

Improvement in Overall Equipment Effectiveness (OEE) of Blister Packaging Lines using Lean Methodology



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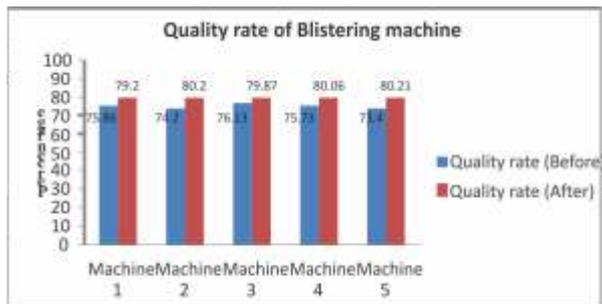
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Abstract:

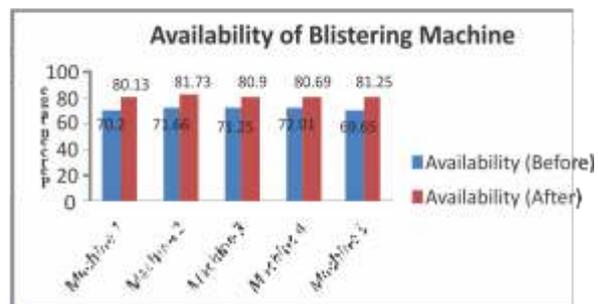
In the current economy, pharmaceutical industry is expected to continuously improve their production capacity and meet the worldwide market demand. To meet this challenge, industries are leaning towards concept of Overall Equipment Effectiveness (OEE). The OEE would help in controlling the overall performance of equipments. OEE as a lean tool has a potential to enhance the performance of the manufacturing unit by guiding towards proper utilization of resources and bringing in significant improvements. The academic project is completed at Cadila Healthcare Ltd., which is a US Federal Drug Association (FDA) approved plant for manufacturing tablets, capsules, injections and aerosol type healthcare products. A project was undertaken for improvement of OEE of blister packaging machines in central packaging area using lean methodology.

The project focuses on improvement in OEE of blistering machines in central packaging area by 10%. The OEE of Blistering machines was on lower side because of high downtime, caused by longer changeover times and unplanned breakdowns. The quality rate of OEE is also affected due to high setup rejections. The causes for low OEE were identified using a Cause and Effect Diagram and the top three causes from them were identified using a Pareto analysis. 5 Why analysis was carried out with the Cross Functional Team (CFT) for the three major causes derived from Pareto analysis. SMED technique and ECRS tool was introduced in central packaging area to reduce the changeover time on blistering machine. To reduce the setup rejections Poke-Yoke using colour codes was implemented on blistering machine.

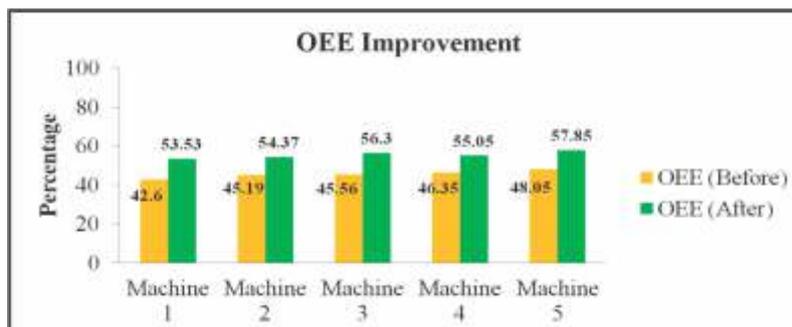
The implementation of SMED and ECRS improved the availability by reducing the changeover time on blistering machine from 490minutes to 278minutes and quality rate was improved by reducing the setup rejection from 75.06% to 78.8%. These improvements enhanced the OEE of blistering machine by 10%.



Quality rate (before vs after)



Availability (before vs after)



OEE (before vs after)