

Linen Management using Radio Frequency Identification (RFID)

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Introduction

Linen management work processes rely heavily on physical counting, whether for verification of clean linens received or soiled linens that pose hygiene concerns.

Linen losses that go up to 15% per year after stock take resulted in hospital overstocking linens to meet fulfillment and compensate losses.

Aim

RFID solution to bring about :-

- ✓ Improved management in linen losses
- ✓ Improved visibility in laundry billing
- ✓ Reduction of linen stock holding by 1 par
- ✓ Reduction of time taken for stock take
- ✓ Reduction in manpower and processing time



Methodology

Preparation Work

- Delivered RFID tags to linen supplier at factory for sewing
- Optimised with appropriate positioning of RFID tags on each linen type
- Commissioned the linens with product names
- Worked with vendor on trolley material and design so as to optimise readability of linens by RFID scanner

Testing of RFID Equipment

- Conducted accuracy testing of linens using RFID equipment
- Performed software testing to ensure smooth transmission of information into system after scanning

Training of Linen Attendants

- Linen attendants are trained to use the RFID system through on-the-job training.
- Buddy system on ground is implemented to promote interactive learning

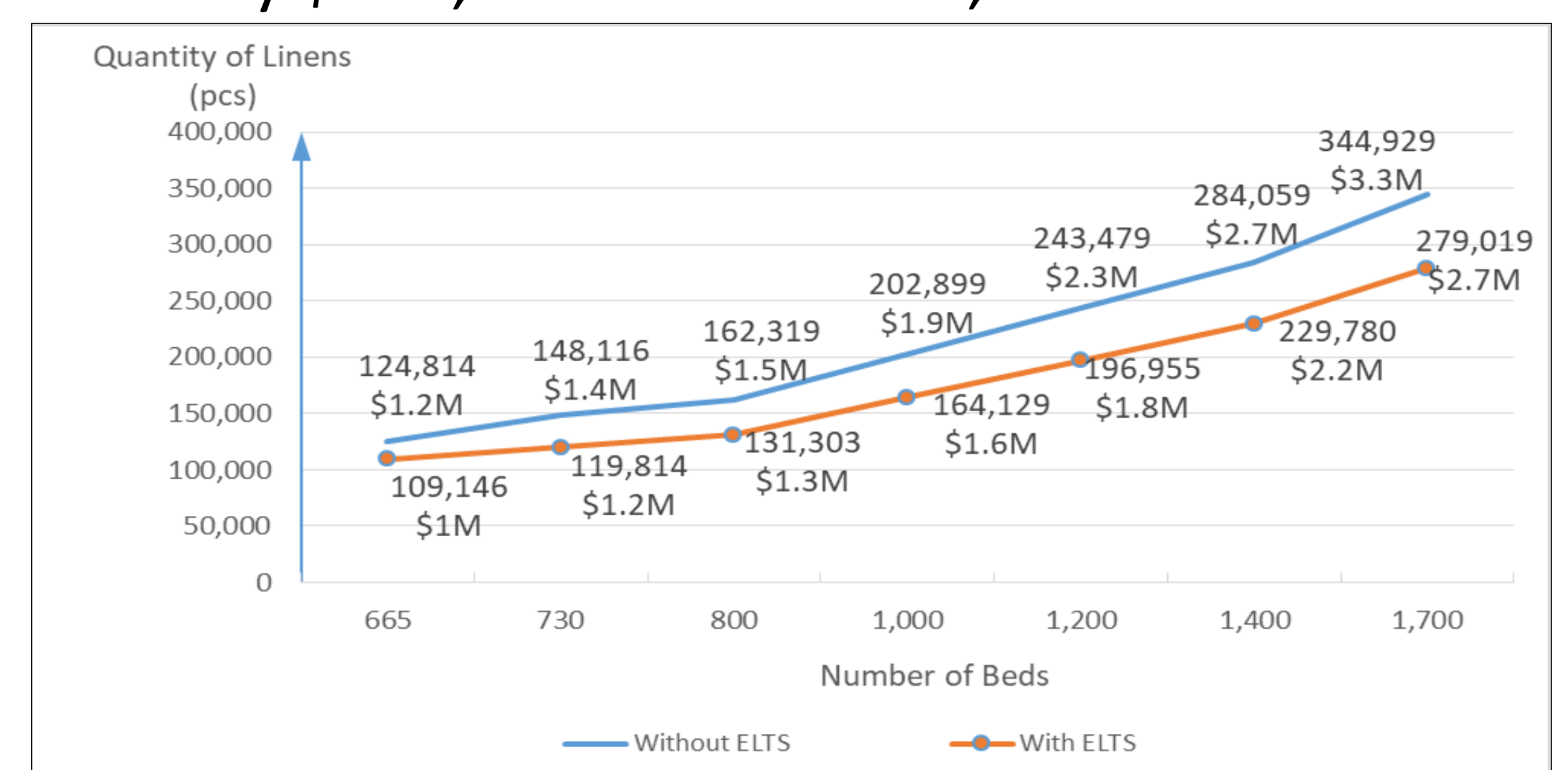
Results

1. Losses Management

- Losses reduced from **15% to 7%** with RFID implementation

2. Par Level Reduction

- Utilisation tracking and losses mitigation can further assist to reduce from **6 to 5 par** of linens which is equivalent to approximately \$500,000 based on 1,400 beds



