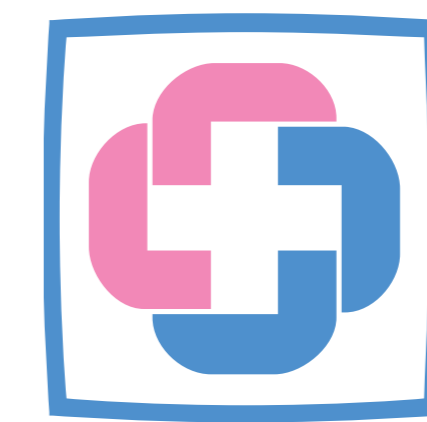




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Automated Charging for Pharmacy Lab-Prepared Drugs

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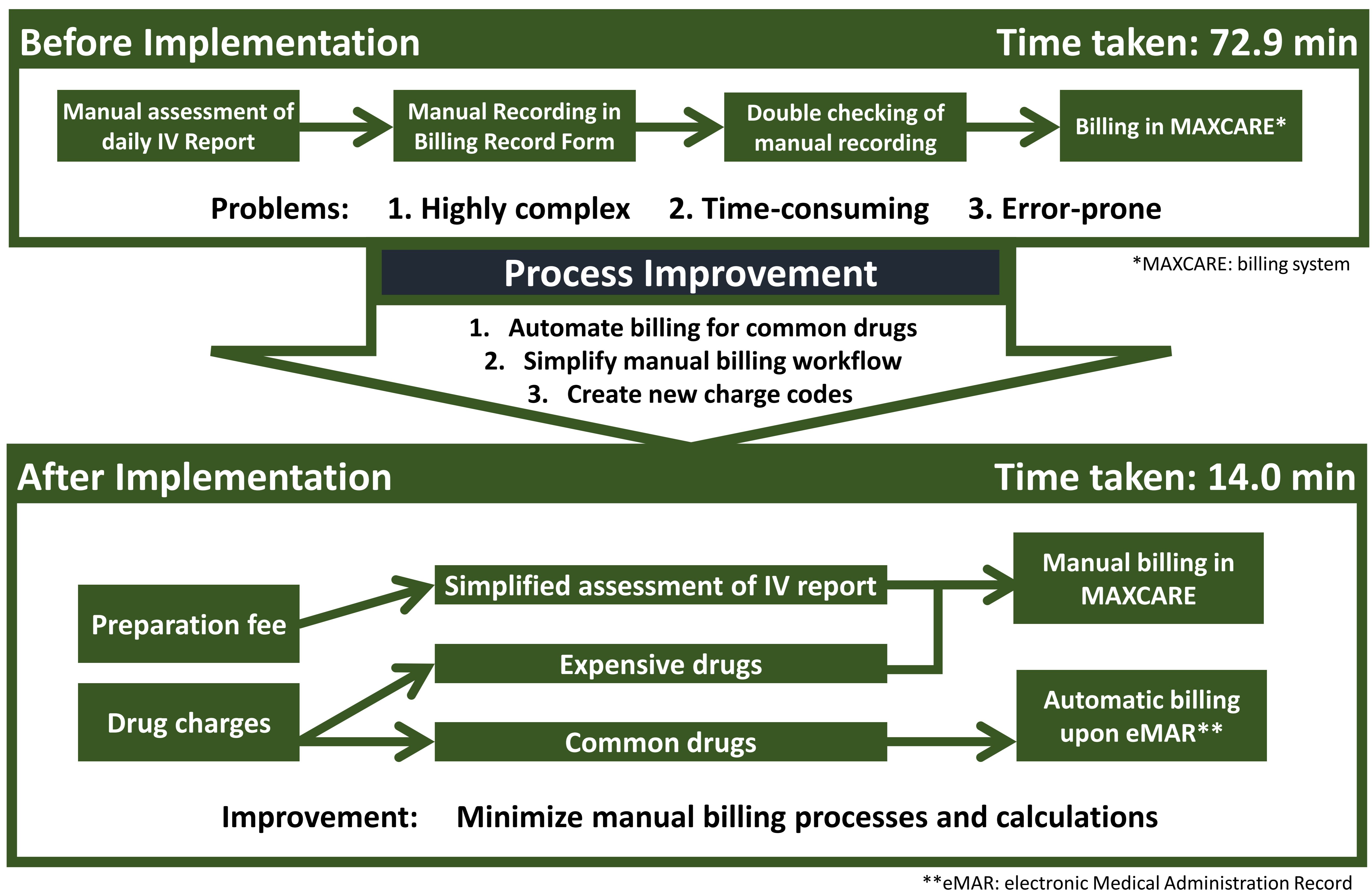
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1. Introduction

KKH Pharmacy laboratory prepares customized intravenous admixtures for patients in Neonatal Intensive Care Unit (NICU). Preparation fees are manually billed, and are based on drug stability as a mean to cost save for patients. However, this manual process is highly complex, time-consuming and prone to errors. The aim of this project is to improve staff productivity through simplifying billing processes.

2. Methodology

We assessed the current billing workflow and identified drugs that are subsidized, relatively inexpensive or dosed once daily. These drugs can be automatically billed upon task marked by nursing staff for each dose used, instead of each vial used, as these do not amount to significant cost-saving for patients. For the other drugs that are expensive and non-subsidized, a simplified billing workflow was created. New charge codes were also set up to accommodate for new billing workflow.



3. Results

As not all of the billing processes can be automated, some time is still required to perform manual processes. Table 1 shows the breakdown of time taken per day to perform each billing task. Overall, improved billing workflow resulted in savings of 59 minutes of manpower hours per day, which translates to 80.8% in manpower cost-saving.

Previous Workflow	Time taken per day (min)	Improved Workflow	Time taken per day (min)
Assessment of IV Report	13.3	Simplified assessment of IV Report	7.0
Recording of Charges	10.4	Billing in MAXCARE	7.0
Checking of manual recording	20.8		
Billing in MAXCARE	10.4		
Total time taken	72.9	Total time taken	14.0
Total Manpower cost (for pharmacy technician @\$0.67/min)	\$48.85	Total Manpower cost (for pharmacy technician @\$0.67/min)	\$9.38

Table 1: Comparison of time taken for billing

4. Conclusion

The use of automated charging and streamlining of manual billing processes resulted in significant cost-savings. Additional manpower hours can be directed towards alternative tasks and initiatives, thereby improving staff productivity. Future initiatives can attempt to automate the entire billing process.