IMPROVING THE EFFICIENCY AND ACCURACY OF MEDICATION DELIVERY SERVICES AT NHG PHARMACY'S CENTRAL FILL PHARMACY (CFP)

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Mission Statement

To improve the efficiency and accuracy of receiving tasks and scheduling medication delivery at CFP. In order to cater for the sudden 60-fold increase in delivery workload, the following outcomes must be achieved by August 2020.
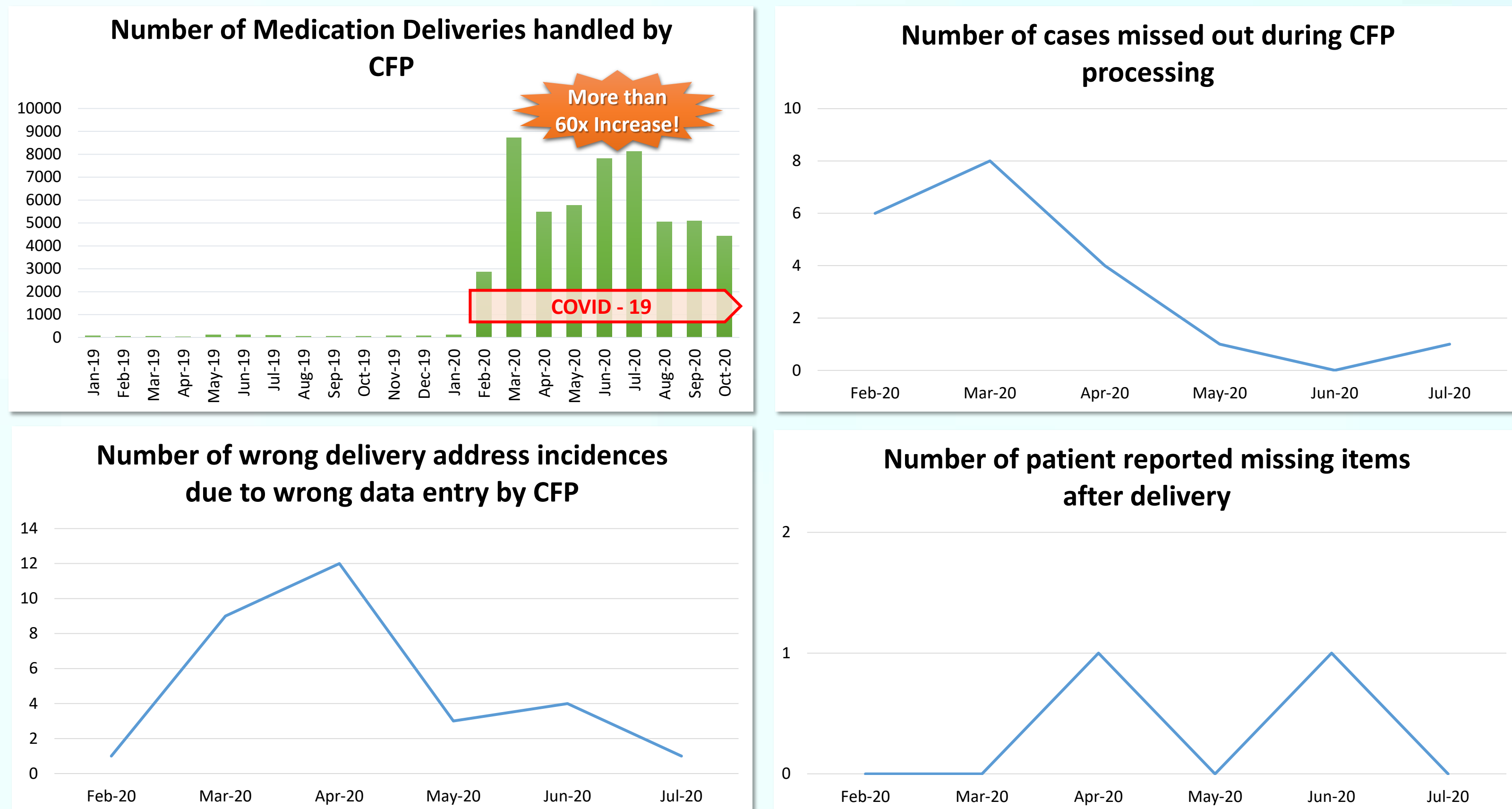
Measurable outcomes:

1. Achieve 99.8% timely supply of medication delivery orders to patients
2. Reduce delivery turnaround time from 1 week to 3 working days
3. Reduction of packing errors due to missing items for medication delivery orders by 80%

Team Members

	Name	Designation	Department
Team Leader	Selvia Zhang	Sr. Executive, Ops	NHGPh
Team members	Fadhilah Bte Muhamad Azam Nurafida Bte Anitudin Gunasheela Thaygaraja	Pharmacy Technician	NHGPh
Sponsor	Wang Hui Hui	Deputy Director, Informatics	NHGPh
Facilitator	Chong Jiun Yih	Asst. Director, PSC	NHGPh

Evidence for a Problem Worth Solving

Number of Medication Deliveries handled by CFP

Number of cases missed out during CFP processing

Number of wrong delivery address incidences due to wrong data entry by CFP

Number of patient reported missing items after delivery

With significant increase in workload, there is a need to automate key processes to reduce errors and processing time!

Current Performance of a Process

- Current tracking process are done manually. It is time consuming and error prone

Manual tracking of delivery orders using Excel

Baseline Time Study of CFP Activity

Activities	Time taken (min)
Patient registration (Keying)*	1
Prescription Receipt, Review & capturing (assume no clarifications required)*	2
Medicine picking & packing*	4
Labelling of packed medicines*	2
Prescription Checking & Sign off*	7
Upload of consignment into vendor system to generate consignment labels%	1
Pasting of consignment labels to correct package*	1
Delivery Coordination with patient*	3
Delivery Coordination with courier%	1
Payment and Billing Reconciliation with courier%	0.5
Pre-packing into ziplocks into picking bins or OPAS boxes (label with OPAS label etc)^	3
Total time	25.5

* per case (min) for an Rx with 5 line items
^ for 1 Rx with 5 line items
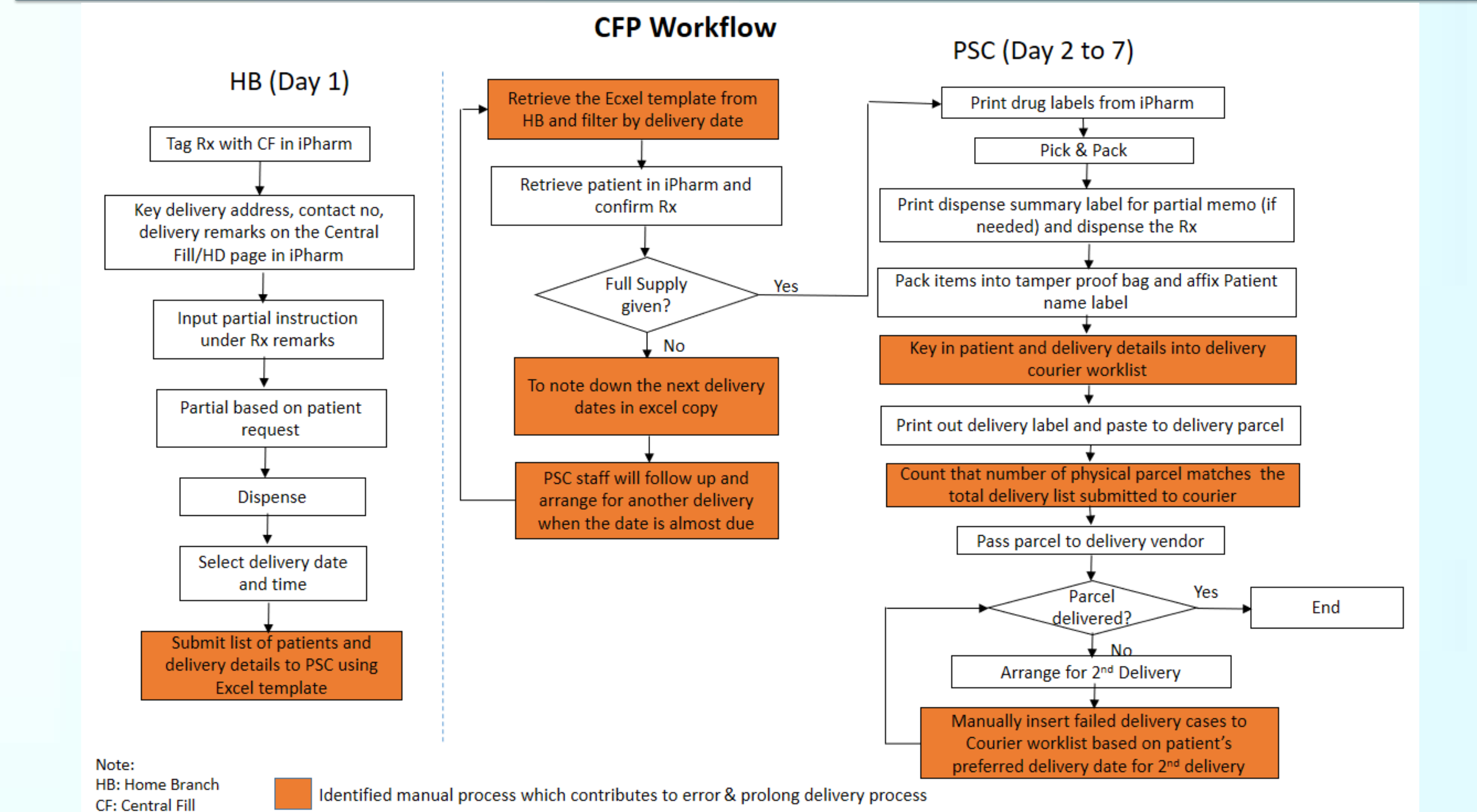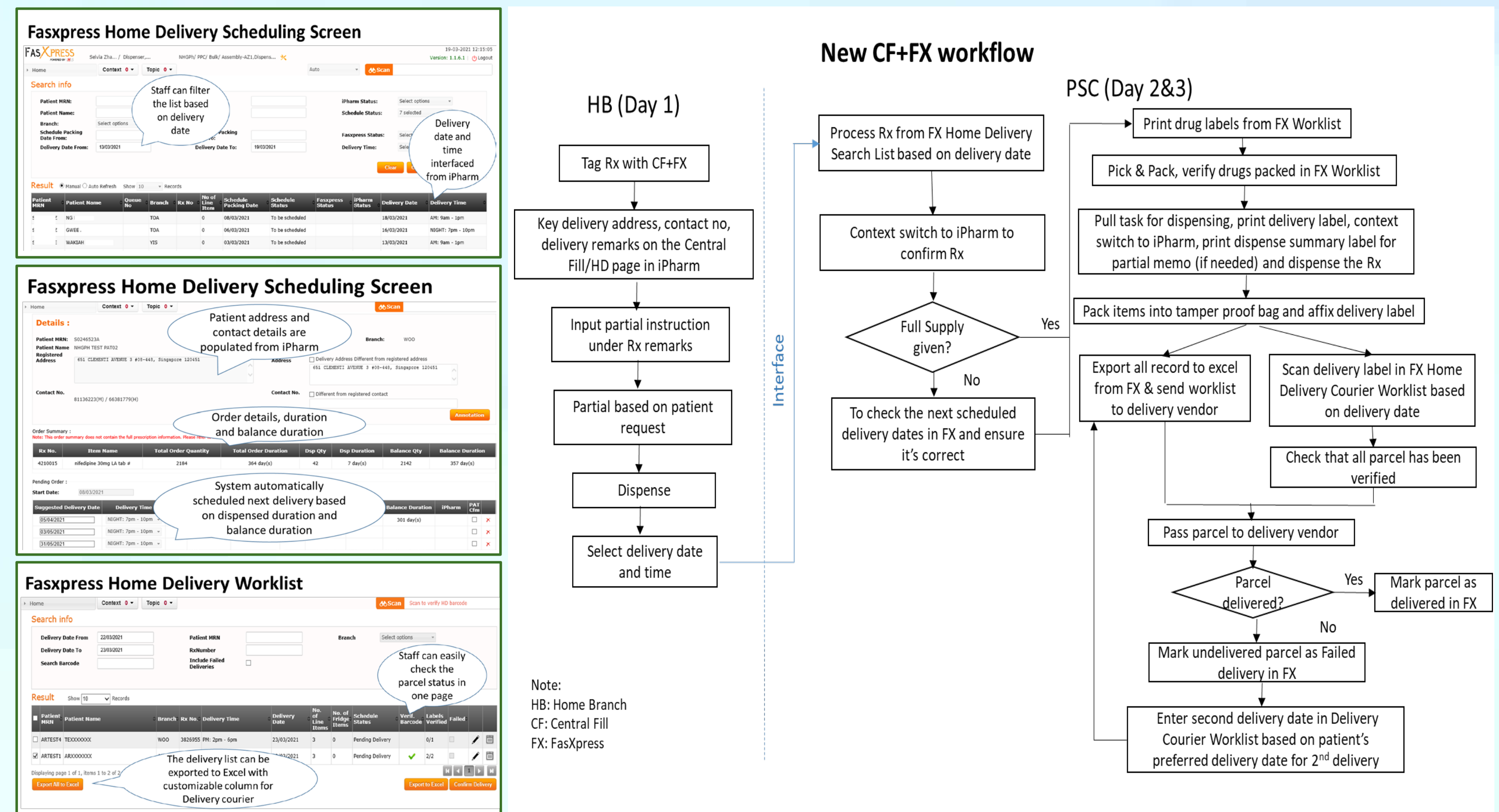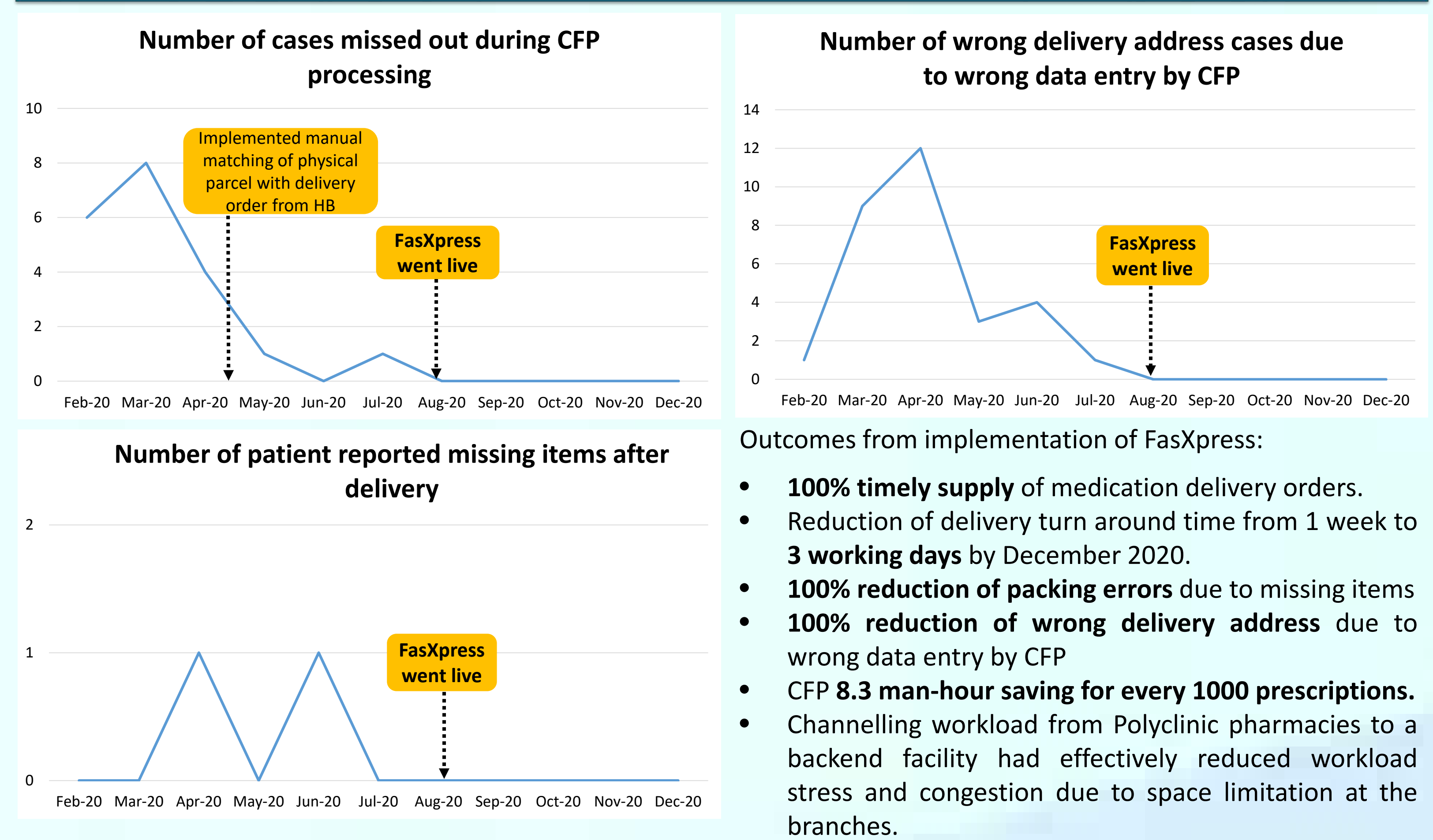%Likely constant effort regardless of the volume

