliance, and state government.

They knew “the trough” was coming. They’d been warned on the first day during the introduction to the methods they would use to analyze and design a new process for how the pharmacy fulfills orders. They would spend the next four and a half days analyzing the entire process from how orders are submitted to how pills are delivered to each unit on the med carts. By Wednesday or Thursday, they’d been told, emotions would run high, patience would wear thin, arms would cross, and progress would grind to a halt. That’s exactly what happened. This article will describe how they powered through the trough, and how government agencies throughout the State of Iowa are deploying the kaizen event methodology.

The power of the kaizen event method for streamlining and designing a more optimal workflow is that at the end of the week the new process has been designed, the implementation phase has begun, and the improvements can be estimated or measured. The time-wasting part of the typical change initiative that drags on for weeks and months -- analyzing the problem, identifying root causes, developing and implementing solutions -- is condensed into a very short time span. It’s no wonder that the

State of Iowa

- Established 1846
- 56,000+ square miles
- 71,665 miles of streams and rivers
- 3 million people

State Government

- \$13 billion budget
- \$1 billion payroll
- Over 700 individual revenue streams
- 30 executive branch agencies
- 20,000 executive branch employees
- 3 union contracts cover two-thirds of all employees
- Governor Chet Culver.

natural anxiety and resistance to any change in how people do their jobs would be condensed as well.

Of course there are always homework items that cannot be resolved during the initial week. These are addressed at 30-, 60- and 90-day review meetings. In the case of the pharmacy order fulfillment event, the new process wouldn't be fully rolled out until the beginning of July; three months after the kaizen event took place in late March. It took that much time to redesign the workflow in the pharmacy itself, to train nurses, aids and others touched by the process, and to get everyone to buy into the new way of doing things. Some of the steps and procedures that were eliminated had been in place for years, even decades.

At a Glance: Iowa Veterans Home

- Iowa Veterans Home (IVH) in Marshalltown accepts its first resident on Dec. 1, 1887
- Today, with over 700 beds, IVH is the third largest State Veteran's Home in the United States.
- The facility offers nursing, medical, rehabilitative care, and mental health services. It operates its own on-site pharmacy. Doctors are available 24 hours a day, seven days a week.

“One thing we do very well here,” says Commandant Daniel Steen, who heads up the facility, “every time there is a problem, we find a system to fix that one problem. Imagine the number of times over the years that there might have been a problem getting a prescription from the doctors’ prescription sheets to a bottle to the nurse putting the pill in someone’s mouth. We’ve developed systems and fail-safes to eliminate everything that

has ever gone wrong.”

The problem with such rules and their enforcement, he says, is that they don't always take into consideration the needs of the residents. Compounding the problem, especially at a facility like the Iowa Veterans Home with multiple care wings and buildings, such fixes can evolve independently in different areas. This makes it more difficult for people -- like the certified aids who help dispense medications to IVH residents -- to move from one building to another without having to learn a different process, which increases the opportunities for error.

“One of the things that I like about the kaizen process is how it spends a lot of time on value added. The team asks, ‘What is the value of this step? Is this something that we really need to do?’ ” Steen adds.

Taking people away from their regular job for a week requires a major commitment. But Steen compares it to having two standing committees and a study group that meets once a month to work on a problem, sometimes for years, without ever finding a solution. Or the high cost of having outside consultants come in, interviewing people, looking at everything that you are doing and putting their solution into a fancy report that ends up sitting on a shelf.

“I wish I'd known about this process 30 years ago,” he says.

Led by skilled facilitators, and bound together by their common concern for the residents, the kaizen pharmacy team worked their way out of the trough. First, they separated into smaller groups to work out solutions within the parameters established during the scoping discussions

prior to the event. The whole team then documented the agreed upon process changes with sticky notes and red arrows affixed to a mural-sized sheet of paper stretching around the room. They eliminated steps that added time and effort but didn't reduce the opportunity for errors or that didn't serve residents' needs. The new process, which fully unfolded over the coming months, trimmed the number of steps from 124 to 91, cutting delays and handoffs by 69%.

