



PITTSBURGH REGIONAL HEALTH INITIATIVE

Spreading Quality,
Containing Costs.

EXECUTIVE SUMMARY

February 2013

PPC GOES INTERNATIONAL: The Israel Healthcare Quality Partnership

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

The Jewish Healthcare Foundation's (JHF) longstanding commitment to health care that is both high quality and high value care has spurred its search for promising local, national, and international models and partnerships. Among international models, the Israeli healthcare system stands out.

Spending just 8% of its Gross Domestic Product on health care (half the U.S. rate), Israel's hybrid public-private system has achieved population health outcomes that surpass those of many other western countries.

Intrigued, JHF led a group of twenty-three community leaders on a mission to Israel in March 2009 to learn more. The ten-day tour of diverse Israeli healthcare facilities and meetings with providers, payers, and policy makers made it clear that JHF and its Israeli partners had much to learn from one another. This issue of Executive Summary describes some of the fruits of the ongoing partnerships that ensued.

IDENTIFYING OPPORTUNITIES TO SHARE BEST PRACTICES

The goals of JHF's first study mission to Israel in March-April 2009 were to gather and to share breakthrough ideas for healthcare and social service improvement, and to learn from and with Israeli leaders in healthcare quality, health information technology, and innovative delivery models.

A team of JHF and PRHI (Pittsburgh Regional Health Initiative, a JHF operating arm) and twenty-three colleagues from Pittsburgh, Denver, and Chicago (specialists in healthcare delivery, finance, policy, aging, special needs, and education), discovered a healthcare system that spent half that of the U.S., on a per capita basis, and still achieved superior population health outcomes.

We were intrigued. Was there more to be learned that could inform not only our own work, but more broadly, the health reform debate in the U.S.? To find out, a small group of staff, six physicians and a RAND health services researcher returned in June 2009. We met with independent health service experts at the Myers-JDC-Brookdale Institute, the director general and deputy director general at the Ministry of Health, senior leadership at two of the country's Health Maintenance Organizations (HMOs) – Maccabi and Clalit, and made hospital and primary care clinic site visits.

ISRAELI PARTNERSHIP TIMELINE

March 2009: The first healthcare study mission to Israel initiates a multi-year exchange of best practices and ongoing partnerships with the Clalit Health Services and the Meyers-JDC-Brookdale Institute.

June 2009: A group of clinicians and policy experts led by JHF visit Clalit Health Services hospitals and clinics and meet with key Israeli stakeholders to take a deep dive into the mechanics of the Israeli healthcare delivery and advanced primary care electronic medical records, focusing on what they may offer to the comprehensive reform efforts in the U.S.

August—October 2009: JHF approves a grant to draw on Israeli successes to advance best practices in southwestern Pennsylvania and nationally, and contracts with the Meyers-JDC-Brookdale Institute in Jerusalem to inform the U.S. healthcare reform debates by developing a series of [monographs](#) comparing and contrasting key aspects of the Israeli system with the U.S. system.

December 2009:

- JHF President & CEO Karen Wolk Feinstein, PhD presents, “The Role of a Regional Initiative in Health Policy, USA,” at the Fourth International Jerusalem Conference on Health Policy—introducing the Pittsburgh Regional Health Initiative’s (PRHI, an operating arm of the JHF) and Pittsburgh’s Lean-driven quality improvement methods and successes to an international healthcare audience.
- JHF visit identifies opportunities for mutual learning:
 - * Two innovative Clalit *secondary care centers* in Haifa inform key PRHI demonstration projects aimed at eliminating preventable hospitalizations.
 - * Visits to several Clalit hospitals and clinics identify quality improvement opportunities likely to be responsive to PRHI’s Lean-based methodology, Perfecting Patient Care² (PPC). Clalit leadership respond by selecting five pilot quality improvement teams to receive PPC training and coaching.

October 2010:

- Following a competitive selection process, fifteen Israeli physicians, nurses, and administrators visit Pittsburgh over eight days to kick off a formal training partnership with JHF. Site visits, PPC principles training, Lego exercises providing hands-on experimentation with Lean techniques, and lively discussions seed five quality improvement projects—three in Clalit hospitals and two in regional community primary care clinics.
- Israeli hospital CEO Chen Shapira (Carmel Hospital, Haifa) delivers the keynote address in Pittsburgh, sharing the experience of two unique secondary care centers in Israel that inform the development of PRHI’s Accountable Care Network project.

