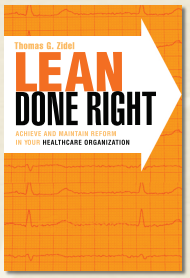
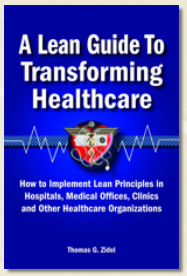
Lean Six Sigma is the combination of two proven improvement methodologies designed to create efficient and effective change. Derived from the Toyota Production System, lean provides proven concepts which enable organizations to focus on the elimination of waste and improve flow in the value stream. Lean incorporates kaizen, which is continuous incremental improvement. Implemented implemented with a bias for action necessary to providing results.


Six Sigma incorporates the DMAIC (Define, Measure, Analyze, Improve and Control) methodology which utilizes rigorous statistical analysis to expose root causes to understand and reduce process variation. An effective combination of lean and six sigma focuses on value adding process steps provided by lean, which is, in turn, reinforced by the data-driven methods incorporated by six sigma. Together these methodologies provide the most value to the customer and the organization.

Tom Zidel is president of Lean Hospitals, a consulting company, which provides consulting, facilitation and training to healthcare organizations. With more than 25 years of experience in lean and Six Sigma implementation, he has guided many organizations on their lean journey. He has dedicated the last 11 years to working exclusively with healthcare organizations and is the author of the best selling book "*A Lean Guide to Transforming Healthcare*". Tom has trained and/or mentored hundreds of healthcare professionals from many of our nation's leading hospitals, including Yale New-Haven Health System, Johns Hopkins Hospital and Aurora Health Care, in the use of Lean and Six Sigma methods and tools.

Tom's presentations and workshops are stimulating, energetic and functional. In his most recent book, "*Lean Done Right, Achieve and Maintain Reform in Your Healthcare Organization*", he explains the two paths of implementation necessary to create a truly lean enterprise.

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# LEAN SIX SIGMA BLACK BELT TRAINING AND CERTIFICATION

## TRAINING AND CERTIFICATION FOR HEALTHCARE PROFESSIONALS

# LEAN SIX SIGMA BLACK BELT

Training and Certification for Healthcare Professionals
Providing the essential drive necessary to direct the organization toward breakthrough improvements

Each participant is required to Lead and complete a Lean Six Sigma Project. Upon completion of the training program participants must complete the Improve and Control phases of their projects, obtain written senior management approval of successful completion, and provide a PowerPoint presentation with narrative of the completed project.

Certification requires a passing grade (80% or higher) on the two part Black Belt exam.

Participants will need to have a laptop computer with a Microsoft OS and Minitab installed.

All participants are required to have completed Lean Hospitals' Lean Healthcare Workshop and Lean Hospitals' Six Sigma Green Belt certification or equivalent, as a prerequisite.

## DEFINE

Six Sigma Deployment, Change management, Roles & responsibilities, Team management & facilitation, Decision making, Conflict Resolution, Overcoming cultural resistance, Project tracking, Stakeholder analysis

## MEASURE

Input & output variables, Data collection plan, Sampling methods, Probability concept, Relative Frequency, Binomial Probability Distribution, Central Limit Theorem, Gaussian Distribution, Z-score, Confidence interval, Degrees of freedom

## ANALYZE

Hypothesis testing, One-tailed / two-tailed, Two sample hypothesis testing, Binomial Distribution, One way ANOVA, Two way ANOVA, Correlation Coefficient, Linear Regression, Regression equation

## IMPROVE

Mind Mapping, Randomized Basic Design, Primary factors & Nuisance factors, Block Design, Full Factorial Design (2k), Orthogonal Arrays, Fractional Factorial Design Screening, Planning and Conducting Experiments

## CONTROL

Statistical Process Control (SPC), Long and Short Term Process Capability, Cp, Cpk Review, Pp, Ppk, Control charts, Xbar and R Chart , p Chart , np Chart , c Chart , u Chart , EWMA Chart