Better and Faster:
How Safety-Net Providers Are Redesigning Care

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Introduction

Health care reform promises changes in the health care safety net, including funding incentives for high-quality, patient-focused care; meaningful use of electronic health records (EHRs); and expanded services to accommodate the many newly insured Americans. As health insurance exchanges become a reality, consumers will increasingly drive expectations and value, forcing health plans to adjust their pricing and coverage in order to compete.

In this new marketplace, providers will need to systemize, organize, and find creative ways to provide more comprehensive and cost-efficient care. This issue brief highlights innovative management and process reengineering efforts that safety-net providers are using to respond to increasing demands for quality and efficiency.

Management and process reengineering have transformed many industries, including manufacturing, transportation, and food. "These industries have used management engineering to optimize scheduling, staff at levels that match demand, and reduce waste in production processes," noted David Belson in his March 2010 issue brief on improving efficiency in the safety net.[1]

The health care sector has been slow to embrace management and process reengineering, especially within the safety net, where there are fewer resources to make the initial investment and little technical support. However, this has begun to change as other industries have demonstrated improved outcomes and some federal and state financial support has become available.

Methods Used by Safety-Net Providers

This paper looks at a number of safety-net organizations that have adopted Lean, Six Sigma, patient visit redesign, or process reengineering using quality improvement tools such as the Institute for Healthcare Improvement's Plan-Do-Study-Act (PDSA) model. More than 25 safety-net practices across the country were examined and 15 in-depth interviews were conducted. Select reengineering methods and experiences of these safety-net organizations are described below.

Lean Method

Lean emphasizes reducing waste, developing smooth workflow, and creating a culture that is responsive to patient needs.[2] Originally developed at Toyota, it is also successful in health care. Teams are created and champions identified across the organization. Tools are used to map out processes, identify issues, and solve problems. They include:

- **Value stream mapping.** This is used to analyze the flow of materials and information required to bring a product or service to a client, and to determine which steps add value for the end user. It can be used in any process that needs improvement.

- **Line and self balancing.** Line balancing focuses on evenly distributing work activities and responsibilities to ensure there is no wasted time. Self balancing analyzes the process by which employees "pull" information or material from each other.

- **5S — Sorting, simplifying, sweeping, standardizing, and sustaining.** This five-step technique is used to reduce errors, promote safety, and facilitate maintenance of processes.

- **3P — Production, preparation, process.** While some Lean methods take the production process as a given and try to improve it, 3P focuses on eliminating waste through product and process design.

Following are case examples of two organizations that are successfully using Lean.

Family HealthCare Network (FHCN) is a Federally Qualified Health Center (FQHC) with 13 sites (11 clinical, two administrative) serving Kings and Tulare counties in California's agricultural Central Valley region.[3] It was founded in 1976.

Annually, FHCN serves 101,967 patients — half of them farmworkers — and handles 492,683 patient encounters. The organization has 450 clinical support staff, 88 clinicians, and 14 dentists.

Family HealthCare Network implemented the Lean method in 2008 to eliminate waste from its processes relative to the patient's experience. Lean's five-step approach, shown in Figure 1, was used to help management, providers, and staff map processes and analyze how they could be more efficient and patient-centered.

Figure 1. Lean's Five-Step Approach
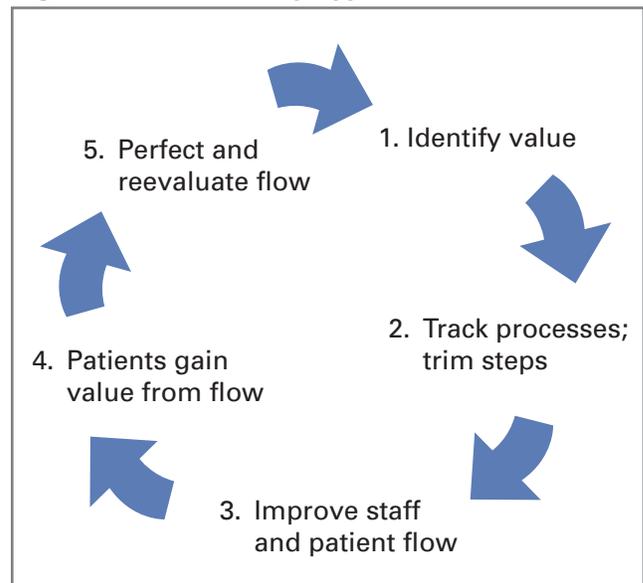
FHCN focused on finding value-added steps and decreasing wait time and cycle time (the total duration of a patient's visit). To start the process, a team of about 20 front-line staff was initially guided by a consultant and Lean expert.