August—September 2011:

- To provide on-the-ground coaching to the teams in Israel, Clalit leverages the JHF grant to hire Yifat Lavi, MSc. as an Israeli quality improvement coach. Lavi, an industrial statistician and quality assurance manager, with a *black belt* in Six Sigma and Lean Manufacturing, supports the Clalit teams using PPC for quality improvement.
- Lavi visits the U.S. to learn more about PPC and to work with PRHI coaches on developing strategies for spreading PPC throughout Clalit Health System. She attends the Belmont University Lean Healthcare Certification course in Nashville (co-developed by JHF and Healthcare Performance Partners) and spends three days at a community hospital in New Hampshire to observe a senior PRHI coach working to implement PPC.

November 2011:

- JHF leaders and PRHI quality improvement coaches make site visits to the five PPC demonstration sites in Israel and work with Clalit leadership to strategize on the support needed to advance not only the pilot projects, but to engage the Clalit Health System more widely in Lean-based quality improvement.
- JHF President & CEO Karen Feinstein delivers the keynote address, “Can Industrial Engineering Perfect Patient Care?” at the Israel Society for Quality in Health Care’s annual conference. With 700 attendees – Israel’s largest annual healthcare conference – Feinstein challenges Israeli healthcare providers to build on their high-achieving healthcare system by eliminating waste and errors.

January 2012: Lavi visits Pittsburgh for further PPC training, making site visits to see PPC in action in a variety of healthcare settings.

July 2012: Stacie Amorose, PRHI’s director of Lean healthcare strategy and application, travels to Israel for two weeks to co-conduct PRHI’s first international PPC training and *kaizen* events. Amorose and Lavi train an additional twenty-two Clalit staff in PPC principles and hold *kaizen* events at each of the three hospital pilot sites.

We learned that:

- Israel provides generous and uniform healthcare coverage to all via four nonprofit insurance plans structured as HMOs that compete for consumers around quality, efficiency, and patient satisfaction.
- There are no separate plans for the elderly, disabled, and poor; and no employer intermediaries.

Advanced Primary Care Information Technology

Reflecting on Israel's emphasis on primary care, all four HMOs have advanced electronic health records (EHRs), with a primary care penetration rate of 100% and an e-prescribing rate of 95%. Even in this environment, Maccabi Health Plan's EHR is noteworthy.

The Maccabi primary care EHR offers practitioners advanced telemedicine, virtual specialty consultations, on-line medical imaging (including an impressive electronic screening system for retinal disease), patient web-portals, electronic home monitoring, and real-time physician desktop performance dashboards – all in a single, integrated system.

We were impressed by their capabilities, and in March 2010, arranged a meeting for the system's lead developer, Varda Shalev, MD (Maccabi director of medical informatics) and Rachel Kaye PhD (Maccabi director of health policy research) to meet with David Blumenthal, then director of the Office of the National Coordinator for Health Information Technology (ONCHIT) for the U.S. federal government, and Charles Friedman, ONCHIT's chief scientific officer. Blumenthal was charged with leading the nationwide charge toward adoption and meaningful use of EHRs.

The meeting gave both the opportunity to share their assessments of the current and future capacity of primary care EHR systems.



Dr. Bruce Rosen of the Meyers-JDC-Brookdale Institute

- The central government plays a strong financing and oversight role, capping annual budgets at expenditure rates lower than is typical in most advanced Western economies.
- Physicians and nurses are salaried and unionized. Heavily subsidized by the government, tuition for medical education is very low.
- Israel has invested relatively more in its outpatient than inpatient sector, which is managed by advanced electronic health records (albeit separately by each of the four HMOs). Among the primary care sector's most impressive achievements are the following:
 - ◊ Quality indicators and data mining to encourage meaningful use and optimize patient outcomes and efficiency in a range of settings
 - ◊ Use of intensive in-home services to prevent institutionalization for the chronically ill or disabled
 - ◊ Proactive management to prevent hospitalizations for patients with chronic health conditions including congestive heart failure.
- Rather less developed, is the country's hospital system. Half of the country's hospitals are owned and managed by the government and roughly half by Clalit, the largest HMO. Budgets are capped; there is a shortage of beds, with patients spilling into hospital corridors seasonally. Inpatient electronic health records were rudimentary and – at least for the government-owned hospitals – disconnected from outpatient providers. Nurses appeared to be overworked, yet underutilized. We noted the strong possibility of the unintended consequences of capped budgets, where high-margin surgeries took priority in scheduling. There were very few incentives for delivering high quality, safe care. Remarked Karen Feinstein, PhD, "It's a 'no, no, no' environment."

Learning from Israel: Disaster Preparedness

Recognized as world leaders in emergency medicine and disaster preparedness, Israel regularly offers training to international visitors. Taking advantage of one such opportunity, JHF invited five professionals from the Pittsburgh region to participate in a course offered jointly by the Israel Defense Forces and the Ministry of Health in November 2010.