A New Definition of the Customer

Everything at the Iowa Veterans Home starts and ends with the residents. The facility houses over 700 U.S. military veterans and their spouses. They are cared for by a staff of 950 nurses, doctors, aids, administrators, maintenance workers and other employees who tend to the residents' needs 24 hours a day, 7 days a week, 365 days a year.

The Performance Improvement Department at IVH divides its resources between process improvement, regulatory compliance, safety management, and medical records/HIPAA compliance. A Quality Council provides a communication link between departments and seeks input from residents and staff in making care change decisions. Process Action Teams look at improvement issues for the living and working environment, as well as agency wide policies/issues and new initiatives.

For the past three years the site has been using the lean kaizen event methodology to find and implement solutions to processes that span multiple departments and functional silos. They have tackled the medication administration process, a painstaking process when all residents on each wing must receive their prescriptions within a two-hour window. They've worked on how maintenance prioritizes work orders and the admission process itself.

Unlike lean initiatives in the business world, the ultimate goal isn't to boost profit margins, although costs and revenues are a priority. For example, billing improvements stemming from the pharmacy order fulfillment event would eventually improve the prescription reimbursement rate (an important source of revenues) from the Veterans Benefits Administration. Still, the ultimate goal is to improve residents' quality of care and quality of life.

To this end IVH will break ground in March 2009 on a multi-phase, \$100-million construction project. When its complete residents will move from an institutional, hospital-like setting into a more home-like atmosphere where the day is less structured and that encourages more independent living. Reflecting a movement in the healthcare and nursing home industry toward "patient-centered care," the new facilities will feature private rooms and warmly decorated common areas with full kitchens. This transition is not unlike the move in lean factories away from efficiency focused, batch processes and toward more demand-driven products and services.

Anticipating the depth of the culture change required to take full advantage of the new environment, the most recent kaizen event at IVH focused on how these new care facilities would be managed. Prior to this design event, so they could get a feel for the new culture and work procedures, members of the team visited a nearby nursing home that has already moved to a less traditional structure. As they discovered, one of the major benefits of the new approach to resident care is the positive impact it can have on the satisfaction levels of both residents and employees. As healthcare operations around the country struggle to find qualified workers and

manage turnover, the non-traditional facility that they visited had a waiting list of people wanting to work there.

Considering the setup of the new buildings, as well as several employee and resident surveys, the Lean design team brainstormed and plotted the anticipated process changes on a two-by-two impact/difficulty matrix. They focused on the sweet spot of that matrix, on those initiatives that will require the least effort but could have the greatest impact. Not waiting for construction to be complete or even to begin, they then began to develop an implementation plan for how these changes could be implemented within a pilot area of an existing facility.

“Even though they were designing a new process, the team still experienced a trough halfway through the event,” says Ann Hogle, a management analyst in the performance improvement department, who helped facilitate the design event. “There’s just this huge gap between how we do things now in an institutional setting and the goals we were looking at in the ideal state. It was difficult to see how we were ever going to get there.”

Staffing requirements, for example, will be different with residents living in 15-unit “households” where everyone isn’t being woken up at the same time every morning to receive breakfast and their medications. The staff itself will have to be organized more by household, and less by functional job roles, requiring them to be more cross-trained. One of the innovative approaches that they are considering, Hogle notes, is involving the household residents themselves in the hiring process for open positions in their areas. In many aspects the thinking behind this resident-centered approach to veterans care mirrors changes at the state level in how government should be structured to serve all Iowans.