The team used Lean to improve the patient experience, including reducing paperwork, which resulted in increased patient satisfaction. Next, Lean was used to implement an electronic

health record (EHR) system in March 2010. This was accomplished without negatively affecting productivity. Currently, FHCN is using Lean tools to become a patient-centered medical home (PCMH).

The main challenge for FHCN was the initial staff buy-in for Lean and, later, for the EHR implementation. Once providers and staff got involved and realized the benefits of both systems, they became excited and committed to the Lean approach. Cultivating buy-in at all levels of the organization was essential for success. "There is a strong culture of change at FHCN," said Jay Kelley, chief information officer. "Lean opened everyone up to the idea that there is a better way that will be more efficient and better for the clients/patients. The Lean process assisted in opening doors and minds, which will make it a lot smoother for the medical home implementation process."

Denver Health and Hospital Authority (DHHA), an FQHC and hospital system in Colorado, provides care for uninsured patients in Denver and surrounding areas.[4] Approximately 150,000 people—a quarter of all Denver residents— receive care at Denver Health, and one in every three children in Denver is cared for by Denver Health physicians.

DHHA started implementing the Lean method in 2006 to address inconsistencies and waste throughout its system. Lean was chosen because it seemed more intuitive than other methodologies. Denver Health first focused on its community health centers and then expanded Lean to its inpatient and specialty care sites, where Lean activities are still in their early stages. The most successful outcomes to date have been achieved in community health, revenue cycle, and inpatient flow.

A grant from the Agency of Healthcare Research and Quality (AHRQ) funded the first six Lean facilitators and helped DHHA implement Lean

throughout the organization. Currently, Lean is supported by savings achieved through reduced waste and increased productivity. DHHA contracts with a consulting firm to help with ongoing Lean training and implementation.

The Lean 3P method was used very successfully to facilitate DHHA's design and building of three patient-focused and less costly new community health centers. Leaders collaborated with staff, providers, architects, and the construction company to eliminate extra steps and create buildings that enable efficient patient, staff, and provider flow.

DHHA believes the leadership and culture of each of its individual clinics influence the success of the Lean efforts. The biggest challenge has been spreading best practices from one clinic to another. Lessons learned are disseminated throughout the DHHA system, and then teams at each clinic or department tailor them to fit the culture and needs of their patients, staff, and providers.

Lean Six Sigma

Six Sigma is an approach to operations and quality improvement that emphasizes controlling variability, identifying causes for defects, and developing a group of trained change leaders. Like Lean, the approach was developed for manufacturing but works well in health care. Six Sigma uses tools such as cause-and-effect diagrams and statistical run/statistical process control charts to identify and reduce variability.

Lean Six Sigma combines the Lean and Six Sigma methodologies. It is a structured discipline that enables organizations to conduct activities that are valuable to customers, eliminate activities that don't add value, and reduce variability. In health care, customers are typically defined as members/clients, insurance companies and other funding organizations, employees at all levels, and businesses that tie them together.

A group, department, or entire organization can use the Lean Six Sigma tools to move through the transformation process. In a logical flow, data are moved from one tool to another so there is synergy among the tools, which enhances problem resolution and the ability to sustain improvements. High-quality results require leadership commitment and involvement of the entire team in the process.

Although non-safety-net organizations such as Kaiser Permanente are successfully using Lean Six Sigma, among the safety-net organizations interviewed for this report, none had fully and successfully employed the Six Sigma or Lean Six Sigma methods, because of their complexity and the need for advanced statistical knowledge. Safety-net practices and clinics could better use Lean Six Sigma once they establish a strong culture of change and general understanding of process-improvement tools.

Patient Visit Redesign

Patient visit redesign (PVR) focuses on minimizing unnecessary patient movement and streamlining patient flow.[5] The goal is to virtually eliminate waiting time. By decreasing patient cycle times, a clinic can increase its efficiency and the number of patients it sees in a day. This, in turn, can lead to better patient and staff satisfaction and improved financial viability. PVR requires the practice to look at the way it accomplishes work by starting from scratch to create a patient visit process that is efficient and patient-focused. The three safety-net organizations described below used Coleman Associates' Patient Visit Redesign process to transform their practices.

