Best Practice

Continuous Process Improvement’s Impact in Healthcare Facilities

MAJ Rod Fuentes

Executive Summary:

Current Army doctrine does not mandated the use of a dedicated Continuous Process Improvement department within its hospitals. This results in the Army not seeing millions in cost savings and avoidance each year. Institutionalizing a dedicated CPI department within Army facilities would mean improvements in products, services and processes.

Point of Contact:

MAJ Ian Lee
Office of CPI/Innovations
Email: Ian.Lee.mil@health.mil
Phone: 301-380-1376
Disclaimer

This Best Practice is submitted to fulfill the graduation requirements for the Army/Baylor Masters in Healthcare Administration program located at Fort Sam Houston, TX. None of the content, opinions or conclusions is that of Baylor University, The Army Medical Command, The Army Medical Department Center and School or Walter Reed National Military Medical Center.
### Competencies Addressed

- Decision Making
- Change Management
- Quality Management and Performance Improvement
- Outcomes measurement
- Patient Safety
Objective of the Best Practice: The role of the Continuous Process Improvement (CPI) and Innovations department at Walter Reed National Military Medical Center (WRNMMC) is set up to provide cost savings and avoidance while consistently improving products, services and processes. As WRNMMC demonstrates, having staff dedicated to CPI/Innovations has proven to be very effective. This allows hospital leadership at all levels to improve products they deliver on a continuous basis. Having a dedicated staff overseeing the CPI/Innovations efforts throughout the hospital allows for each department to deliver its best medicine at the lowest financial cost without reproduction in excess procedures and eliminating waste. Through this method, optimal quality is assured each and every time healthcare is delivered.

Background: In May 2008 the Department of Defense (DoD) issued Directive number 5010.42. This directive served as guidance to all DoD branches to establish a CPI/Lean Six Sigma (LSS) program (DoD, 2008). This approach was meant to be the primary means to assess and improve overall effectiveness of the DoD processes in place that support its national defense mission. The intent of the CPI/LSS program initiative was to strengthen the military’s capabilities and improve Productivity, Performance, Safety, Flexibility and Energy Efficiency. The directive afforded each DoD component flexibility in adopting other program elements as required. Understanding there were diverse operational requirements, each DoD component was given the opportunity to identify CPI/LSS focus areas, as well as incorporate different CPI/LSS program elements for their use. Each DoD Component was encouraged to use CPI/LSS methods to improve the products, services and processes that make up their operations from end to end. This included each DoD component engagement with industrial base suppliers. In doing this, the resource benefits, which resulted from a CPI/LSS improvement episode, could be retained by the benefit producing DoD Component. Management of the CPI/LSS program was meant to reinvest in additional CPI/LSS efforts, recapitalization, and strengthening of operational capabilities.

One year later, the Department of the Navy (DON) issued its own instruction for implementation methods nested within the DoD’s initial guidance (DON, 2009). This instruction memorandum established policy to institutionalize CPI as a primary enabler in managing the Navy’s processes in support of the department’s national defense mission. It authorized direct oversight and guidance of CPI activities across the DON by the Deputy Chief Management Officer. Organizations within the DON were directed to develop and sustain their own organic manpower trained in CPI/LSS methodologies.

In April 2011, the DON Bureau of Medicine and Surgery (BUMED) issued specific guidance to its regional Commanders, Naval Medical Support Command and Commanders of Navy Medical Facilities (DON, 2011). Of particular interest is BUMED’s guidance to the ladder. It stated that Commanders would identify and appoint a minimum of two Black Belts (BB) for medical centers and one BB for family practice teaching hospitals. BUMED’s guidance also allocated a .5 to 1.0 full-time equivalent (FTE) utilization of these BB’s. The establishing of FTE’s for BB’s was to appropriately utilize these personnel to generate measurable financial and
mission benefits that yielded at a minimum 2:1 return on investment (ROI). Prior to the BRAC integration in Oct 2011, the National Naval Medical Center (NNMC) had followed this guidance by creating a department of CPI/Innovation and assigned a BB to spearhead this effort to improve its products, services and processes of medical delivery and patient safety. Since the merger of Walter Reed Army Medical Center (WRAMC) and NNMC in 2011, this office continues to thrive in the new WRNMMC.

**Literature Review:** The idea of a best practice in healthcare is becoming antiquated and not easily replicated across health systems or services. Mark Chassin, M.D., president of the Joint Commission advocates the development of comprehensive process improvement tools (H&HN Daily, 2012). This includes LSS or CPI, which allow for deeper and more specific analysis of each systems and processes in place. Each organization is different, and causal factors that led to a failure at one institution may be different at other locations. If causes for failure are different, we cannot expect a best practice to work universally. One organization embracing this idea is the Seattle Children’s Hospital, who adopted CPI as a means for removing waste while improving quality and patient safety (seattlechildrens.org). This is evident in their 3.7% reduction in cost per patient, total parenteral nutrition medication error rates reduced by 66%, 20% less patient time in the ICU, and $180 million in capital avoidance.

More civilian hospitals are instituting their own version of LSS/CPI, and leveraging it to meet their requirements. Kaiser Permanente is just one example that has taken ideas from LSS/CPI and created their own Performance Improvement Institute (kpnet.kp.org). Healthcare is inherently complex and typically organized around functions, but Virginia Mason Medical Center (VMMC) has taken CPI like steps in reducing the ambiguity to make change a regular part of work (Spear, 2005). VMMC has created different processes in its efforts to improve various divisions. It has created its own patient safety alert process, reduced patient contracted pneumonia claims by over $400,000 in two years, and lowered professional liability claims from 363 to just 47 in two years as well. Capital costs avoidance totaled over $3 million through its CPI initiatives. Through this and other quality initiatives, VMMC and other hospitals across the country are achieving greater than 90% composite rates for accountability measures and reducing inpatient deaths (American Hospital Association, 2012).