Iowa Veteran’s Home Kaizen Events

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|------|---------------------------|---|
| 2005 | Medication Administration | 8 hours reduced to 4 hours |
| 2006 | Maintenance Work Orders | Steps reduced by 62%; hand-offs reduced by 58% |
| | Medical Appointments | Delays reduced 79%; steps reduced 66% |
| | Admissions | Delays reduced 86%; steps reduced 62% |
| 2007 | Medication Administration | Delays reduced 69%; steps reduced 49%; decisions reduced 81%; handoffs reduced 57% |
| 2008 | Pharmacy Process | Delays reduced 68%; steps reduced 27%; decisions reduced 58%; handoffs reduced 69% |
| | Patient-Centered Care | Designed how care will be delivered in new household- based buildings. |

Sowing the Seeds of Change

The Iowa Veterans Home was one of six state government departments (out of 30) that elected to become Iowa Charter Agencies in July 2003. Part of a statewide effort to reduce bureaucracy that was introduced by then Governor Tom Vilsack, the leaders of the Iowa Charter Agencies pledged to deliver measureable performance improvements and annual cost savings in exchange for flexibility with regard to administrative rules and an exemption from state staffing limits and across-the-board budget cuts.

Previously, for example, in order to travel to an out-of-state medical conference a doctor at IVH had to follow a time-consuming cost justification process, applying and receiving approval from the state government in Des Moines. Under the Charter Agency program, such requests could be reviewed and approved on site by the Commandant.

The Charter Agency initiative, which won a government innovation award from the Kennedy School of Government at Harvard University, was one of several initiatives launched around this time for reinventing how Iowa government works. These programs provided the foundation for the discovery and adoption of lean methodologies. The local business community played a pivotal role as well.

Iowa's lean journey officially began in 2003 when they launched their first kaizen event at the Department of Natural Resources' to fix the process for reviewing and issuing air quality new source construction permits. Members of the Iowa Business Council funded the event, picking up the fees to bring in an experienced kaizen event facilitator from Guidon Performance Solutions, a TBM Consulting Group company.

At the time DNR issued around 2,000 such permits per year. Before the kaizen event took place it took an average of 62 days to get a new permit approved. Before it could begin, organizers had to overcome staff concerns that this was another tool to cut jobs—the agency made a pledge that no one would be out of work as a result of any process changes—and that it was just a business-driven effort to undermine environmental protections. In the end the kaizen team reduced the permit cycle time down to six days, without changing any regulatory or compliance requirements, and eliminated a 600-application backlog over the next six months.

“The support of our private sector partnership has been tremendous,” says Teresa Hay McMahon, performance results director for the Iowa Department of Management. “They have provided training and allowed us to send people to participate in events at their facilities. They’ve mentored us from day one. When I talk to other states they’re jealous of the guidance and support that we’ve had from the business community.

“We would not have received the funding for a full-time employee to establish the Office of Lean Enterprise within the state government if it hadn’t been for our private sector partners’ work in taking it to the legislature,” she adds. Similar results to the initial DNR project have been replicated in subsequent kaizen events (See table, “[The State of Iowa’s Lean Journey](#)”). Slowly, event by event, these efforts have overcome objections that lean tools and approaches wouldn’t work in a government setting.

| Iowa State Government Kaizen Events | Total |
|--|--------------|
| Sponsoring Department | |
| Dept of Natural Resources | 33 |
| Dept of Public Safety | 8 |
| Iowa Veterans Home | 7 |
| Dept of Cultural Affairs | 6 |
| Dept of Human Services | 5 |
| Iowa Workforce Development | 5 |
| Dept of Economic Development | 4 |
| Dept of Administrative Services, Human Resources Enterprise | 3 |
| Iowa Finance Authority | 3 |
| Alcoholic Beverages Division (Dept of Commerce) | 2 |
| Dept of Inspections & Appeals | 2 |
| Dept of Corrections | 3 |
| Dept of Management | 2 |
| Board of Medical Examiners | 2 |
| Dept of Public Health | 1 |
| Dept of Administrative Services, General Services Enterprise | 1 |
| Iowa Board of Educational Examiners | 1 |
| Iowa Communications Network | 1 |
| Iowa Civil Rights Commission | 1 |
| Iowa Dept of Revenue | 1 |
| Iowa Lottery | 1 |
| Iowa Vocational Rehab Services | 1 |
| Office of Energy Independence | 1 |
| Professional Licensing Bureau (Dept. of Commerce) | 1 |
| (Source: lean.iowa.gov/results.html, 10/17/2008) | 95 |

