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System Integration Improves Management of Requests for Pressure Relieving Mattresses (PRMs)

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1 Project Aims

This project aims to achieve the following when requesting Pressure Relieving Mattresses (PRMs) from vendor:

- **To remove non-value-added steps**
- **Increasing productivity and reducing time wastage**
- **Provide accurate billing for patients**

The project implements a seamless workflow for staff managing requests for PRMs.

2 Methodology

PRMs are designed to relieve pressure from the bodies of users at risk of developing pressure ulcers.

Before Implementation

Initially, nurses ordered PRMs by faxing order forms. Subsequently, vendors implemented an online ordering system (ARJO). However, nurses still had to manually key patients' data into the system as it was not linked to the hospital's Patients Admission, Discharge and Transfer System (PAS). This contributed to the risk of data entry error and the process was time-consuming.

Process improvement

A team of nurses, biomedical engineer, finance representative and vendor discussed the As-is workflow to improve the process of managing requests for PRMs. In September 2017, PRM ordering was incorporated into the hospital's Electronic Ward Charging System (EWCS), which is linked to the PAS. Nurses could order PRMs by selecting the patient from a list and scanning a barcode. This was piloted in ward B105 in September 2017, introduced to all KTPH wards in December 2017, and subsequently made available to Yishun Community Hospital (YCH) wards in January 2018.