Among the important takeaways from this experience:

- Checklists/protocols for use in Emergency Rooms throughout the Pittsburgh region
- New training and drilling procedures for disasters

Participants included:

- Bryan Kaplan, (then) COO, Collaborative Fusion, Inc.
- Ronald Roth, MD, professor, Department of Emergency Medicine, University of Pittsburgh School of Medicine
- Dan Swayze, DrPH, MBA, MEMS, VP & COO, Center for Emergency Medicine of Western Pennsylvania, Inc.
- Adam Z. Tobias, MD, assistant professor, EMS Fellow, Department of Emergency Medicine, University of Pittsburgh School of Medicine
- Nancy D. Zions, MBA, chief operating officer, chief program officer, JHF
- Kelly Close, MD, MPH, (then) executive director, EMed Health

The June 2009 visit, and a follow-up in December, inspired us not only for what we could learn, but also for what we might teach. JHF staff compiled feedback from visit participants in a September 2009 Executive Summary. The JHF board recognized the opportunities for a mutually-beneficial partnership and executed a planning grant, enabling staff to engage in serious planning moving forward. The grant enabled staff to contract with the Myers-JDC-Brookdale Institute in Jerusalem to prepare a series of [monographs](#) comparing key aspects of the two systems. In addition, it enabled staff to develop a framework for ongoing Pittsburgh-Israel exchange. One of its most important outcomes is the launching of a comprehensive quality improvement partnership with Clalit Health Services.

THE FRUITS OF PARTNERSHIP

Informing the U.S. Healthcare Reform Debates: Partnership with the Myers-JDC-Brookdale Institute in Jerusalem

Our visits made clear that Israel's healthcare system had significant relevance to healthcare reform efforts in the United States. In 1995, as the U.S. failed to enact healthcare reform, Israel achieved significant redesign of its healthcare system. In that year, Israel created an overall framework for its healthcare system, provided universal coverage, and delineated a basic benefits package to which all citizens and permanent residents are entitled. Fourteen years later, with government-financed insurance coverage provided through four competing HMOs, Israel's health care per capita costs are half those of the United States and its outcomes in many areas are superior.



Disaster drill at an Israeli military base



Pictured: Ronald Roth, Kelly Close, Adam Tobias, Nancy Zions, and Dan Swayze

Some of the differences between the two systems emerge from a divergence in basic values: in Israel, health care is a "universal good," and society is responsible for making health care available to all its members; while in the U.S., health care is an individual good that is "organized" largely through market forces and includes many for-profit actors. These basically different values set in motion a series of processes in the U.S. that yielded a health sector involving multiple, competitive providers and payers emphasizing high yield, acute care, inpatient health information technology, and expensive medical education, but also cutting edge research & development.

By contrast, Israel's emphasis on social solidarity prompted the development (as early as the 1920s) of organized systems of care focused on improving population health efficiently via an emphasis on primary care, supported by heavily subsidized medical education. In recent decades, the Israeli healthcare system has benefited from major investments in outpatient information technology and the creation of a process for prioritizing investments in new technology that is among the most advanced and transparent in the world.

As the U.S. health reform debates focused on the best ways to move the U.S. toward a more integrated model aligning payment with care delivery and targeting safety, efficiency, access, and quality, we recognized that there was much to learn from Israel, where these concepts were already at work.

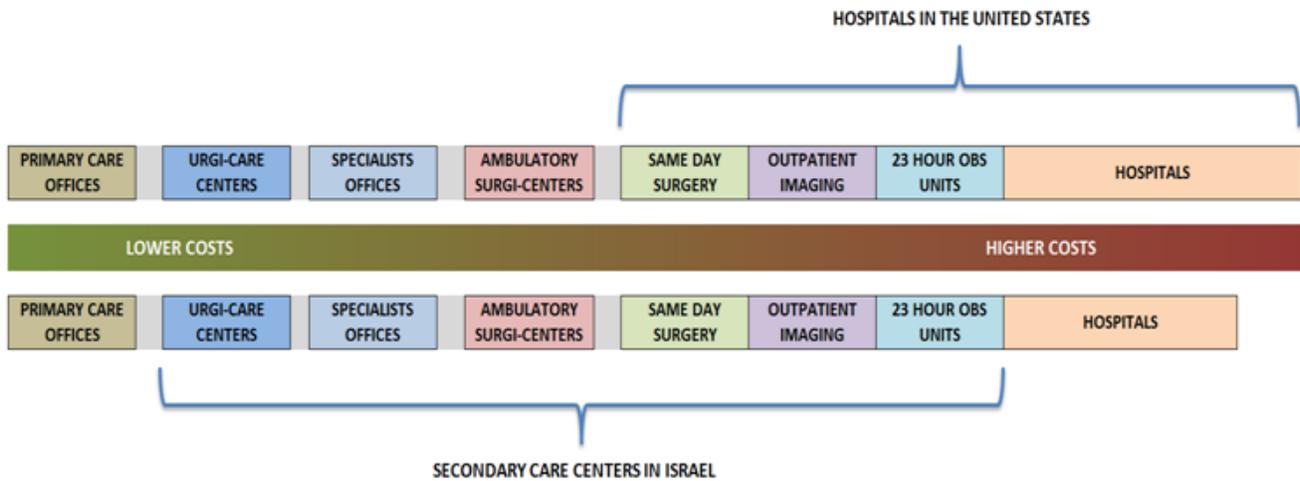
To explore key lessons from the Israeli system for the U.S., JHF engaged the Smokler Center for Health Policy Research at the Myers-JDC-Brookdale Institute in Jerusalem, an affiliate of the American Jewish Joint Distribution Committee, to prepare a series of [monographs](#) comparing the two systems along dimensions critical to ongoing U.S. healthcare reform efforts. The [monographs](#) offer in-depth analyses of how Israel addresses questions that remain at the heart of the transformation of the U.S. delivery system:

1. What is the role of government in containing costs, prioritizing resources within budget constraints, and promoting better services and outcomes of care?
2. How does the overall intent, structure, and financing of Israeli HMOs create incentives for sophisticated primary care delivery models?
3. What are the multiple consequences of low-cost medical education on the healthcare system?

Informing PRHI's Accountable Care Network Project: Israeli Secondary Care Centers

Meanwhile, back in the U.S., we were struggling to develop delivery models that align payments with provider accountability. Among the most promising models continue to be Accountable Care Organizations (ACOs). ACOs are coordinated groups of providers that agree not only to share responsibility for a set of patients, but also agree to share savings achieved by higher quality, and better coordinated and more efficient care. The PRHI search for ACO models appropriate for the Pittsburgh market was informed by what we'd learned on site visits to two secondary care centers in Haifa, Israel.

Clalit Health Services' Lin and Zvulun Medical Centers are specialty care health centers located in Haifa and affiliated with Carmel Hospital. Located in outpatient facilities, they are designed explicitly to bridge inpatient and outpatient care by providing secondary care services. Primary care physicians refer their hard-to-serve patients to the centers for more intensive disease management support. In addition, the centers provide post-discharge services to patients from nearby Carmel Hospital. Patients can consult with multi-disciplinary providers in more than thirty specialty clinics, including ophthalmologists, dermatologists, cardiologists, and neurologists. A sampling of services includes a home ventilation program, drug infusion center, multi-disciplinary pelvic floor center, a diabetes center (including a diabetes foot care clinic), and a heart failure center. Diagnostic tests and treatments are integrated across the facilities, resulting in coordinated treatment. For example, the diabetes centers at Lin



Lin and Zvulun Medical Centers

provide intensive medical care from a team of endocrinologists, dieticians, and nurse coordinators until the patient stabilizes (about two to three months). Because many of the centers’ physicians and nurses are also employed at Carmel Hospital, patients are able to see the same physicians in both settings. The intent is to provide patients with intensive outpatient care, to reduce unnecessary primary care physician referrals of more complex patients to the hospital and reduce the cost of services that are more expensive to provide in inpatient settings, and to allow the hospital to focus on tertiary care.



Pictured: Mark Roberts, Don Fischer, and Norman Mityr

Bringing what we’d learned home to Pittsburgh, in October 2010 we hosted Carmel Hospital’s CEO, Chen Shapira, MD, as the keynote speaker for an evening dedicated to exploring the applicability of an ACO model in Pittsburgh. Attended by over fifty health and policy leaders, the panel reacting to Dr. Shapira’s description of the Lin and Zvulun Medical Centers included Mark Roberts, MD, MPH (professor and chair, University of Pittsburgh Graduate School of Public Health), Don Fischer, MD (chief medical officer at Highmark Inc.), and Norman Mityr (CEO, Heritage Valley Hospital).

Recognizing the promise of this secondary care center model, PRHI recently received \$10.4 million from the Center for Medicare and Medicaid Innovation (CMMI) to develop Primary Care Resource Centers (PCRCs) in six regional hospitals. The PCRCs will operate within hospitals, focusing on effective care transitions of complex patients. Home to intensive chronic disease care managers, the PCRCs, like Israel’s secondary care centers, will offer and coordinate vital ancillary services that are inconsistently available in communities – such as smoking cessation, nutrition counseling, pharmacist consultation, and anticoagulant management.