Communicating the impact of these improvements from the perspective of Iowa’s citizens hasn’t always been easy. Yes, many behind-the-scene steps, handoffs, and delays have been eliminated. Permits of all types are processed faster today. Arson cases are being investigated more effectively. Employee grievances are resolved quicker. All of this is well and good, but what are the hard dollar savings? When asked that question, McMahon recalls a conversation with a former director of the Department of Corrections. The year before they had conducted a kaizen event that addressed the process for managing offender’s re-entry into the community. The Department of Corrections implemented a new process that begins at the initial point of incarceration, when state personnel at the medical and classification center evaluate offenders to determine what medical treatment they may require and where they will be held. At that moment they start preparing people for the day when they will be released back into the community. Working to improve that process, according to the agency director, had fundamentally altered both the mindset of the staff as well as the offenders.

“How do you put a price tag on that? On changing the offender’s mindset?” She asks.

Ground Support

Most of the 90-plus kaizen events that the state has conducted have been facilitated by outside consultants. In 2006 the legislature approved funding to establish the Iowa Office of Lean Enterprise within the Dept. of Management. And in 2007 they hired their first full-time lean staff person, Mike Rohlf, to help coordinate efforts and lead some of the kaizen events. In the fall of 2008 they were working on adding a second full-time member to the State’s lean team.

“If you’re really going to make lean the way you do business, you have to be able to do it yourself. You can’t rely on external consultants,” says McMahon. Citing the experience of their private sector partners, she acknowledges that developing such expertise can take a fair amount of time. Kaizen event facilitators at their business partners often participate in 20 or more events before leading one on their own. “Some of those troughs can be really deep. You don’t want to go in there, get a team down in the trough and not know how to get them back out of it,” she explains.

Many people who choose to work in government do so because they want to commit themselves to a higher purpose. They may care deeply about the treatment of foster children, or want to protect the environment. Such feelings of ownership can intensify the emotions that can erupt when such services and activities are analyzed during a kaizen event.

Jim Scott, a senior consultant with Guidance Performance Solutions who facilitated the pharmacy event at the Iowa Veterans Home, has participated in many of Iowa’s most difficult events. These typically span multiple departments that may have a history of blaming one another for problems. Scott says that he lives for the troughs because that’s when the teams really start to embrace the changes that they are initiating, and he takes extra enjoyment from working with government organizations.

“It’s not just about reducing steps or cutting costs, although those are important. It’s about improving people’s lives. That offers a whole additional layer of satisfaction,” says Scott.

Sustaining the Momentum

After five years and 33 kaizen events, McMahon says that the Iowa Department of Natural Resources is furthest along in adopting a lean culture focused on eliminating waste and improving flow. Staff members have participated in multiple events. They have built up faith in the process based on a steady track record of breakthrough results, and are actively offering suggestions for future projects.

Being disciplined about the follow-up work following each event has been critical to sustaining their momentum, she notes. Program leaders have to be disciplined about scheduling the 30-, 60- and 90-day meetings to find out if things are moving forward as planned, and to establish new due dates for tasks that fall behind schedule. Another critical element to sustainment is effective sponsor support (See, “[Lean Government Resources](#).”) The sponsors, who sign a contract at the outset of each event, are responsible for removing barriers and allocating resources so that the work can get done.

During the early years, Iowa’s kaizen events tackled the most obvious pain points, obviously broken processes that were causing a lot of headaches. Today, according to McMahon, they’re prioritizing more projects based on strategic objectives. They’ve held a number of strategic policy deployment events in different agencies to identify those areas that, if improved, would have the biggest impact on agency performance over the next year or two. Like similar projects in the business world, the cross-functional teams have created organization-wide [value stream maps](#) to pinpoint bottlenecks and improvement opportunities. The ultimate goal is to touch every process in every agency of the executive branch.

“The thing that’s unique about Iowa is that we made an enterprise-wide commitment. This hasn’t been just one agency. It’s become a permanent part of our government,” says McMahon.