**Implementation Methods:** In early 2008 following the DoD Directive 5010.42, the DON trickled their guidance on the matter all the way down to the hospital level. At the time, the NNMC took the guidance and established the office of CPI/Innovation and staffed it with one BB person. The hospital CPI/Innovation office, in conjunction with BUMED Master Black Belts (MBB), established policy and guidance on staff training, project selection and overall functionality of the department. Upon institutionalization, it was established that individual clinics and directorates would select personnel to become Green Belts (GB). By selecting personnel in this manner, each clinic and directorate was afforded the opportunity to have a GB trained staff member in their clinic/department to work on their individual and unique projects. The role of the NNMC CPI/Innovations department became that of oversight and mentor to GB’s
in project selection, charter formation and overall completion of their work through CPI methods. The BB in this position is also responsible to oversee the hospital’s CPI portfolio and recommend improvements to the hospital board of directors (BOD) and Command group. The NNMC also took the most recent guidance set forth in April 2011 and established a 1 FTE allocation for a BB to officially run the CPI/Innovations department. Through this latest implementation scheme, the hospital can now request personnel to fill this specific allocated slot rather than take from other hospital resources. This also has the added benefit of the BB running the CPI/Innovations department to be rated as such and serve in a capacity that grants quick and easy access to the hospital Commander.

Due to the consistent turnover common to any military facility/organization/unit, WRNMMC teaches its own GB course to ensure it keeps a healthy stable of personnel trained in these methodologies. This course is taught by WRNMMC staff members and not through private contractors, allowing the CPI/Innovations department to remain flexible to the hospitals needs and training requirements. The GB course is also more medically focused and geared towards medically minded personnel. This paradigm shift, from traditional instruction dealing with manufacturing and line production methodologies, focuses more on the clinical workplace. Adopting this philosophy of instruction becomes more relevant to its base of medical personnel.

Results: From inception in 2008 through FY 2012 the WRNMMC CPI/Innovations department has saved the hospital over $33 million in total and avoided costs. These results have generated an 11:1 ROI, far exceeding the standard of 2:1 set forth by BUMED in April 2011. The program has garnered several accolades, such as highest ROI and cost savings within the DoD. Many hospital personnel are eager to become trained as GB’s and contribute due to the real and immediate impacts they see around them stemming from CPI/Innovation efforts. The ranks of currently trained BB and GB personnel have grown to 1% and 5% respectively at WRNMMC.

This department has also completed over 300 projects and is able to track them in Powersteering, which keeps the department sustainable. By viewing these results over time, the WRNMMC CPI/Innovations department has built on the body of knowledge and is able to perform Rapid Improvement Events (RIE). These Kaizen events have proven to be beneficial, as they do not require weeks to complete, and cater to frontline staff members in addressing a specific problem that may have already been dealt with in the past. Were it not for the CPI/Innovations department use of Powersteering, new personnel would need to charter a project every few years to address the same issue personnel who have either retired, transferred or switched departments have dealt with in the past. With this in place, the BB can review the portfolio of historical projects already completed and apply it through a RIE or Kaizen event.

Conclusion: WRNMMC shows what a robust and highly functioning CPI/Innovations department is capable of. This demonstrates the potential a BB solely focused on CPI and innovation can have in Army hospitals. According to COL Koelsch, Chief Knowledge Management Officer and Master Black Belt for MEDCOM, there are currently no established
FTE, LSS department or office dedicated to CPI/Innovations at the hospital level within MEDCOM (Personal communication, April 19, 2013). Without this requirement, each hospital is left to decide how and if they want to implement such a strategy. Often times, black and green belt hospital personnel do not have local resources to guide or mentor them through a project, thus leaving room for error in the process. Further complicating matters is the fact that no one person is responsible for tracking the portfolio of projects at any Army Hospital.

The MEDCOM’s current strategic use of MBB’s is not enough, because at the regional level it does not provide adequate supervision of a hospitals’ portfolio or its GB’s. This does not provide the “boots on the ground” perspective to appropriately mentor GB’s and manage an extensive portfolio of projects any one hospital is able to generate. Nor does the Army’s current CPI personnel structure afford hospital Commanders with someone that answers directly to them for all process improvement efforts within their facility. The Army should leverage current resources such as the MBB’s at the regional level to provide hospital Commanders with guidance on resources needed to support such a department. As WRNMMC has shown, these personnel will pay for themselves through the extensive cost savings and avoidance they will generate. If we want to become a high reliable organization we need to take a page from the Navy and implement a CPI/Innovations department that is appropriately staffed with the right personnel, selecting projects that fill performance gaps in our organization’s strategy at the hospital level. Selecting from an abundance of off the shelf or newly discovered “best practices” may or may not work, depending on the cause variables, institutional setting, leadership philosophy or size and scope of the problem originally presented. The likelihood of maintaining a best practice over time in a military facility is complicated by the high rate of staff turnover designed into the fabric of every military facility/organization/unit. However, by institutionalizing a dedicated CPI/Innovations department into the Army’s hospital organization, each facility will add to their own knowledge base and reap the benefits of improvements to products, services and processes that are unique to them and not another facility half a world away.
References:


