Project Title

Pharmacy Patient Journey Transformation- Outpatient Pharmacy Automation System (OPAS)

Project Lead and Members

Project lead: Lim Hong Yee, Head, Pharmacy

Organisation(s) Involved

Tan Tock Seng Hospital

Project Period

Start date: Dec 2016

Completed date: Ongoing

Aims

To achieve transformational changes to our workflow in the ordering, picking and packing of medications and dispensing processes.

Background

Prior to the pharmacy patient journey transformation, there was a long wait time at pharmacy, high rework rate and the packing accuracy was subjected to human error.

Methods

See poster below

Results

See poster below

Conclusion

The pharmacy patient journey transformation project has achieved its objective of transforming pharmacy processes in the ordering, pick and pack of medications and dispensing, thus enabling us to deliver better care to our patients.

Additional Information

Received TTSH Milestone Award 2019

Project Category

Care & Process Redesign, Automation, IT & Robotics

Keywords

Care & Process Redesign, Automation, IT & Robotics, Productivity, Improvement Tool, Lean Methodology, Value Stream Mapping, Patient Journey, Outpatient Care, Manpower Savings, Safe Care, Medication Safety, Pharmacy, Tan Tock Seng Hospital, Outpatient Pharmacy Automation System, Medication Supply Verification Services, Innovation Cycle

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Outpatient Pharmacy Transformation Journey

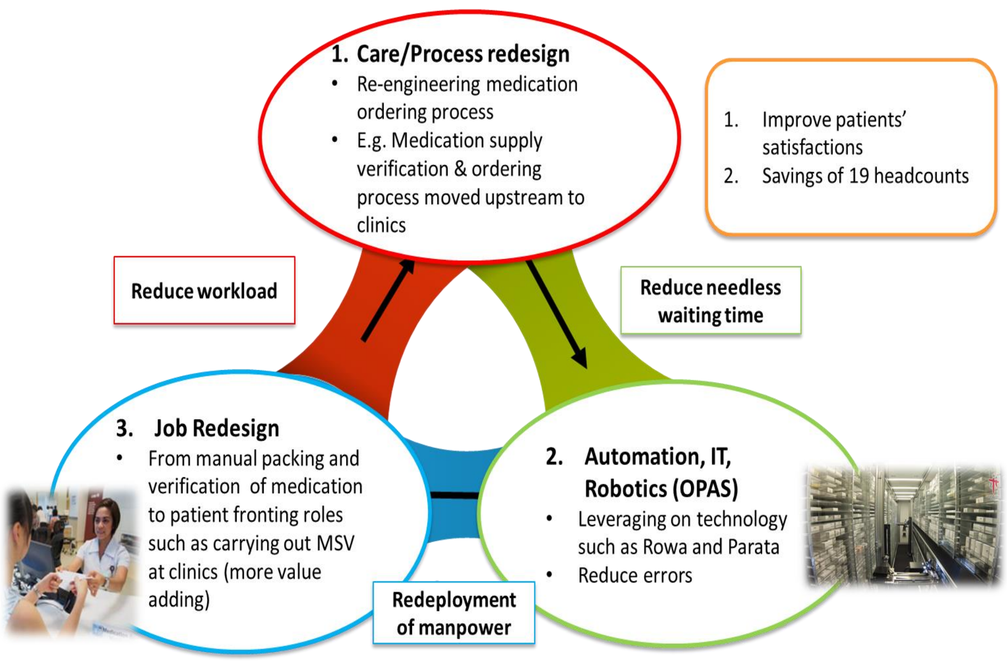
In the past B2 Pharmacy faced these common problems:

- **Long waiting time**: Average of 40 min
- **High rework rates**: High rework rates of 30% which was stressful for staff and increased the risk of returning errors
- **High rate of picking and packing errors:** Due to manual prescription and dispensing processes
- **Low staff productivity:** Staff (including pharmacists) were highly involved in backroom processes e.g. drugs picking, packing and sorting

Through care and process redesign (e.g. VSM), waste were removed from the process which resulted in shorter waiting time for patients.

1. **Medication supply verification services** were provided in the clinics allowing for pharmacy staff to bring the prescription ordering process upstream, as well as, make quicker clarifications with prescribers for any prescription issues. (1st time right for Pharmacy staff reducing rework)
2. Upon patient's confirmation at the clinic, their orders are prepared while they make their way to the Pharmacy (**shorter waiting time**)

Pharmacy Technicians and Patient Service Associates (PSA) are trained and equipped to conduct the Medication Supply Verification process (MSV). Pharmacy Technicians are also trained to maintain the OPAS system.



The Outpatient Pharmacy Automation System (OPAS) was introduced to decrease medication picking and packing time and reduce picking and packing errors. The systems used within the pharmacy are:

1. **ROWA** (box-picking)
2. **PARATA** (loose-pill handling)
3. **Conveyor system & robotic arms** (transport prepared medications to the dispensing area)
4. **Rxpress** (locally developed software system to integrate all components)

Manpower Savings - 19 staff
Out of which, 10 Pharm Technicians were redeployed to perform MSV at the clinics

Increased Productivity - Rework rate reduced from 30% to 5% due to refined MSV process and unnecessary wastes reduced.

Improved Patient Safety - Reduced medication packing errors (zero dispensing errors till date resulting from automation)

More efficient and value adding layout

- Increase dispensing counters for pharmacist to counsel patients. With inclusion of sit down counters for our wheel chair patients
- Opening of side entrance to facilitate better flow
- Open concept to improve engagement with patients
- Pharmacist is made more accessible to public for medication advice