Requesting Branch fills up the excel spreadsheet to send in orders for Medication Delivery to Central Fill Pharmacy (CFP). CFP staff will then process the orders based on the info given, manually keying in address and delivery details for submission to delivery courier. There has been instances of errors in keying and missing out of orders.

Flow Chart of Process

Note:
HB: Home Branch
CF: Central Fill
(orange) Identified manual process which contributes to error & prolong delivery process

Implementation

Problem	Intervention	Date of Implementation
Missed out delivery cases due to manual tracking	Development of workflow engine (FasXpress) which: - Tracks cases automatically - Interfaces delivery details - Enables scanning of packed items to account for all items in a parcel	3 Aug 2020
Wrong delivery due to manual input of delivery details		
Items missing from delivery parcel		

Results

Number of cases missed out during CFP processing

Number of wrong delivery address cases due to wrong data entry by CFP

Number of patient reported missing items after delivery

Outcomes from implementation of FasXpress:

- **100% timely supply** of medication delivery orders.
- Reduction of delivery turn around time from 1 week to **3 working days** by December 2020.
- **100% reduction of packing errors** due to missing items
- **100% reduction of wrong delivery address** due to wrong data entry by CFP
- CFP **8.3 man-hour saving for every 1000 prescriptions.**
- Channelling workload from Polyclinic pharmacies to a backend facility had effectively reduced workload stress and congestion due to space limitation at the branches.

Time Savings

Time Study of CFP Activity – Before and after implementation of FasXpress

Activities	Time taken, before FasXpress (min)	Time taken, after FasXpress (min)
Patient registration (Keying)*	1	1
Prescription Receipt, Review & capturing (assume no clarification)*	2	2
Medicine picking & packing*	4	4
Labelling of packed medicines*	2	2.5
Prescription Checking & Sign off*	7	7
Upload of consignment into vendor system to generate consignment labels%	1	1
Pasting of consignment labels to correct package*	1	
Delivery Coordination with patient*	3	3
Delivery Coordination with courier%	1	1
Payment and Billing Reconciliation with courier%	0.5	0.5
Pre-packing into ziplocks into picking bins or OPAS boxes (label with OPAS label etc)^	3	3
Total time	25.5	25

* per case (min) for an Rx with 5 line items
^ for 1 Rx with 5 line items
%Likely constant effort regardless of the volume

Time savings:
➢0.5 min/ prescription
➢8.3 hours/1000 prescription

Problems Encountered

- System bugs were encountered during the implementation phase
- The system was not designed with an 'unsubscribe service' function. This resulted in tedious workarounds by home branch staff when a patient decides to cancel an upcoming delivery service.

Strategies to Sustain

- Bug fixes for Fasxpress are scheduled regularly
- On-going and refresher trainings are conducted for both home branch and PSC staff
- Simpler workaround provided for home branch to cancel medication delivery from iPharm system