Other than the sheer number of completed and scheduled [kaizen](#) events, another indicator that the state’s lean efforts have entered a more mature phase is the establishment of the Lean Government Collaborative in January 2008. Rather than rely on their private sector partners to schedule and host their joint quarterly meetings, which they’d been doing since 2004, the Iowa Department of Management has now taken over this responsibility. This is not to say that those business advisors are becoming any less involved. As McMahon relates, “When it comes to lean we’ve really just stood up now, kind of like a baby that’s learning to walk and has grabbed the side of a coffee table. We’re absolute newbies at this, and still have so much to learn.”

Progress Report

Every kaizen event closes with a report out by the teams detailing the new processes that they’ve designed. One of the purposes of this meeting is to publicly recognize the efforts of the team members. It also lays the groundwork for getting buy-in from everyone else in the organization touched by the changes who wasn’t involved in the event itself.

Jim Scott, in his role as facilitator, offered some words of encouragement at the Friday report out for the pharmacy event in the crowded auditorium of the Assembly Hall. “When the individuals on this team really mapped out the process, one of the things that they said was, ‘We now have a much greater appreciation for what it really takes to get an order in and order out. It’s not as easy as it looks,’” he said.

“Change is easy to talk about. It’s difficult to do,” he continued. “Change forces us to really look at ourselves, and determine whether we’re going to accept and live with the change, or resist it.... This team has made a commitment to work out and change the processes in the pharmacy. I’m asking all of you to make the same commitment while they try to roll this out. They need your help and your support.”

Following their individual presentations, before emerging into bright blue skies and the slushy remains of the previous day’s snowfall, the pharmacy kaizen team members headed back down to the basement conference room with their colleagues to review the current and future state process maps. They answered questions and explained the changes that would have to occur with obvious pride in what they’d accomplished, knowing full well that a lot of work remained to be done.

The State of Iowa’s Lean Journey

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| June 1, 2001 | Iowa Governor Tom Vilsack signs Accountable Government Act into law | The Act institutionalizes strategic planning, annual performance planning, performance measurement, results-based budgeting, audits, and ROI measures for all government agencies. |
| January 2002 | Iowa Business Council establishes | ICIG objective to move the state |

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| | Iowa Coalition for Innovation & Growth (ICIG) | forward in economic growth. Four “Hot Teams” created. |
| September 2002 | Iowa Reinvention Partnership established between Iowa Dept. of Management and The Public Strategies Group (transformiowa.org) | State leaders make a commitment to transform how government works. |
| June 2003 | ICIG Lean “Hot Team” funds a kaizen event at the Iowa Department of Natural Resources to fix the process for issuing air quality new source construction permits | Permit time decreases from 62 months to 6 working days, backlog of 600 applications eliminated in six months |
| July 2003 | Governor Tom Vilsack establishes Charter Agencies (charter.iowa.gov) | Six state government agencies pledge to enhance efficiency, eliminate bureaucracy and improve services |
| December 2003 | ICIG Lean Hot Team becomes a private/public partnership, invites state government to join quarterly meetings to transfer continuous improvement knowledge and lean experience to the leaders of state government agencies. | Key members: Pella Corp., Rockwell Collins, Alliant Energy, EDS, Wells Fargo, John Deere & Co. |
| December 2003 | Results Iowa website launched (www.resultsiowa.org) | Website summarizes quarterly performance by department: what’s improved, what hasn’t, and what state government is doing to improve results. |
| June 2004 | Three kaizen events conducted during the 2004 fiscal year ending in June | Iowa Coalition for Innovation & Growth shows state administrators how lean tools can be applied to government processes. |
| June 2005 | 18 kaizen events conducted during the 2005 fiscal year | |
| July 2005 | Charter Agencies win Innovations in Government Award | Sponsored by the Kennedy School of Government at Harvard University, the award recognizes agency efforts to save money by reducing expenditure and increasing revenues in exchange for more flexibility and authority. |
| August 2005 | Iowa Governor Tom Vilsack announces that all government agencies will support lean and | |

