



Magdalene Ng<sup>(1)</sup>, Juweita Bte Arba'in<sup>(1)</sup>, Samantha Dawn Jacob<sup>(1)</sup>, Heng Lili Joline<sup>(1)</sup>, Chi Hiu Yin<sup>(1)</sup>, Jeremy Boey<sup>(2)</sup>, Desmond Lee<sup>(3)</sup>, Dr Jaufeerally Fazlur Rehman<sup>(3)</sup>, Dr Lim Jia Xu<sup>(3)</sup>, Ooi Seok Khoon<sup>(4)</sup>, Edmund See<sup>(4)</sup>, Lee Jun-Yin<sup>(4)</sup>, Song Jieliin<sup>(4)</sup>, Kam Huey Min<sup>(5)</sup>, Lee Hoon Lian<sup>(5)</sup>, Jenny Ng<sup>(5)</sup>, Loo Yew Tuck<sup>(6)</sup>, Ong Geok Teng<sup>(6)</sup>, Rayar Dhana Sekaran<sup>(6)</sup>, Er Wei May<sup>(6)</sup>, Matthew Han<sup>(7)</sup>, Yeo Su Qian<sup>(7)</sup>, Loo Shin Yi<sup>(7)</sup>

Nursing Division<sup>(1)</sup>, Nursing Informatics<sup>(2)</sup>, Division of Medicine<sup>(3)</sup>, Inpatient Pharmacy<sup>(4)</sup>, Pharmacy Administration<sup>(5)</sup>, IHIS<sup>(6)</sup>, Process Transformation & Improvement<sup>(7)</sup>

## Introduction

SGH and NHCS doctors are required to print & sign the discharge prescription after the ward rounds, then pass it to the nurses to fax the script down to Inpatient Pharmacy for verification and packing.

The entire process is time-consuming and geographically limiting (ie. doctors have to use a specific desktop in the MO room to prepare and print the script, pharmacists have to use desktops in the Pharmacy to do verification, and nurses have to use the ward fax machine).

There is poor visibility of any amendments to the medication, as well as the status of the medication order, whether it is packed or ready for dispensing...etc. To bridge the information gaps, stakeholders often resort to inefficient phone calling.

## Objectives

To design and implement a true paperless electronic system for discharge prescriptions that addresses all the inefficiencies identified by the workgroup

## Pre-Implementation Issues

House Officer



Staff Nurse



Pharmacist / Pharm Tech



- Can only start on script after ward rounds
- Must travel back to the patients' wards to prepare and print scripts

- May miss the script put into the case notes
- Problems with faxing, resulting in phone calls to pharmacy
- No visibility of packing status, hence not sure when to send patient / NOK down to collect meds

- Illegible handwriting on faxes
- Scripts all come in at the same period
- Can only verify script at Pharmacy

## Enhancement Works

The workgroup enhanced both SCM (Clinical system) and Fastrak (Pharmacy Queue System). Discharge orders created by doctors in SCM are electronically sent to a worklist created in Fastrak, with visibility by both nurses and pharmacists. Both parties are able to relay special instructions via e-order forms unique to every patients. Fastrak will also relay the packing status of the medication back to SCM for the nurses to view.

