

Prosthetics & Orthotics: Workshop Management System

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AIM

Tan Tock Seng Hospital's Foot Care and Limb Design Centre (FLC) is the only centre in Singapore with a specialised workshop which makes and assembles customised prosthetics.

Scheduled in line with the opening of the new FLC building in August 2013, the principal objective of the Workshop Management System (WMS) project is to incorporate a systematic approach to better manage workshop operations with the implementation of technology and lean methodologies.

METHODOLOGY

A carefully designed software using Microsoft Office Access was able to effectively capture the necessary data for statistical analysis and highlight areas for improvement, including staff performance. The purpose was to phase out the erroneous paper-based recording system, previously recorded through the centre's handwritten logbook, to an electronic database recording system.

In-depth interviews and focus group discussions were used to examine the experience of the workshop Technicians, Prosthetists and Orthotists and stakeholders participating in the design and implementation of the WMS. After considerable deliberation, an additional lean process improvement project on redesigning of the current workflow and remodelling the existing storage shelving was coupled into the WMS.

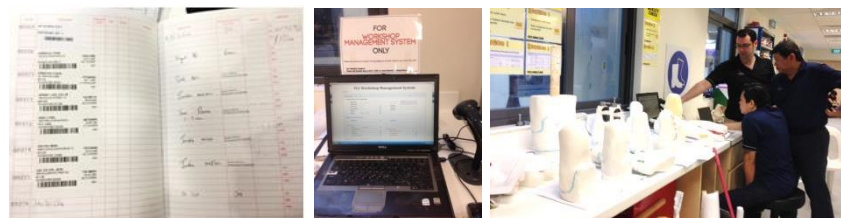
RESULT

The results collected from January to March 2014 indicated the average turn-around time for completion of each job (2 days), number of job remakes (nil), and individual job performance in the workshop.

The improved shelving system increased workshop storage space by 14.2%, allowing accessibility of locating and maintaining the prosthesis. Time taken to retrieve products was reduced from 10 mins to 4 mins.

There were common views that the WMS is a valuable tool, and most of those interviewed agreed it was necessary to use it more effectively to improve the workshop workflow. However, significant challenges included resistance by older Technicians to adapt to the digital computer system and insufficient attention to recurrent resources needed to maintain the system.

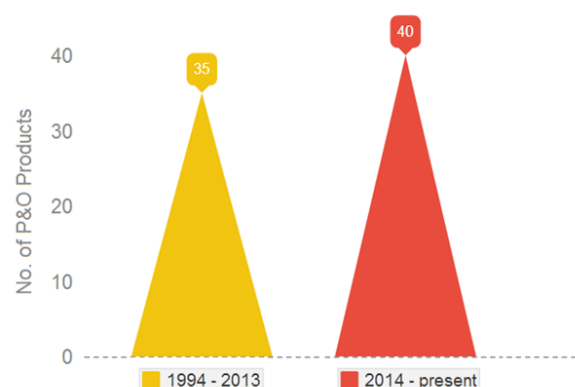
RESULT



Handwritten Job record book used (1994 – 2013) before implementation of the Workshop Management System. Two weeks training were done for all Senior Technicians.



Modification of the current shelving structure created more organisation and eased inconvenience caused by searching for prosthesis.



Increase in workshop storage space by 14.2%

CONCLUSION

This project demonstrated that a simple, low-cost intervention can rapidly turn around the efficiency and performance in the workshop and it can further supplement the FLC Store Inventory Management system, providing a seamless integration in management of both workshop and inventory requirements.