

100% INCREASE IN LABORATORY PRODUCTIVITY DUE TO THE IMPLEMENTATION OF LEAN –SIX SIGMA PRACTICES

Timothy D. Kupferschmid¹ and Dirk Hooiman²

¹Sorenson Forensics, 2495 South West Temple, Salt Lake City, UT 84115

²Strategic Solutions Group

“Do more with less”

“Better, faster, cheaper”

“Increase throughput and decrease costs”

“Reduce this backlog”

We have heard and even uttered these phrases hundreds of times, but it seems impossible to achieve. Actually, it's not. It is quite straight forward to simultaneously increase the quality of your forensic results and increase throughput dramatically, and reduce the turn-around from receipt to result (increase capacity). The authors will describe the application of Six Sigma Engineering and Lean Processing to forensic science laboratories.

In the mid-1980s, Motorola Corporation developed the Six Sigma methodologies which resulted in substantial cultural changes and improvements to their organization. Six Sigma seeks to improve the quality work by identifying and removing the causes of errors and variability in processes. Over the years, Motorola documented more than \$16 billion in savings as a result of their Six Sigma efforts. Since then, thousands of companies around the world have adopted Six Sigma as a way of doing business. Six Sigma has evolved over time. It is more than just a quality system like TQM (total quality management) or ISO-accreditation; it is a way of doing business. Six Sigma has been described as a vision; a philosophy; a symbol; a metric; a goal; a methodology. Lean is a management and organization process derived from Lean Manufacturing, a practice where resources used for any purpose other than the creation of value for the end customer is wasteful and thus a target for elimination. A Lean Laboratory is one which is focused on testing samples to deliver results in the most efficient way in terms of cost, quality and speed. The goal of a Lean laboratory is to use less effort, fewer resources and less time to test incoming samples. In summary, lean is the elimination of the “unnecessary” waste and six sigma is improving the “necessary” parts of the process.

In the spring of 2010, the authors began working with the scientific and management staff of a state crime laboratory's DNA Section. Our goal was to improve turn-around time by 50%, improve productivity by 100% and reduce the backlog by 50%. All of these goals are dependent on not hiring additional personnel or buying more equipment. This presentation will describe the process and the results from this Lean Six Sigma project. This process is applicable to all aspects of a full service crime laboratory, including latent prints, firearms, drugs, toxicology, chemistry and DNA.