House Officer



Staff Nurse



Pharmacist / Pharm Tech

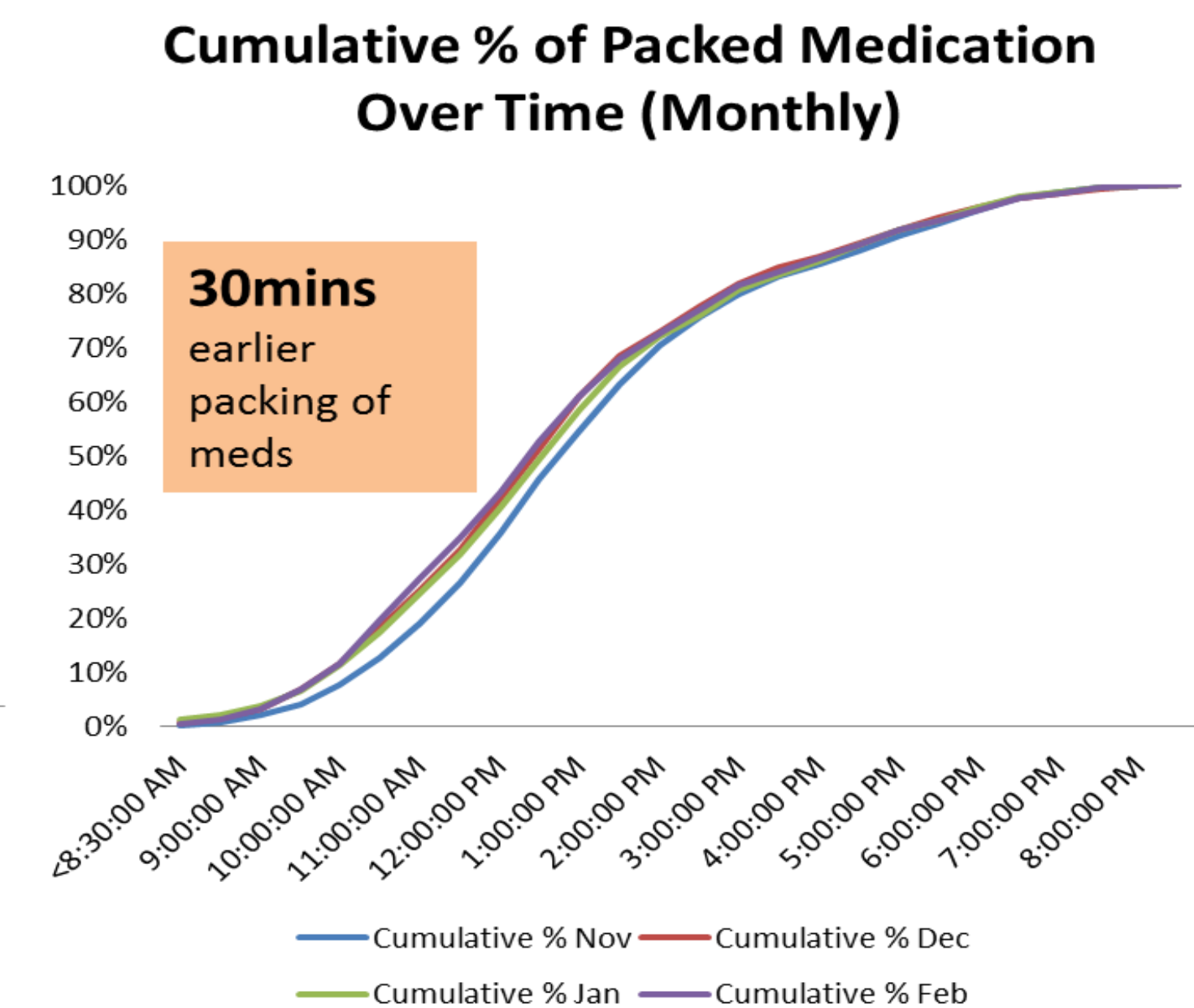
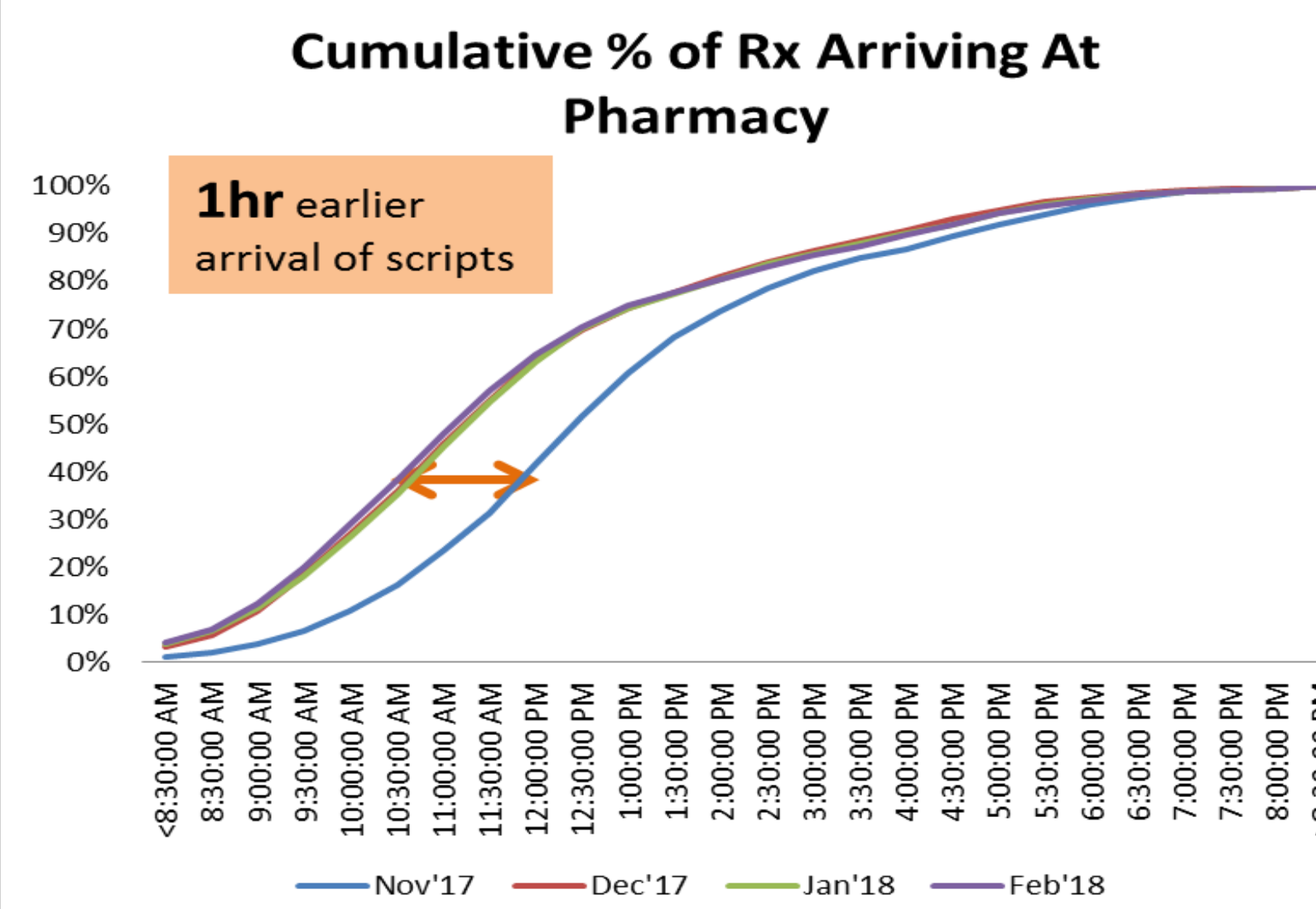