Graph 1: Reduction of 1 par stock holding

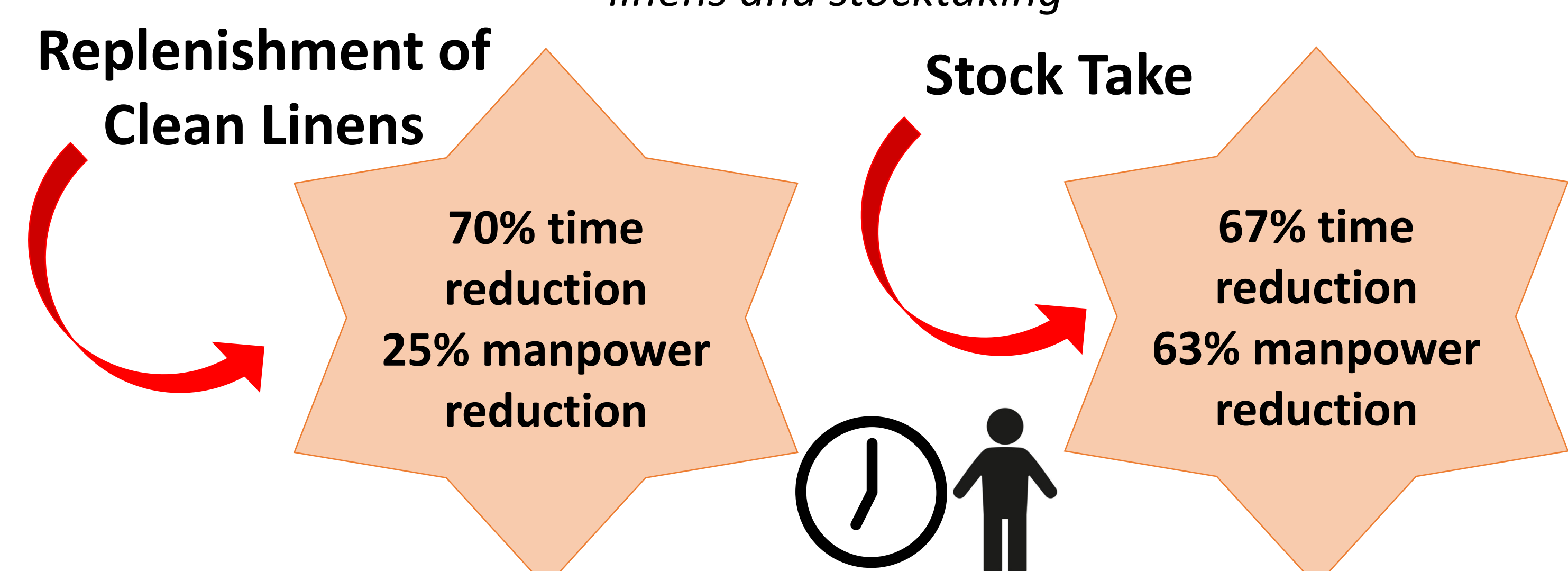
3. Time and Manpower Savings

Activity	Total Number of Trolleys for Packing Daily	Without RFID		With RFID	
		Total Time Spent	Manpower Required	Total Time Spent	Manpower Required
Replenishment of Clean Linens	60	600 minutes	8	180 minutes	6
Stock Take		3 days	8	1 day	3

Table 1: Time and number of manpower savings for replenishment of clean linens and stock take

Activity	Time saved per day (hrs)	Number of manpower savings per month	Total manpower savings per month	Total manpower savings per year
Replenishment of Clean Linens	7	2	\$6,600	\$277,200
Stock Take	2	5	\$16,500	

Table 2: Total manpower savings for replenishment of clean linens and stocktaking



Conclusion

Implementing RFID tracking system has greatly improved our Linen Management. Not only does the system provides visibility and tracking of different linens, it also comes with other benefits that included reduction in time and manpower spent in replenishment and stock taking. The reduction resulted in substantial cost savings and optimise efficiency in the operational front. Furthermore, utilisation rates can be monitored and better forecasted. Such availability of data allows hospital to function on a lower par level and the ability to manage losses at an earlier stage.