



EXECUTIVE SUMMARY

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PRHI and the Iowa Healthcare Collaborative

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A joint venture between the Iowa Healthcare Collaborative (IHC) and the Pittsburgh Regional Health Initiative (PRHI) enabled more than 200 Iowa healthcare professionals from dozens of hospitals and clinics to participate in three-day immersions in Lean-based quality improvement (QI) methods.

For some, the intensive training helped participants deepen their understanding of Lean concepts and plan for spreading and sustaining QI. For those who were new to these concepts, the training (offered at four sites in different geographic areas of the state) introduced them to methods for breakthroughs in safety, clinical practices, and efficiencies.

Among other reasons, Iowa health leaders were attracted to the opportunity because of new health reform imperatives. The Affordable Care Act has set off an “accountable care” fever. Hospitals, physician practices, nursing homes, home health agencies, community health centers, and medical laboratories face the same fundamental challenge to reinvent themselves as integrated parts of a high-quality, efficient system. The Iowa QI immersion program demonstrates that hospitals across an entire state can commit to learn together and act in parallel to reach for the highest standards of quality.

Spreading PRHI’s QI Approach

Over the past ten years, more than 3,000 healthcare professionals have received training in Perfecting Patient CareSM (PPC), PRHI’s Lean-based methodology for making health care better, safer and more efficient. More than a decade ago, PRHI adapted Lean/Toyota Production System concepts to health care, and created a systematic QI approach that helps healthcare professionals dramatically improve their performance from patient care to financial results.

Although PPC training was initially concentrated in the Pittsburgh area, PRHI’s QI methods attracted attention from a broad cross-section of U.S. healthcare leaders. Demand for PPC training has grown steadily; as of the end of 2010, 267 healthcare organizations in 26 states had sponsored PPC training. In 2011, PPC engagements will expand geographic reach even more, including other countries.

PRHI’S Center for Perfecting Patient CareSM has been approved by the Pennsylvania State Nurses Association as a provider of continuing education.

IOWA HEALTHCARE COLLABORATIVE

One of the earliest Lean proponents is the Iowa Healthcare Collaborative.

Created by the Iowa Hospital Association and the Iowa Medical Society in 2004, IHC (www.ihconline.org) encourages data sharing and rapid deployment of best practices to foster performance improvement. IHC also issues public reports of hospitals' quality performance. Early involvement of business leaders led IHC to espouse Lean manufacturing techniques to improve the efficiency of health care. In 2006, when IHC's Lean programs began, only a handful of Iowa hospitals were using the methodology. A recent survey showed that more than 50% of Iowa hospitals are using Lean now to improve processes, remove waste and reduce cost.

In addition to sponsoring conferences and group learning opportunities for hospitals and other provider organizations to learn Lean principles, IHC has created a Lean Toolkit and other educational materials to support quality and safety improvement. IHC also publishes an annual hospital performance report – *The Iowa Report* (<http://www.ihconline.org/asp/publicreporting/iowareport.aspx>) – recent results of which describe Iowa hospitals, as a group, as among the best in the nation in quality and efficiency.

THE PRHI - IHC PARTNERSHIP

Discussions about potential collaboration were led by PRHI's CEO, Karen Wolk Feinstein, PhD, and IHC's CEO, Tom Evans, MD, and culminated two years ago with a joint approach to Iowa Senator Tom Harkin to seek support for an IHC-sponsored/PRHI-executed, innovative training program in Iowa. As one would expect, Senator Harkin was already aware of Iowa hospitals' generally high quality scores in both public and private rating systems, and of the relevance of some Iowa hospitals' early involvement in Lean to that success. But he had also visited Pittsburgh, and was acquainted with Feinstein (who has deep family connections to Iowa). As one of the U.S. Congress' leading healthcare experts, he showed interest in PRHI's pioneering work in patient safety and healthcare quality.

After several months of planning between IHC and PRHI, a series of four PPC regional training programs were carried out in November and December, designed to teach QI methods to at least 200 Iowa healthcare professionals, and prepare them to lead and carry out a variety of initiatives within their organizations. The four sessions were held in: Cedar Rapids, Mason City, Sioux City, and Pella.



PRHI's Coaches: (L-R)
Linda Vicaro, Kay Brewer, Jennifer Condell, Tina Hahn
Absent: Maureen Saxon-Gioia

IOWA HOSPITAL DIVERSITY

One of the significant challenges for designing and delivering PPC training in Iowa was the diversity of expected participants. Some participants would arrive with a significant grounding in Lean, but for others the PPC training would be their first exposure.

Iowa's 148 hospitals run the gamut — large, vertically integrated health system (University of Iowa Health Care), smaller health systems and community hospitals, and 82 very small, Medicare-designated Critical Access Hospitals (CAHs). By comparison, Pennsylvania has just 13 CAHs. CAHs are Medicare-designated, may have no more than 25 beds, and must offer a limited set of services (e.g., 24-hour emergency care) in rural areas where there is no other hospital. Most CAHs have limited clinical and financial resources. Outside consultants are an unaffordable luxury, as are dedicated Lean implementation teams routinely used by larger institutions.



Participants diagram their current condition and proposed intervention.

IOWA & PPC TRAINING

PRHI's team of educators and coaches understand the importance of keeping their presentations fresh and relevant to each engagement. The size and diversity of the Iowa audiences presented extra challenges. After analyzing registrations at each Iowa training location, the two-person PPC training teams customized their presentations and discussion preparations – and adjust each day's agenda (sometimes in the middle of a given day) in order to meet the participants' needs and expectations.

The initial agenda included an introduction to the history and culture of Lean, and presented a subset of Lean tools for simulation exercises and discussion. Each participant, or small team, brought to the training sessions a “learning opportunity” from their workplaces. With the help of PPC faculty, an implementation plan was developed for each.

Another special feature of each three-day program arranged by IHC, was a one-half day walking tour of an organization that was committed to Lean improvement methods, and discussion of how leadership and culture drive the application and sustainability of Lean within an organization.

Thanks to federal financial support, IHC offered each session at no cost to affiliated providers. Initial invitations were sent to hospital administrators, chief financial officers, chief medical officers, chief nursing officers, and internal quality leaders at hospitals in four geographic areas of the state. The four sessions filled up quickly, attracting more than 200 enrollees.

CEDAR RAPIDS

The Iowa PPC training series kicked off in Cedar Rapids in eastern Iowa during the first week of November. The Cedar Rapids PPC training group numbered about three dozen, and the diversity of participants set a general pattern for the succeeding sessions. Among the group of 35, most participants came to the session in small teams, and many traveled significant distances. All of them came with defined improvement opportunities to work on during the three-day PPC immersion. The PPC faculty team concluded that all had at least some general knowledge of Lean, and some had extensive knowledge.

Another characteristic of the Cedar Rapids training that manifested itself in succeeding sessions was the relevance of PPC faculty's previous hands-on experience with primary care practices, federally qualified health centers, hospitals and other healthcare organizations. Trainers and participants shared interest in: health IT, hospital readmissions, hospital-acquired infections, patient-centered medical home standards, patient flow and satisfaction in emergency departments, etc.

The participant group made a strong impression on PPC educators for their high level of interest and active engagement. This proved to be mutual admiration, as evaluation results were excellent, with the site tour figuring prominently in the positive evaluations.

Particularly well-received aspects of the classroom training were: (a) the visual management segment on Day 1, and (b) the short video on Day 2 that described QI breakthroughs at a Pittsburgh-VA area outpatient diabetes clinic. (The video is one of the renowned series of PRHI Teachable Moments, which can be accessed at http://www.prhi.org/ppc_action.php). The final day also featured a successful discussion of the importance of organizational culture.

Cedar Rapids is the second-largest city in Iowa (~128,000) and is an economic, cultural, and healthcare hub for eastern Iowa. During the Iowa flood of 2008, the Cedar River surpassed the 500-year flood plain and placed 9 square miles, on both banks of the river, under water.

The national healthcare spotlight has been trained on Cedar Rapids several times in recent months, due to the relatively high quality and low cost of healthcare services in the community. Local healthcare leaders were featured at two national gatherings in Washington, DC. Acting CMS Administrator Don Berwick cited Cedar Rapids as one of several U.S. cities that have driven down healthcare costs while remaining competitive in quality outcomes.

St. Luke's is a 125-year old, 560-bed hospital serving a seven-county area surrounding Cedar Rapids. St. Luke's is among just five percent of hospitals to achieve Magnet recognition status by the American Nurses Credentialing Center (ANCC), and is one of just two Iowa hospitals to receive the 100 Top Hospitals award from Thomson Reuters.

For the site visit at St. Luke's Hospital, participants were divided into four groups, with two of the hospital's Lean implementation specialists designated for each participant group. One-half hour rotations through four Lean implementations provided enough time for learning in each area.