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| | conduct at least one kaizen event | |
| June 2006 | 22 kaizen events conducted during the 2006 fiscal year ending in June | |
| July 2006 | Iowa Office of Lean Enterprise receives funding within the Department of Management (lean.iowa.gov) | |
| November 7, 2006 | Governor Tom Vilsack (D) decides not to seek reelection, Chet Culver (D) wins general election | State government transformation and lean initiatives survive leadership transition |
| June 2007 | 25 kaizen events conducted during the 2007 fiscal year ending in June | |
| October 2-4, 2007 | Lean Government Exchange; Governor Chester J. Culver declares October 2, 2007, Lean Government Day | Workshop is hosted jointly by the State of Iowa and Guidon Performance Solutions with participation by 70 people representing twenty states and federal agencies |
| 2007 | Iowa Dept. of Management hires first full-time lean staff | |
| January 2008 | Lean Government Collaborative formed with six private companies and six state agencies | Iowa Dept. of Management takes over the leadership role of public/private lean partnership from the business coalition |
| June 2008 | 19 kaizen events conducted during the 2008 fiscal year ending in June | |
| October 2008 | Iowa Dept. of Management hires second full-time lean coordinator to help manage and facilitate kaizen events | To date 95 formal kaizen events have been conducted within executive branch agencies across the state. |

Glossary

(Adapted from the [Lean Lexicon](#), available in printed and electronic versions)

Kaizen

Continuous improvement of an entire value stream or an individual process to create more value with less waste. There are two levels of kaizen: (1) System or flow kaizen focuses on the overall value stream and (2) process kaizen focuses on individual processes.

Kaizen Workshop

A group kaizen (continuous improvement) activity, commonly lasting five days, in which a team identifies and implements significant improvements in a process. After improvements, the process is standardized and the kaizen team reports out to senior management.

Value Stream

All of the actions, both value creating and nonvalue creating, required to bring a product from concept to launch and from order to delivery. These include actions to process information from the customer and actions to transform the product on its way to the customer.

Value-Stream Mapping

A simple diagram of every step involved in the material and information flows needed to bring a product or service from order to delivery. Value-stream maps can be drawn for different points in time as a way to raise consciousness about opportunities for improvement. A current-state map follows the path from order to delivery to determine the current conditions. A future-state map deploys the opportunities for improvement identified in the current-state map to achieve a higher level of performance. In some cases, it may be appropriate to draw an ideal state map showing the opportunities for improvement by employing all known lean methods including right-sized tools and value stream compression.

For More Information

Lean in Government Resources: To help other government agencies, the State of Iowa has made publicly available at <http://lean.iowa.gov/resources.html> many of the materials that it has found useful in executing its lean initiatives, including:

- **Team Charter:** Sets out the scope of the process that will be undergoing the kaizen, establishes the goals and objectives of the event, identifies any work that must be completed prior to the event, and identifies the team members.
- **Sponsor Contract:** Specifies responsibilities of the individual who has agreed to sponsor and support the team.
- **Event Preparation Checklist:** Itemizes the activities necessary to plan, conduct, and follow-up an event.
- **Event Agenda:** A kaizen event consists of Training; Mapping & Evaluating; Defining New Process; Implementing New Process; Celebration and Report Out.
- **Team Ground Rules:** Team members must be willing to abide by these important ground rules.

[Lean Enterprise Institute](#) -- Founded in 1997 by management expert [James P. Womack](#), Ph.D., LEI is a nonprofit education, publishing, conference, and research organization with a mission to advance lean thinking around the world. LEI runs monthly regional workshops on basic and more advanced lean tools. These include [“Value-Stream Mapping for the Office and Service”](#) and [“Optimizing Flow in Office and Service Processes.”](#)

You can read complete descriptions of workshop content with the latest dates and locations at [LEI’s education page](#). We also run [seminars for managers](#), [deployment leaders](#), and [senior managers](#) that help them develop the leadership behaviors that sustain lean enterprises. LEI workbooks and training materials -- all designed to de-mystify what a sensei does -- show you what steps to take on Monday morning to implement lean concepts. Visit the [LEI product catalog](#) to see the resources available for supporting lean transformations. Learn about creating lean enterprises at the next [Lean Transformation Summit](#).