- Can submit Rx script electronically via laptops
- Need not backtrack to all wards
- Need not print and sign scripts

- Able to input special instructions on system even before the script is created by doctor
- No more faxing
- Can see packing status & better advise patients / NOK

- Can verify meds anywhere in SGH via their laptops
- No more illegible handwriting on scripts
- Reduction in phone calls from wards
- Shorter waiting time at discharge pharmacy

## Results



With the enhancement, scripts arrived 1hour earlier at the discharge pharmacy. Medication was also packed and ready for collection 30mins earlier than usual.



Photo 1: Doctors happy they no longer need to print and sign the Rx



Photo 2: Training of inpatient nurses on the enhancement

## Other Intangible Results

- Reduction in phone calls between wards and discharge pharmacy
- Script amendments are visible to all healthcare professionals

## Conclusion & Future Plans

The enhancement has improved the workflows of our doctors, pharmacists and nurses. It has enabled us to move away from faxing scripts and the geographical constraints of desktops and printers. The system enhancement has also improved the communication of all parties, as well as the visibility of discharge orders.

As we press on to reduce the discharge turn-around-time, this system enhancement has made it possible for the hospital to explore one-piece flow preparation & submission of scripts by doctors during ward rounds. This will help to load level the orders arriving at discharge pharmacy.

### Example of one-piece flow preparation of Rx:



HO discusses discharge meds with consultant, submits script at bedside before the team moves to next patient.



Patient for discharge



Patient not for discharge