

Excerpt from *Lean Hospitals, 3rd Revised Edition* (Publication Date, June 2016)
www.LeanHospitalsBook.com

...there are now many examples of the positive impact Lean is having in hospitals throughout the world. As a sample, Lean methods have resulted in improvements to:

Safety and Quality

Reduced central-line-associated bloodstream infections by 76%, reducing patient deaths from such infections by 95% and saving \$1 million—*Allegheny Hospital, Pennsylvania*ⁱ

Reduced hospital acquired infections, saving 57 lives, reducing ICU length of stay and reducing costs by over \$5 million over two years —*University of Pennsylvania Medical Center*ⁱⁱ

Reduced readmission rates for chronic obstructive pulmonary disease (COPD) patients by 48%—*UPMC St. Margaret Hospital, Pennsylvania*ⁱⁱⁱ

Reduced falls by 22%, reducing costs by more than \$500,000 – *Hanover Regional Medical Center, North Carolina*^{iv}

Reduced pressure ulcers by 56% in three pilot areas over two years, with a 30% decrease system-wide – *BJC Healthcare, Missouri*^v

Avoidance of 87 readmissions for congestive heart failure in 12 months across four hospitals, saving \$830,000 – *Four hospitals in California*^{vi}

Reduced sepsis mortality from 24% to 9%, reducing the average cost per case from \$15,772 to \$12,771 – *Presence Health, Illinois*^{vii}

Waiting Times and Length of Stay

Reduced patient waiting time for non-emergent orthopedic surgery from 14 weeks to 31 hours (from first call to surgery); improved inpatient satisfaction scores from 68% “very satisfied” to 90%—*ThedaCare, Wisconsin*^{viii}

Reduced emergency patient length of stay by 29% and avoided \$1.25 million in new emergency department (ED) construction—*Avera McKennan, South Dakota*^{ix}

Reduced waiting times for screening colonoscopies from 6 weeks to less than 24 hours while reducing cost per patient by 9.5% — *Palo Alto Medical Foundation, California*^x

Increased the percentage of atrial fibrillation patients treated within 40 days from 11% to 94% *HealthEast, Minnesota*^{xi}

Flow

Reduced turnaround time for clinical laboratory results by 60% in 2004 without adding head count or new instrumentation; further reduced times by another 33% from 2008 to 2010—*Alegent Health, Nebraska*^{xii, xiii}

Reduced instrument decontamination and sterilization cycle time by 54% while improving productivity by 16%—*Kingston General Hospital, Ontario*^{xiv}

Reduced late surgery starts from 50% to 30%, reduced rescheduled procedures from 20% to 4.4%, while increasing cases per month from 329 to 351 – *New York City Health and Hospitals Corporation*^{xv}

Reducing O.R. turnover time from 60 minutes to 30 minutes, increasing utilization rates from 25% to 65% and achieving 100% on time starts in a pilot area – *Guangdong Provincial Hospital of Traditional Chinese Medicine, China*^{xvi}

Satisfaction

Improved patient / family satisfaction rates in the NICU from 45th percentile to 99th percentile – *Franciscan St. Francis, Indianapolis*^{xvii}

Improved physician satisfaction from 63rd percentile to 87th, being highest rated in overall care among 170 California medical groups for two consecutive years – *Sutter Gould Medical Foundation, California*^{xviii, xix}

Improved emergency department patient satisfaction from 5th percentile to 98th percentile in just four months (through door-to-doc times falling from 67 to 18 minutes) – *Sumner Regional Medical Center, Tennessee*.^{xx}

Financial

Bottom-line benefit of almost \$200 million over seven years, while achieving “the lowest observed-to-expected mortality among the academic health center members of the University Health system Consortium in 2011” and avoiding layoffs—*Denver Health, Colorado*^{xxi}

Avoidance of \$180 million in capital spending through Lean improvements—*Seattle Children’s Hospital, Washington*^{xxii}

Improved operating margin by 44%, from 1.70% in fiscal year 2011 to 3.06% in fiscal year 2014 —*HealthEast, Minnesota*^{xxiii}

ⁱMcCarthy, Douglas, and David Blumenthal, M.D., “Committed to Safety: Ten Case Studies on Reducing Harm to Patients,” The Commonwealth Fund, <http://www.commonwealthfund.org/publications/fund-reports/2006/apr/committed-to-safety-ten-case-studies-on-reducing-harm-to-patients> (accessed March 26, 2015).