Nurse uses a mobile computer to scan the barcode to request a PRM for patient. The request is sent to the application server which then send the request to the vendor system.
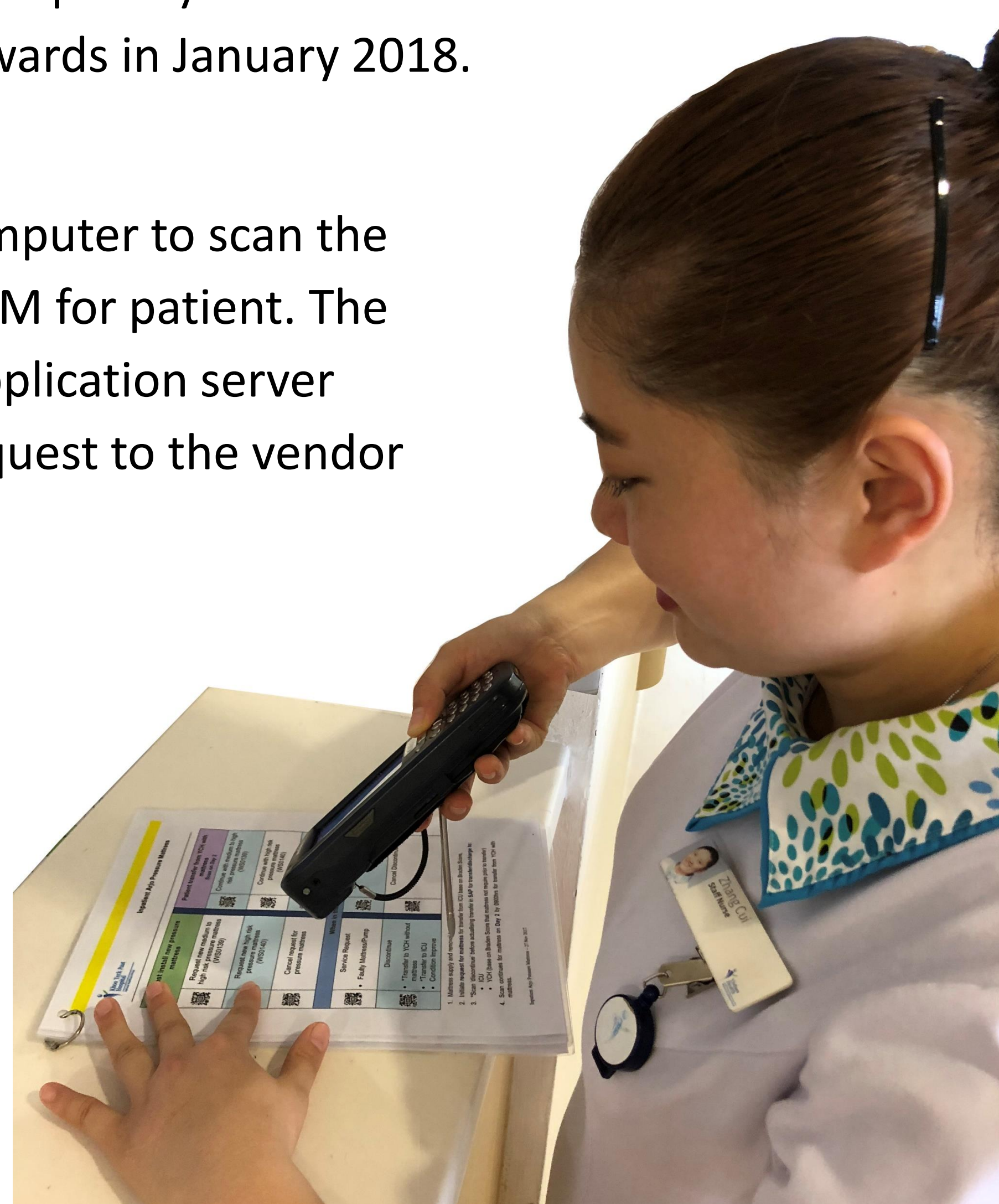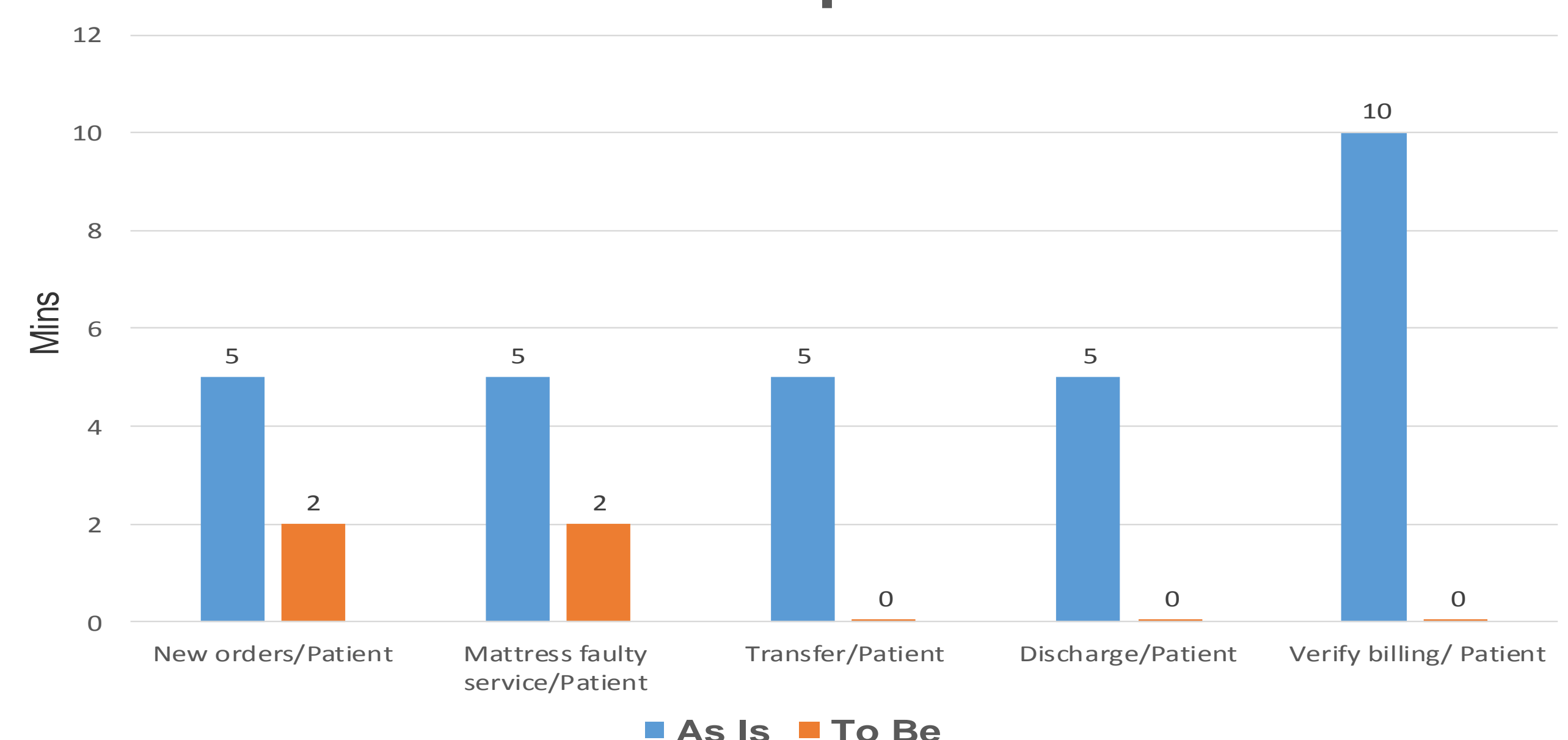
3 Results