The Clalit Quality Improvement Partnership

Perhaps the most promising outcomes of JHF’s Israel partnership is our ongoing relationship with Clalit Health Services. As we have seen, JHF’s missions to Israel highlighted many opportunities to learn from Israel’s financing and delivery system, particularly in ambulatory care settings. At the same time, we were struck by the absence of quality and safety initiatives, particularly in hospitals. And so we were delighted to bring PRHI’s special expertise to the relationship.

Over the course of our visits, we encountered leaders aiming to make Clalit's services Israel's best. They were highly motivated to see how PRHI's innovative quality improvement method, Perfecting Patient CareSM (PPC), could help them get

there. To get started, in October 2009, five top physician and nurse leaders from Clalit visited Pittsburgh to experience PPC in action.

They participated in several model PPC training sessions and were exposed to PPC initiatives at the Squirrel Hill Health Center, UPMC Presbyterian Hospital, UPMC Shadyside



Hospital, Allegheny General Hospital, and the Veterans Administration's diabetes clinic. They observed the power of PPC methods to reduce hospital infections, improve hospital readmission rates, and improve chronic care management – and left committed to bringing these methods to Israel.

On a subsequent visit to Israel in December 2009, JHF staff identified some key Clalit institutions in Israel with strong and committed leadership (including Carmel Hospital in Haifa, which serves 60% of inpatients from the Karmiel-Misgav region) that could be targets for a PPC improvement effort. A competitive selection process, managed by Ran Balicer, MD (director of health policy, research and planning of Clalit Health System), identified five teams – each with a physician and a nurse – to manage pilot improvement projects. Three of the teams would focus on reducing central line associated blood stream infections (CLABSIs) in hospital dialysis units. Two outpatient teams would focus on improving heart attack patients' participation in cardiac rehabilitation programs after discharge.

The ten travelled to Pittsburgh in the fall of 2010 for an intensive introduction to PPC methods. The curriculum for PPC University was customized to include components seen as essential for a successful “long-distance” implementation of PPC in Israel:

- Reflecting on the fact that teams would be expected to return to Israel and serve as “experts” or trainers for their own institutions, PPC University was designed as a “train the trainer” program.
- Participants were introduced to Tomorrow's HealthCare™(THC), JHF's web portal for conveying PPC training, supporting quality improvement projects, and sharing learnings. Developed as a way of connecting teams separated by floors – or by oceans – THC conveys core knowledge on implementing quality improvement projects.

Clalit Team Leaders Visit Pittsburgh

HOSPITAL TEAMS

Meir Hospital:

Beatriz Gerber, RN, MHA – infection control nurse
Pnina Shitrit, MD – senior physician, infectious disease department

Ha'Emek Hospital:

Bibiana Amalia Chazan, MD – senior physician, infectious disease department

Yehudit Hayat, RN MHA – coordinator of patient safety and medical risk management

Carmel Hospital:

Gabriel Weber, MD – head, infectious disease department
Bruria Moshits, RN, MHA – deputy nursing director

COMMUNITY TEAMS

Clalit Northern District:

Yoel Oppenheimer, MD – head, quality assurance
Bruria Rikone, RN – nursing supervisor

Clalit Jerusalem District:

Mariana Mazar, MD – deputy medical manager
Tamar Frisch, RN – deputy nursing manager

CLALIT ADMINISTRATIVE STAFF

Carlos Gruzman, MD – head, department for hospitalization services

Ayala Mordechai, RN MHA – head, department for quality in nursing

Giora Werber, MD – deputy director, medical branch; head, primary care and family medicine

Chen Shapira, MD, MPA – CEO, Lady Davis Carmel Medical Center in Haifa

JHF-Clalit Partnership

Coordinator:

Ran Balicer, MD, PhD, MPH – director of health policy, research and planning

- Coaches from the PRHI staff were assigned to the teams – a model that would later be enhanced by hiring an on-the-ground coach in Israel.



Clalit teams and JHF Staff in Pittsburgh, October 2010

Upon their return to Israel, the five teams briefed their managers and began applying PPC tools and techniques to improvement opportunities in each of their work settings. They practiced essential PPC problem-solving skills, including observation, current condition mapping, and problem identification. The initial goals selected by the teams were ambitious and – as is common in early quality improvement work. There are no short cuts to major outcomes that do not involve small, sequential improvement steps.