Albuquerque Health Care for the Homeless (AHCH) is a Federally Qualified Health Center in urban New Mexico.[6] AHCH offers primary care, including medical, dental, and behavioral health services, and residential programs. The organization went through the patient visit redesign process in 2000, at a time when patients faced long waits to see a provider. The redesign identified issues that caused delays and prevented patients from moving smoothly through the clinic. These issues included a lack of communication among staff, poorly supported providers, and patient-flow confusion. Staff created an ideal visit model and tried various iterations of the flow until a final model was developed and implemented in the clinic.

In the ten years since the transformation, certain design changes, such as creation of a client advocate position, have become integral parts of the clinic's culture. Patient satisfaction has increased and the clinic sees more patients. However, the redesign techniques initiated in 2000 were never fully integrated into the clinic's processes, partly because of high staff turnover. The absence of a permanent cultural change in policy, procedure, and workflow has eroded some of the initial progress.

High Plains Community Health Center is an FQHC in rural southeastern Colorado.[7] The clinic offers primary care, dental care, and behavioral health services to communities in four counties. To increase clinic capacity and meet demand, High Plains underwent Coleman and Associates' PVR transformation in 2001. A team of five led the effort with support from Jay Brooke, High Plains' executive director. After a period of training, observation, and patient tracking, the clinic streamlined its workflow by reducing wasted time (such as in the waiting room), implementing same-day scheduling, and assigning two medical assistants to each provider, assuring adequate coverage and defined responsibility.

Staff and patients converted to the new model with some difficulty, but after the transition was complete they became accustomed to the redesigned clinic flow and embraced its benefits. Cycle times dropped significantly and patient outcomes

improved. Leadership has remained constant and many of the redesign principles have been successfully integrated into the clinic, which is now working to become a patient-centered medical home.

Jackson Health System (JHS) is a large, urban, academic health system located in Miami and the surrounding metropolitan area.[8] It consists of hospitals and residency programs, community health centers, and primary and specialty care clinics. JHS began the patient visit redesign process in 2004, at a time when Jackson Health was experiencing financial trouble—making the transformation process more difficult while increasing the pressure to succeed. JHS focused on outpatient visits; attracting a wider client base, including insured patients; shortening patient cycle times; and increasing patient and staff satisfaction.

A train-the-trainers program was implemented to ensure staff understanding and compliance. Staffing models were examined and redesigned, and unnecessary positions were eliminated. Patient cycles were trimmed of unnecessary time spent waiting or with providers, thus allowing providers to see more patients per hour.

Sandy Sears, then-senior vice president for ambulatory services and community health, led the transformation. She kept redesign in the forefront through consistent and continuous messaging, signage, and communication. Despite these efforts, the process was particularly difficult for staff, some of whom didn't understand why JHS was making changes and eliminating positions. Once the redesign became more fully integrated, however, staff saw positive results and many became proponents of the process. In addition to reduced cycle times, increased patient numbers, and improved patient outcomes, benefits included lower staff absenteeism and improved productivity.

While the redesign helped Jackson improve its financial situation and increase patient numbers and system efficiency, not all of the redesign principles have been fully integrated into the culture. Leadership turnover and reduced emphasis on the PVR process diminished the importance of the transformation, and many elements have not endured.

Process Reengineering

The two safety-net providers described below have transformed their practices over the past few years with process reengineering. Each of these short case studies highlights the techniques they used, including the Institute for Healthcare Improvement's Plan-Do-Study-Act Cycles and quality improvement initiatives.

Ammonoosuc Community Health Services (ACHS) is an FQHC and National Committee for Quality Assurance (NCQA)-certified Level 3 patient-centered medical home with five locations in rural New Hampshire.[9] Originally established as a Title X family planning clinic in the 1970s, ACHS has become a successful FQHC and integral health care services provider in its communities.

Edward D. Shanshala II was hired by the clinic in 2005 as chief operating officer and became CEO in 2008. Using process reengineering techniques, he was able to positively transform the clinic. ACHS streamlined its processes by examining and refining its management and financial procedures, optimizing expenses and revenue stream, leveraging group purchasing, and moving toward self-directed sites and pay for performance. In its care delivery process, ACHS uses patient navigators to guide patients through their health care experiences. A navigator's role is to focus on the patient's journey, not simply on case management. This allows patients to steer their own course, with the aid of the navigator.