Time Saving

🕐 **3 minutes per request. Transfer of patient and termination are automated saving 5 minutes for each operation.**
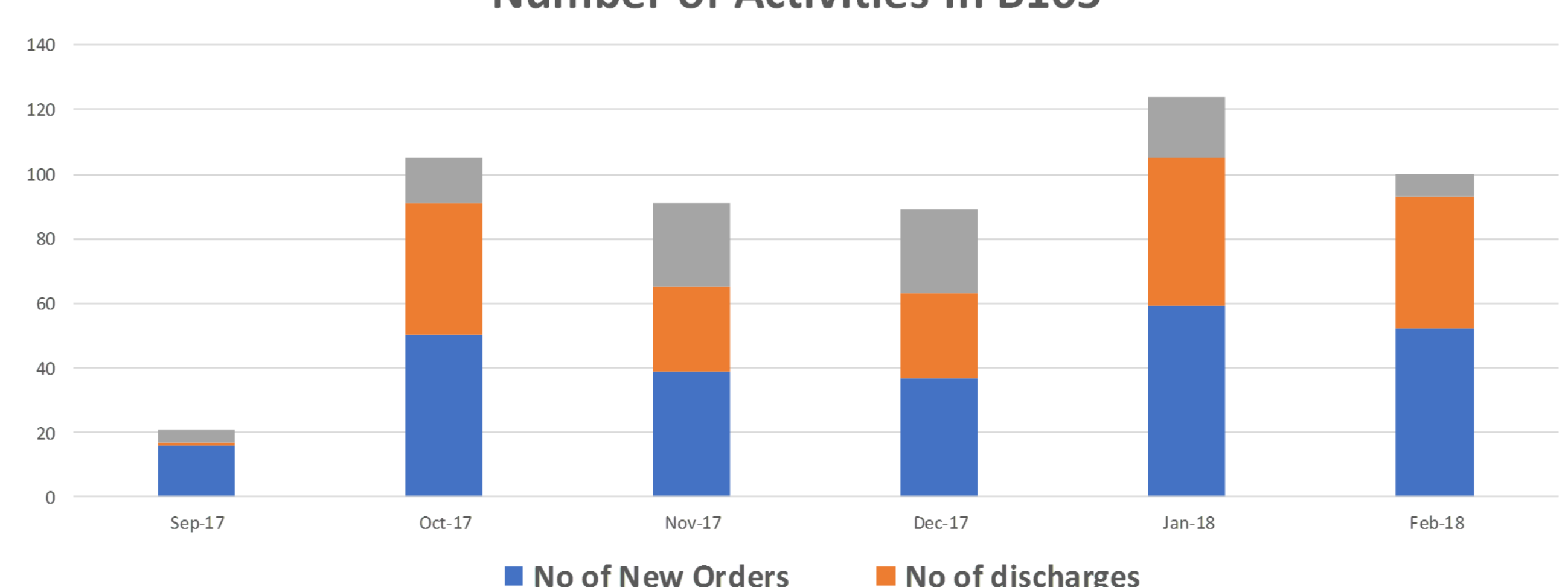
⏱ **When fully deployed to all KTPH wards, a total savings of 1,420 man-hours per year, equivalent to 0.73 FTE, was achieved.**

Time Spend

	New orders/Patient	Mattress faulty service/Patient	Transfer/Patient	Discharge/Patient	Verify billing/ Patient
As Is	5	5	5	5	10
To Be	2	2	0	0	0

Data analysis over 6 months

Number of Activities In B105

	No of New Orders	No of discharges	No of Transfers
Time saved (min) per activity	3	5	5
Total number of activities (6 months)	253	181	96
Total time saved (min)	759.00	905.00	480.00

Time savings of 3 minutes per PRM installation service request is achieved. When a patient is transferred or discharged, manual entry into the ARJO system is not required, saving about 5 minutes per activity. With the vendor online ordering system linked to EWCS and PAS, the transfer and discharge is automatically updated, hence the need for billing verification is eliminated, saving about 10 minutes per activity.

Through this project, the number of steps needed to request for mattress, and tracking of patient transfers and termination are reduced, resulting in significant time saving which can be used for patient care.

4 Conclusion

The integration of EWCS with both PAS and the vendor system, coupled with the use of barcode scanner simplifies and streamlines the work flow for PRM's requests, removing non-value-added steps, hence resulting in significant time savings.