MASON CITY

The second regional PPC training session took place in mid-November in Mason City, located in northern Iowa. Participants hailed from community hospitals, critical access hospitals, specialty and primary care clinics, and ancillary services (e.g., physical therapy), and included executives, frontline staff (e.g., nurses, laboratory managers, supply chain managers), clinical leaders, and quality improvement staff.

Many Mason City attendees had exposure to Lean principles; a few were Toyota Production System-trained individuals who lead QI efforts in their organizations. Their active participation enriched the experience.

The Mason City site visit to Mercy Medical Center-North Iowa was exceptional, enhanced by the extraordinary amount of time the hospital's CEO, James Fitzpatrick, spent with his hospital's guests. He described his introduction to Lean several years before, and admitted that he didn't see the applicability to health care initially. But after learning more, he came to see Lean as a means to improve patient care across all units, and he followed through by introducing the concepts to his senior staff and spreading Lean-based QI throughout his hospital.

Fitzpatrick reflected on the importance of fully committed leadership for organizational transformation and also on the significant amount of time (approximately one year) invested in initial senior leadership training and buy-in. The payoff, in his view, is a leadership cadre at the hospital that is committed to removing barriers to success for frontline staff.

As CEO, he is directly involved – in huddles, rapid improvement events, rapid improvement report-outs (which all senior leaders are expected to attend), and 5S audits. He requires all senior leaders to do the same.

MMC-Mason City's Lean implementation began about 2 ½ years ago (branded internally as "Performance Excellence," or PEx), and has now been rolled out to all departments/units in the hospital by a PEx team of improvement specialists. Rapid

improvement events (kaizens) are held routinely. All new employees are trained in Lean and are expected to attend a rapid improvement report-out within two weeks of hiring.

PRHI faculty and training participants saw evidence of Lean spread across the hospital: standardized "huddle boards" that include departmental/unit metrics (e.g., safety, patient outcomes, time/money savings, etc), "ideas in motion" (with associated timeline and assigned

personnel), standardized communication about change in

process (with visual depiction and written description of the

Mason City is a northern Iowa city of ~30,000. Its favorite son, Meredith Willson, composed The Music Man. Its largest employer is the community hospital, Mercy Medical Center, and it is also home to a large Kraft Foods plant. Mason City is widely known for its collection of Prairie School architecture, including two commercial buildings designed by Frank Lloyd Wright.

Mercy Medical Center-North Iowa is a 346-bed hospital, the hub of Mercy Health Network-North Iowa, which also includes nine rural primary care hospitals and 38 primary and specialty care clinics. MMC-North Iowa-affiliated physicians travel to rural communities throughout the 15-county North Iowa area, providing more than 100 half-day specialty clinics each month that ensure rural residents receive needed specialty care.

former process and new process), and 5S audit forms. Units/departments have daily huddles (15 minutes, usually twice per day to cover both shifts) to review improvement opportunities, progress toward addressing ideas in motion, updates on changes in processes, etc.

All four departments that were visited (surgical suite, lab, nursing unit, dietary) had completed a 5S of storage areas, work spaces, etc. 5S is routinely audited (weekly) for sustainability, and improvements are continuous. An expected number of QI ideas is even specified in some employees' position descriptions.

SIoux CITY

Held in the first week of December, the Sioux City training session attracted 65 participants from two dozen hospitals and healthcare organizations in western Iowa. It was hosted by Mercy Medical Center-Sioux City, which also hosted the site tour on Day 2.

The site tour was led by the hospital's full-time Lean Director, and Lean Implementation Team members participated in and contributed extensively during the training session. Featured during the tour were reviews of previous and ongoing Lean initiatives: phone answering in an outpatient clinic, 5S in central supply, huddle-boards in the Executive Administrative suite, and family waiting rooms. Lean is still spreading at MMC, but it was clear that a significant beginning has occurred. Implementation staff guided the "opportunities for improvement" portion for their final day's agenda. One nurse leader from a critical access hospital described in detail the barriers that she perceived as impeding implementation of Lean in small organizations. A lively discussion ensued.

Sioux City is a western Iowa community of about 85,000, located at the navigational head of the Missouri River. The first documented explorers of European descent were members of the Lewis and Clark expedition in 1804. It was at the site of what is now Sioux City that Sergeant Charles Floyd died, the only fatality that occurred during the two-and-a-half year expedition.

In 1890, civic leaders of Sioux City invited the Sisters of Mercy to establish a hospital, which later became Mercy Medical Center-Sioux City. In 2000, the hospital became part of Trinity Health Mercy Health Network (an arm of Catholic Health Ministries). Today, MMC-Sioux City is a 267-bed, regional medical center serving a 33-county area in Iowa, Nebraska and South Dakota. It owns or manages four rural hospitals and operates 30 family practice clinics in western Iowa or Nebraska, along with nine specialty clinics. Mercy-Sioux City is also home to the only Level II Trauma Center in Western Iowa.

PELLA

The Pella training attracted the most diverse group of participants: staff from three primary care practices and one federally qualified health center, teams from small critical access hospitals and larger community institutions, and representation from ancillary health services organizations. Professions represented at the Pella session were equally varied — many had Lean experience, and as at the three previous training sites, the mix of familiarity levels with Lean helped initiates to profit from others' practical experiences.

The site visit to the Vermeer Corporation offices and manufacturing facility in Pella was an unequivocal highlight. Although it was the only non-healthcare site visit in Iowa, Pella participants commented on how seeing Lean in action at Vermeer made the concepts learned in the classroom more "real."

Why Lean at Vermeer? According to the Vermeer leaders, sales in the 1990s were increasing but profitability was declining. According to CEO Mary Vermeer Andringa, Vermeer may not have survived without its Lean epiphany. Her conclusion about the importance of Vermeer's commitment to Lean is clear: "Lean is the only business model that works—hands down."

Located in south-central Iowa, Pella's population is ~10,000. It is the home of Central College, as well as several manufacturing companies, including Pella Corporation and Vermeer Manufacturing Company, both renowned for their Lean implementation. The community is the site of the tallest working windmill in the U.S., and its renowned annual Tulip Time Festival celebrates Pella's Dutch heritage.

Vermeer uses Lean as the basis for "relentless pursuit of improvement. Although a 40% decline during the economic recession that began in 2008 was a significant stress, leadership attributes its ability to avoid layoffs through cost reductions and cash conservation created by Lean implementations.

PELLA

Like James Fitzpatrick at Mercy Medical Center-Mason City, Vermeer's leadership emphasized the crucial importance of committed, engaged leadership that drives change from the top. A key early Vermeer strategy was identifying "pain points" and developing plans for addressing them and gaining early wins and buy-in.

Lean permeates Vermeer's hiring strategy. Job candidates are assessed for their attitudes about (constant) change. Employee orientation includes a history of the company's Lean journey, and new hires participate in a kaizen event or A3 development early. In the coming months, Vermeer will spread Lean to all of its manufacturing locations and dealerships worldwide, while also seeking to develop more internal Lean leaders to spread and sustain change.

CEO Mary Vermeer Andringa stressed:

- ◆ Always ask the "5 whys"—get to the root cause of resistance to change
- ◆ Appreciate kaizen events as essential opportunities to reinforce key principles and allow leaders to understand their people, processes, and products
- ◆ Engage all vice presidents in at least 3 kaizen events in their first year
- ◆ Engage the CEO even more (she participated personally in 12 kaizen events in two years, and added, "You just have to find time to schedule it in")
- ◆ There will be slip backs, no matter what.
- ◆ Having a steering committee (or guiding coalition) is critical to implementing and maintaining a Lean culture

Vermeer is a leading agricultural, construction, environmental and industrial equipment manufacturing company. Since its inception, Vermeer has grown from a one-person Iowa operation, to an international organization that manufactures agricultural, construction, environmental, and industrial equipment. Vermeer celebrated its 50th anniversary in 2010.

CONCLUDING THOUGHTS

Training evaluations were 95+ % favorable in all major respects. PRHI staff was no less impressed with the participants' level of commitment, knowledge and engagement.

PRHI thanks Senator Harkin and the Iowa Healthcare Collaborative for a wonderful opportunity to meet the extraordinary people and organizations who provide Iowa's health care.

Other, recent PPC training engagements have also encompassed a wide variety of healthcare organizations and settings. Two, 2010 *Executive Summaries* describe how PPC methods are being used for organizational transformations at a Pittsburgh-area nursing home (<http://www.prhi.org/docs/Asbury%20Heights%20Executive%20Summary%20Sept%202010.pdf>), and at a non-profit behavioral health system (Sheppard Pratt Health System in Baltimore) (<http://www.prhi.org/docs/Sheppard%20Pratt%20Exec%20Sum%202010.pdf>). New engagements for 2011 include supporting an ambitious QI undertaking at a large New England hospital and introducing PPC principles to the staff of four California public hospitals.



One of the learning sessions at Sioux City, Iowa.