Further, participants grappled with common barriers to designing and implementing improvement strategies. All the teams confronted the difficulty of identifying baseline data against which improvements could be measured and had to invent their own methods for collecting data to monitor ongoing changes. Beyond increasing participation in post-discharge cardiac rehab programs, the Northern district team confronted the much larger problem of the lack of availability of such programs in their geographic area.

As each group struggled with these barriers, important improvement opportunities emerged:

As a result of PPC training, the use of central lines to deliver hemodialysis has dropped from 50% to 20% of dialysis patients.

1. First, the three hospitals teams discovered that the way each measured baseline CLABSI rates was very different – an “ah-ha” moment that contributed to an ongoing Clalit-wide effort to standardize the process of infection data collection.
2. Second, until the hospital teams attempted to measure central line infections, Clalit leadership had no idea how many patients were inappropriately receiving hemodialysis via central lines (rather than via the safer arteriovenous (AV) fistula). This awareness led to action, and the rate of central line delivered dialysis has dropped from 50% to 20% of Clalit dialysis patients.
3. Third, observations at all three hospital demonstrated that nurses each use different dialysis connection processes; some even vary their processes from patient to patient. In addition, the time to make the connection is longer than necessary (increasing infection risk) because of the need to collect equipment from multiple locations. As a result, representatives from all three hospitals collaborated to design a standard dialysis connection kit. Preliminary simulations show that connection time will drop by a third, from fifteen to ten minutes.



Stacie Amorose and Yifat Lavi, PPC coaches for Israel Initiative

Overall, as the teams expanded to include other providers involved in patient care, they confronted the difficulty of bringing PPC training to new team members to ensure a common quality improvement language and approach. By the spring of 2011, all recognized the pressing need for more, on-site training – in Hebrew.

As a result, in September Clalit hired Yifat Lavi, a black belt in Six Sigma and Lean Manufacturing, to provide face-to-face coaching and support. To ensure a seamless transition, Lavi received intensive training in PPC methods and continues to be mentored by Stacie Amorose, PRHI’s director of Lean healthcare strategy and application.

JHF staff site visits in November 2011 confirmed the need for broader staff training as well as the importance of ongoing leadership engagement – both common conundrums of the quality improvement process across the world. Planning commenced for much-expanded PPC training at Clalit and at each of the five pilot sites – which ultimately occurred in July 2012.

PPC TRAINING GOES INTERNATIONAL

To guarantee success of the July 2012 PPC training, co-planners Lavi and Amorose understood that the training needed to bridge cultural and linguistic differences. All PPC University content was translated into Hebrew and the hands-on exercises were customized to resonate with Israeli participants. In addition to pilot site-specific training (described below), the result was a two-day *Introduction to PPC* course for Clalit clinic and hospital unit leaders and corporate representatives from the nursing and quality division, geared toward the learning needs of Israeli participants. As a result, this final, stand-alone training module can be replicated by Clalit.

Leadership Training

The initial, system-wide training took place at Carmel Hospital in Haifa. Twenty-two participants from five hospitals, two community sites, and corporate headquarters attended. In addition to Lavi and Amorose, Ran Balicer helped to lead the training. As important as conveying PPC concepts, such as types of waste, process mapping, rules of work design, workplace organization, and work standardization, were the many meaningful discussions catalyzed by “ah-ha!” moments. Examples of PPC in action in the U.S. highlighted the typical disconnect between what staff think should be happening in patient care, and what is actually happening at the front line. It was a great lesson that demonstrated the value of observing firsthand how work is actually being done.

Several PPC training tools (e.g., a video about a CLABSI project in the U.S.) highlighted problems that resonated with the Israeli staff. For example, nurses pointed to poor communication and a lack of care coordination among nurses and doctors in hospitals and encouraged the group to think about how this could be improved. Michal Ronen, MD, head of a Clalit primary care clinic, concurred: “I am already thinking about where I can apply these ideas in my clinic.”

Many participants shared personal stories of how they could apply the new PPC concepts to thorny workplace challenges. The training featured an intensive *kaizen* activity – a Japanese term that refers to an intensive quality improvement cycle. The participants, divided into groups of four, observed workflow in a primary care physician’s office. The groups worked together to identify opportunities for improvement and devise a innovative solutions to the opportunities identified by the observations.

A final PRHI “Lego Factory” simulation brought all of the PPC concepts together into a systems-view. This simulation of manufacturing allows participants to practice continuous improvement by making small changes in successive “manufacturing” runs that, together, yield drastic improvements to quality and financial results. It is a great opportunity for participants to practice each of the concepts and see how small steps can ultimately transform an entire organization.



University participants searching for the right components to build parts in their Lego factory

We are pleased to report overwhelmingly positive evaluations of the training. Comments from the participants included pure astonishment at the level of training detail, the Hebrew translations, and the learning activities. Many expressed the wish that the training was longer. Margalit Goldfracht, MD, director of quality for the Community Division said, “I am now convinced this should become the cornerstone training of all regional quality directors starting this coming year.” This was a testament to the value gained from PPC training and JHF’s investment in this international partnership.

Hospital Pilot Site Trainings

Following the two-day leadership training, one-day *kaizen* events were scheduled at the three hospitals' pilot sites. Prior to each event, teams conducted observations of current workflow and identified opportunities for improvement. The primary goal of each *kaizen* was to help each team break down the many improvement opportunities identified by their observations into small, manageable, rapid changes that could yield some big wins and enhance the motivation of other staff to apply PPC methods more broadly.

Meir Hospital, Kfar Saba: The team at Meir spent the previous six months working to understand and improve the way nurses provide care in the dialysis unit. Although multiple opportunities for improvement were identified, the team was having difficulty designing, organizing, and prioritizing improvement efforts. The *kaizen* event helped the team to identify five opportunities for improvement, to create A3s (the A3 process is a Lean tool for getting a problem, analysis, corrective action, and action plan written down on a single sheet of large paper) for each countermeasure, and to identify metrics that would help them measure progress in each category.

Ha'emek Hospital, Afula: The team at Ha'emek Hospital wanted to improve their dialysis treatment form. This form contains both the original physician orders for dialysis treatment as well as daily documentation on those orders. Upon observation, it became obvious that the current process was encumbered with non-value added and duplicative work, which was resulting in errors. Through documentation of the problem, agreeing on metrics, mapping the current condition, and root cause analysis, the team improved the form, minimizing the opportunity for error. An electronic version of the paper template was developed and piloted at the end of 2012.

Carmel Hospital, Haifa: The Carmel Hospital team took a slightly different approach in using PPC to look at the more global problem of supply chain management. Experts from the hospital's supply chain department participated in the *kaizen* event to evaluate opportunities for improvement in the ordering and storage of supplies. Although challenged by a mix of PPC-literate staff and PPC-newcomers, the group successfully designed an A3 around the ordering process. Next steps involve evaluating the system-wide barriers to optimal supply chain management.



CEO of Carmel Hospital Chen Shapiro, MD, chats with medical staff

Community Pilot Site Trainings

In addition to conducting *kaizens* at the three participating hospitals, Amorose and Lavi visited the two community teams to assess achievements and identify coaching needs moving forward.



At Clalit's Lin Specialty Clinic

Northern District, Nazareth: Spurred on by the early finding that cardiac rehab services were almost non-existent in Northern Israel, the team shared the news that a new cardiac rehabilitation center opened in February 2012 and plans were on the table to add two more programs. Staffed by a nurse case manager, the rehabilitation center aimed to recruit one-hundred patients in 2012. Only halfway through the year, nearly 170 patients had been referred to the program. As part of their training, the nurse case managers staffing the new centers were taught PPC methods for observing workflow and standardizing services. At this visit, the new case managers had already identified multiple opportunities to use such tools to enhance to their workflow and improve communication with patients.

Jerusalem District, Jerusalem: The Jerusalem team focused on improving transitions of care between the hospitals, cardiac rehabilitation centers, and primary care clinics. Unlike in other parts of Israel, there are no Clalit hospitals in Jerusalem. Patients receive hospital services in one of three nonprofit, independent hospitals, making it difficult for the team's nurse care manager (who is fluent in both Hebrew and Arabic) to receive and track patient referrals. Additionally, the rehab centers are affiliated with the hospitals. Despite the resulting data collection and coordination challenges, the Jerusalem team developed a year-long relationship with the cardiac rehabilitation centers and has achieved impressive results. The percentage of heart attack patients entering a cardiac rehabilitation program following hospital discharge jumped from 30% to 88% in the last six months of 2011 (2012 data pending). Further, patient wait times for getting into a cardiac rehabilitation program have dropped from an average of seventy days to thirty-six days. The team aims to drop this further, to no more than seven days. The team's next step is to tackle data collection and validation challenges to get an accurate understanding of the patient outcomes of the rehabilitation programs.

Looking Ahead

At the conclusion of the July 2012 PPC training in Israel, Lavi and Amorose met with Clalit leadership at corporate headquarters in Tel Aviv to debrief on the training and consider next steps. Especially important to JHF, as reflected in its recently published book, "Moving Beyond Repair," was gauging Clalit's interest in leveraging the power of a Lean-based method like PPC to transform not just a dialysis unit, but its whole system of care. The meeting was led by Haim Bitterman, MD, chief physician; Ran Balicer, MD, director of health policy planning & director of Clalit Research Institute; and Lilly Perelman, chief nursing officer of Clalit's hospital division. Participants included representatives from both the hospital and community divisions.



