**EXSUM**

**Quality & Operations Management**

**Improving Footwear in Air Force Basic Military Training**

**Problem:** The Air Force recruit footwear sizing and issuing methodology is inaccurate and inconsistent, resulting in process redundancy and inefficiencies that accrue 158 hours of wasted time annually.

 **Model/methods:** Lean 6 Sigma and Literature Review

 **Domain:** Performance Measurement and Improvement/Leadership and Organizational Management

**Overview:** Approximately 35,000 recruits enter Basic Military Training (BMT) annually at Lackland AFB. Initial problem description focused on lower extremity injury prevention. 59th Medical Wing was not able to provided data linking lower extremity injuries to footwear. Process was realigned to identify process inefficiencies during foot sizing and footwear issue. Footwear issuing process includes foot sizing, boot issue, and running shoes issue. Sizing methodologies involve digital foot scan and self-reported size. Issuing of boots and shoes occurs in two different locations.

**Findings:** Per Project Champion, Capt Nye, a size difference of ≥1 shoe size is considered a significant discrepancy. 36% of the AF recruits (30 out of 83 observed) had a discrepancy in size between the digital foot scanner and self-reported size. Digital scan printout was not used during boot issue. Digital scan was used during running shoe issue, but only for shoe type (cushion, stability, or motion control). We identified a variance in “adjusted size” settings on several foot scanners. Bottleneck identified in boot issue component of process.

**Lessons Learned:** Digital foot scanning machines are not used during the process with the exception of the running shoes type required. Literature research showed that there is not direct correlation between cushion, stability, and motion control shoes preventing injuries. Research showed that neutral running shoes fit 95% of the population. The Air Force could get rid of the digital foot scanners since they are only used for running shoes type recommendation. From a Lean Six Sigma perspective the digital foot scanners are a non-value added process that adds 73 hours per year to the footwear issuing process. The boot issuing facility was also using their space inefficiently. Increasing floor spacing to allow for ten more recruits in the boot issuing facility would recapture 83 hours of non-value added time consumed each year. The two changes would net a total of 158 hours per year of recaptured time.