-
- ⁱⁱ Martin LA, Neumann CW, Mountford J, Bisognano M, Nolan TW. *Increasing Efficiency and Enhancing Value in Health Care: Ways to Achieve Savings in Operating Costs per Year*. IHI Innovation Series white paper. Cambridge, Massachusetts: Institute for Healthcare Improvement; 2009.
- ⁱⁱⁱ California Health Advocates, "Creative Interventions Reduce Hospital Readmissions for Medicare Beneficiaries," October 7, 2010, <http://www.cahealthadvocates.org/news/basics/2010/creative.html> (accessed March 26, 2015).
- ^{iv} Barto, Jack, "CEO Blog: Avoiding patient falls: Where patient safety meets cost reduction," <http://www.nhrmc.org/body.cfm?id=2293&action=detail&ref=1085#sthash.JYEqkbCA.dpbs> (accessed September 12, 2015).
- ^v [Lean Tools Used to Reduce Pressure Ulcers](http://www.hret-hen.org/index.php?option=com_phocadownload&view=category&download=1305:barnes-jewish-christian-hospital-saint-louis-mo&id=283:pressure-ulcers-case-studies), http://www.hret-hen.org/index.php?option=com_phocadownload&view=category&download=1305:barnes-jewish-christian-hospital-saint-louis-mo&id=283:pressure-ulcers-case-studies
- ^{vi} Wu, Shinyi, Pai Liu, and David Belson, "Multiple-Hospital Lean Initiative to Improve Congestive Heart Failure Care: A Mixed-Methods Evaluation," *Journal of the Society for Healthcare Improvement Professionals*, <http://www.jship.org/articles/vol-3-articles-october-2013/multiple-hospital-lean-initiative-to-improve-congestive-heart-failure-care-a-mixed-methods-evaluation-2/> (accessed September 12, 2015).
- ^{vii} Rice, Sabriya, "Learning to be Lean," <http://www.modernhealthcare.com/section/learning-to-be-lean> (accessed October 22, 2015).
- ^{viii} Toussaint, John, and Roger Gerard, *On the Mend: Revolutionizing Healthcare to Save Lives and Transform the Industry* (Cambridge, MA: Lean Enterprise Institute, 2010), 29.
- ^{ix} ValuMetrix Services, "Avera McKennan," Case Study, http://www.valumetrixservices.com/sites/default/files/client_results_pdf/CS_Avera%20McKenna_ED_OC4047.pdf (accessed March 26, 2015).
- ^x Maser, Ben and Osman Akhtar, "PAMF's Ambulatory Surgery Center: A Value Stream Approach to Improvement," Presentation at 2015 Lean Healthcare Transformation Summit, June 2015.
- ^{xi} <http://www.benzinga.com/pressreleases/15/06/p5606947/healthcare-value-network-members-share-new-quarterly-results#ixzz3dW7OMAID>
- ^{xii} ValuMetrix Services, "Clinical Laboratory Improves Turnaround Time by 60%," Case Study, http://www.valumetrixservices.com/sites/default/files/client_results_pdf/CS_Alegent_Lab_OC4029.pdf (accessed March 26, 2015).
- ^{xiii} Ford, Anne, "Thanks to Weak Economy and More, Efficiency Is King," *CAP Today*, April 2010, <http://inbg.us/20T> (accessed March 26, 2015).
- ^{xiv} Letteroff, Lewis, and Mark Graban, "Lean and Process Excellence at Kingston General," *SME Lean Manufacturing 2008*, 53.
- ^{xv} Rice.
- ^{xvi} Guo, Jinshai, Shijun Ma, and Xun Zhang, "Lean management to transform a Chinese hospital," <http://www.planet-lean.com/lean-management-to-transform-a-chinese-hospital> (accessed October 27, 2015).
- ^{xvii} Graban, Mark, "[Gemba in the NICU: More Notes from our "Kaizen Live" Experience at Franciscan,](http://www.leanblog.org/2015/05/gemba-nicu-notes-kaizen-live-experience-franciscan/)" <http://www.leanblog.org/2015/05/gemba-nicu-notes-kaizen-live-experience-franciscan/> (accessed September 12, 2015).
- ^{xviii} Graban, Mark, "Podcast #230 – Paul DeChant, MD, MBA on Reducing Burnout Through Lean," <http://www.leanblog.org/230> (accessed September 20, 2015).

^{xix} Consumer Reports Health, "How Good Is Your Doctor?," *Special Report for California Residents*, February, 2015.

^{xx} No author, "Slash door-to-doc time, boost patient satisfaction with staff-driven improvement effort," *ED Manag.* 2011 Jun;23(6):70-1.

^{xxi} Gabow, Patricia, *The Lean Prescription: Powerful Medicine for an Ailing Health System* (New York: Productivity Press, 2014), xix.

^{xxii} Weed, Julie, "Factory Efficiency Comes to the Hospital," *New York Times*, <http://www.nytimes.com/2010/07/11/business/11seattle.html>, July 10, 2010 (accessed March 26, 2015).

^{xxiii} <http://www.benzinga.com/pressreleases/15/06/p5606947/healthcare-value-network-members-share-new-quarterly-results#ixzz3dW7OMAID>