Quality improvement team at Ha'emek Hospital in Afula speak with JHF President & CEO Karen Feinstein and researcher Susan Elster

Among the attendees was Mina Rotem of the Community Division. She had attended the PPC training the previous week and conveyed her confidence that it could be applied more widely in Clalit moving forward. Rotem noted that she had learned other models of quality improvement, but that PPC was different in that she was able to understand how she could make an impact immediately, saying, "I've already talked about implementing this methodology in many more places, and I also intend on teaching managers and medical staff the principles of PPC."

- Attendees agreed and concluded the meeting by identifying some firm goals for 2013. Specifically: The hospital division will spread the achievements of the three pilot hospital dialysis units to those in the other eleven Clalit hospitals.
- The hospital division will begin planning for additional projects to reduce central line infections in hospital intensive care units and emergency departments.
- Similarly, the community division will ensure that other regional primary care centers replicate the patient finding, cardiac rehabilitation referral, and engagement processes developed in the Jerusalem and Northern Districts.

CLALIT HEALTH SYSTEM

One of four Israeli health plans, Clalit Health Services is the largest, with 3.8 million insured members, or over half of the Israeli population. Clalit maintains twelve general and special care hospitals, which include two psychiatric hospitals (each with ambulatory as well as inpatient care), a full care rehabilitation hospital, and two long-term care hospitals with rehabilitation and nursing facilities for the chronically ill and the aged. It also runs more than 1,200 primary and specialized clinics, dental clinics, and a network of 400 pharmacies.

Clalit Health Services employs as salaried personnel the nurses, doctors, teachers, researchers, and administrators who staff its hospitals and clinics, including 7,500 physicians, 11,500 nurses, 1,300 pharmacists, 4,400 paramedics and laboratory/imaging technicians, and 9,400 administrative personnel.

Beyond spreading the current successes, the longer-term goal will be to engage Clalit's medical staff in additional, system-wide quality improvement initiatives. Discussions are ongoing about how to make this a reality. We are especially interested in adding PRHI's expertise in training and coaching to work with Clalit as they implement infection reporting systems in an effort to eliminate healthcare-associated infections, including superbugs. Despite the challenges of managing an international quality improvement partnership and multiple pilot initiatives, the Clalit partnership may yet yield system-wide fruits. As Lilly Perelman, head nurse of the hospital division, put it, "All you accomplished has the potential of creating a true revolution..."

SPEAKING ENGAGEMENTS: PRHI'S ISRAEL DEBUT

Fourth International Jerusalem Conference on Health Policy, Jerusalem (December 2009)

JHF was a lead co-sponsor at this prestigious international gathering in December 2009, organized by the Israel National Institute for Health Policy Research. Karen Feinstein presented, "The Role of a Regional Initiative in Health Policy, USA," at the conference and was invited to submit her talk for post conference publication. The three day event brought together hundreds of Israeli, American, and international health policy thought leaders and practitioners at the forefront of policy leadership worldwide, including:

- Professor Ran Balicer, Director of Clalit Research Institute
- Stephen Birch, McMaster University, Ottawa
- David Chinitz, Hadassah Medical Center
- Ezekiel Emanuel, National Institutes of Health
- Alan Garber, Stanford University
- Regina Herzlinger, Harvard School of Public Health
- Professor Avi Israeli, former Director General, Israel Ministry of Health
- Harold Luft, University of California, San Francisco
- Alan Maynard, University of York, UK
- Bruce Rosen, Director of Myers-JDC-Brookdale Institute's Smokler Center for Health Policy Research
- Richard Saltman, Emory University
- Chen Shapira, Carmel Medical Center, Haifa
- Stephen Shortell, University of California, Berkeley
- Shlomo Mor Yosef, former CEO of Hadassah Medical Organization and current Director General of Israel's Bituah Leumi National Insurance Institute.

Israel Society for Quality in Health Care (November 2011)

Karen Feinstein presented the keynote address, "Can Industrial Engineering Perfect Patient Care?" at the Israel Society for Quality in Health Care's annual conference. With 700 attendees – Israel's largest annual healthcare conference – Feinstein challenged Israeli healthcare providers to build on their high-achieving healthcare system by eliminating waste and errors. Primed by the Feinstein lecture, conference attendees were better prepared to receive the first public report on surgical site infections in Israel – confirming that high infection rates aren't only a U.S. problem.



Karen Feinstein presents keynote to 700+ healthcare professionals at Society for Quality in Health Care conference.