The redesign practices implemented at ACHS involved a period of transition before they were fully accepted and integrated. Hiring and salary freezes caused strain for employees and the organization, and most of the funding for the changes came from the organization's already-tight budget. Reengineering efforts were funded, in part, by a grant from the New Hampshire Endowment for Health. However, during and after the transition, the redesign paid for itself and proved successful. Patient cycle times have decreased, collections have increased, clinics are financially stable, clinical outcomes have improved, and both staff and patients are more content.

Reengineering processes and the PCMH transformation are integral parts of Ammonoosuc Community Health Services' culture and vision, and staff at all levels are engaged. By improving its processes, ACHS has been able to focus even more on its patients.

Clinica Family Health Services is an FQHC serving the areas surrounding Boulder and Denver, Colorado.[10] Its patient base is predominantly the working poor, the uninsured, and patients receiving Medicaid benefits.

Clinica has been implementing process improvement for the past ten years. It used PDSA cycles and quality improvement plans to institutionalize a culture of process improvement throughout its clinics. It also employed PDSA techniques to implement an electronic health record in 2005 and e-prescribing at the beginning of 2010, and to become an NCQA-certified Level 3 PCMH in September 2010. Each of its four clinics has a PCMH team with mixed clinical and non-clinical representation. Annual surveys of staff and providers measure their satisfaction with Clinica and process improvement initiatives.

Collaboration is key to Clinica's success, according to its leaders. Prior to implementing

the EHR, Clinica became part of the Integrated Physician Network—a group of about 20 practices that purchased their EHR together—to reduce costs. Clinica also participates in the safety-net medical home initiative through the Colorado Community Health Network, which helps Clinica implement and measure PDSA cycles to continuously improve its practices. In addition, Clinica is part of the Patient Safety and Clinical Pharmacy Services Collaborative through the Health Resources and Services Administration. Through this collaborative, its staff is conducting anti-coagulation group visits in partnership with the University of Colorado pharmacy; students rotate through one of Clinica's sites to conduct point-of-care testing as well as educate patients about proper use of warfarin. This initiative has been very successful.

Patients are an integral part of the transformation process, participating in committees and Clinica's board of directors. Quarterly patient satisfaction surveys track which changes have positive effects.

A major lesson learned for Clinica has been the importance of minimizing the number of process improvement initiatives it employs at any given time. Currently, Clinica is emphasizing access and diabetes. Process reengineering has helped Clinica focus on patients and patient safety, especially regarding medications.

Optimizing Primary Care Collaborative

The California Primary Care Association Optimization Initiative, supported by the Bureau of Primary Health Care and facilitated by Mark Murray and Associates, was launched in April 2007. Structured as a one-year learning collaborative and based on the Care Model, the Model for Improvement, and the Learning Model, it was designed to reduce delays in access to care in primary and specialty care settings, reduce delays at

appointments, improve clinical care with a special focus on cancer prevention, and raise provider and staff satisfaction. The subsequent initiative, Optimizing Primary Care Collaborative (OPCC) for Federally Qualified Health Centers, with goals similar to the 2007–08 collaborative, was launched in April 2008.[11] Several FQHCs participated, but few successfully sustained implementation and benefits. The efforts of two of the successful FQHCs are highlighted below.

Petaluma Health Center (PHC) is an FQHC that serves approximately 15,000 patients annually in Northern California's Petaluma area.[12] Fifty percent of its patients speak Spanish; of these, 35 percent need health care services delivered in Spanish. Ninety percent live below 200 percent of the federal poverty level. All providers are bicultural and bilingual in English and Spanish.

In 2007, PHC implemented the Optimizing Primary Care (OPC) Initiative as part of the OPCC. The clinic dedicated a multidisciplinary team to implement and sustain optimization of patient flow throughout its primary care and gynecology departments. This team dedicates an average of four to eight hours a week to OPCC-related work.

PHC also participates in the Culture of Quality Series developed by a local consortium. The series focuses on teaching staff, providers, and management about PDSA cycles, quality improvement, and evaluation. The clinic has approximately 75 ongoing PDSA cycles (half focus on performance improvement and half on quality measures). In addition, PHC implemented electronic health records in November 2009.

The clinic has had a number of successes from its participation in OPCC and the Culture of Quality Series, including a new organizational culture that is open to change and a decrease in the number of visits per patient—which enabled PHC to

increase the total number of patients from 12,500 in 2007 to 15,000 in 2008. In addition, there have been increases in patient satisfaction and patient/provider continuity; a decrease in cycle time; better productivity and access; and improved provider retention.

Managing change was a significant challenge for PHC when too many changes were made at once and staff and providers did not have time to adapt or see the benefits. The clinic resolved this problem in a number of ways. They are careful to keep providers in the loop regarding their panel size and productivity, as well as to keep provider schedules consistent (15-minute appointments for all family medicine providers). PHC tracks productivity in an Access database to help give providers perspective on their patient load.

"It is hard to imagine ever going back to the other type of care," said Dr. John Pendleton, associate medical director. "Waiting two weeks for an appointment, triage, and a lot of strategies that keep patients out when they want to be seen is dangerous. Seeing people when they want to be seen should be the standard. Daily, weekly, and monthly you need to match the demand," he said. "Looking forward is very important."

Mission Neighborhood Health Center (MNHC) is a 39-year-old FQHC that serves more than 13,000 patients and handles some 66,000 visits annually.[13] It focuses on providing culturally and linguistically competent health and human services for Latinos in San Francisco and the greater Bay Area.

Although MNHC has conducted many small process redesign efforts, participation in the Optimizing Primary Care Collaborative is its first organization-wide initiative. It began implementing the principles of OPCC in April 2010; implementation is expected to last one year. MNHC is focusing on patient-centered communication, to

be measured through patient satisfaction surveys with an emphasis on the qualitative aspect of the data. The center is engaged in educating staff and providers on patient-centered care and communication. A consultant will provide training on motivational interviewing, agenda setting, patient/provider relationships, team huddles, survey forms for patients, and greeting patients warmly.

MNHC has started using new techniques learned with PDSA cycles and is closely evaluating the outcomes. It plans to disseminate new strategies throughout the organization in 2011.

There have been challenges to implementing these changes in a multidisciplinary FQHC with many part-time providers, especially within family medicine. MNHC has high provider turnover; because the clinic serves a transient population, it can be difficult for providers to establish long-lasting relationships with patients.

Conclusion

The safety-net organizations highlighted in this issue brief demonstrate that, despite the many challenges, proven management and process reengineering methodologies help practices better serve their patients. Most of the practices interviewed saw better clinical outcomes; shorter visit cycle times; and better patient, provider, and staff satisfaction. They also achieved an improved bottom line, not only in funding but in reduced absenteeism and increased productivity. Key lessons these safety-net organizations learned include:

- **Culture.** A successful transformation requires a permanent change in culture and way of thinking about systems of care. It takes time, resources, and commitment at all levels to achieve this. Securing staff and provider buy-in can take time, but incremental positive results assist with this effort.

- **Leadership.** Support, continuous communication, and involvement of leadership are essential to success. Leaders can demonstrate engagement in many ways, including attending meetings, participating in committees, and communicating continuously via email, newsletters, in person, and even in videos, as well as supporting decisions by providers and front-line staff.

- **Baseline measures.** Determining baseline data before undertaking process improvement helps measure gains. Seemingly small changes can make big differences in the overall transformation of the practice.

- **Implementation continuum.** Before implementing a patient-centered medical home, electronic health records, or other system of care, it is important to identify a proven process-improvement methodology (such as patient visit redesign, Lean, or Six Sigma) to streamline existing practices.

- **Sustainability.** The likelihood of sustainability is increased by: savings achieved through management and process reengineering; commitment from all levels of the organization; external grants; and potential reimbursement from state or federal agencies.

- **Tailored models.** Models must be customized for each practice. Applying best practices from other health care organizations and even other industries is reasonable and recommended, provided they are reshaped to fit the needs of the clinic's specific population.

- **Focus and pacing.** Implementing many changes at once hinders the process and frustrates staff and providers. Change must be incremental, focused, and clearly communicated to everyone in the organization.

- **Collaboration.** Working with other organizations is key to providing a full spectrum of services to patients. Collaboration increases the technical expertise of management, staff, and providers, and may ease the organization's financial burden.

With careful evaluation of existing practices and financial and skill-building assistance, safety-net providers can make changes in their practices that will have a long-term effect on the health care system. Safety-net providers can take advantage of the momentum created by health reform to improve clinical outcomes, place patients at the center of their care, and eliminate waste. As new funding options become available to expand the safety net and improve the quality of care, those providers that systemize, organize, and seek creative ways to provide more comprehensive and cost-efficient care will be rewarded.[14]

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