

Project Title

NUHS Robotic Process Automation Programme

Project Lead and Members

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- Mr Lim Yew Song
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- Mr Amirul Hakim
- Mr Han Kam Keong
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- Ms Ong Xiao Xian
- Ms Zoe Kong
- Ms Winnie Lim Li Bing
- Mr Jeremy Lee
- Mr Wong Mushan
- Ms Tracy Soo
- Ms Sophia Tan
- Ms Clara Tan

Organisation(s) Involved

National University Health System

Healthcare Family Group(s) Involved in this Project

Medical

Applicable Specialty or Discipline

Specialised Support Service

Project Period

Start date: Not Available

Completed date: July 2022

Aim(s)

To enables real-time usage tracking and saves NUH 750 manhours.

Background

See poster appended/ below

Methods

See poster appended/ below

Results

See poster appended/ below

Conclusion

See poster appended/ below

Project Category

Care & Process Redesign, Productivity, Manhour Saving, Time Saving, Operation Management, Inventory Management

Technology, Digital Health, Data Analytics

Keywords

Robotic Process Automation, Bot

Name and Email of Project Contact Person(s)

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NUHS Robotic Process Automation Programme

CONSIGNMENT CONSUMABLES TRACKING AND INVOICE PROCESSING @ NUH OPERATING THEATRES

Automate notifications to vendors, usage and top-up tracking and invoice validation for medical consumables on consignment in NUH Operating Theatres

1,500
INVOICES
per month

42¹²
MINUTES

Visibility of PO
status and prevents
stock-out situation

750
MAN HOURS
SAVED MONTHLY

EXTENSION TO OPERATING THEATRE AND ENDOSCOPY INDENT PROCESSING PRODUCES A FURTHER

390
MAN HOURS
SAVED MONTHLY

MEDICATION DELIVERY SERVICE @ NUH PHARMACY

Facilitate billing process in iPharm and SAP after medication is dispensed for home delivery from all pharmacy sections in NUH



Current workload sustainable with existing manpower

7⁴
MINUTES

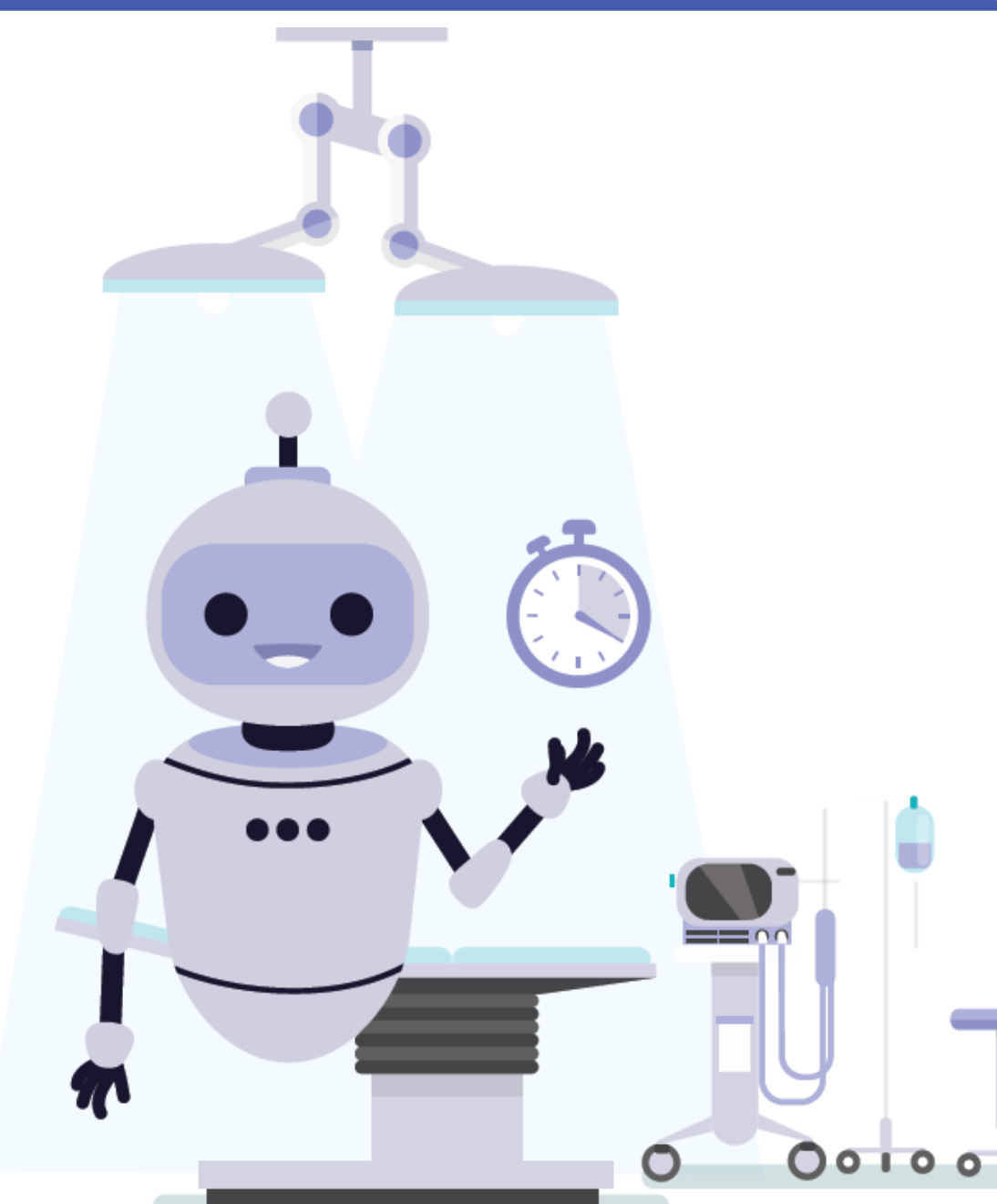
400
MAN HOURS
SAVED MONTHLY

40%
EMPLOYEE'S
TIME FREED

Robotic Process Automation (RPA) enables real-time usage tracking and saves NUH 750 manhours!

NUH Operating Theatres (OT) was previously using a tedious and manual process of tracking the usage, delivery and billing of medical implants and supplies on consignment. Coupled with only a lean team managing the large volume of invoices and vendors, this sometimes led to late Purchase Order (PO) top-ups and low stock levels.

Specialised Support Services (SSS) brainstormed and initiated the use of RPA to take over this time-consuming task with the help of IHIS.



Robotic Process Automation (RPA) saves NUH over 400 manhours per month!

NUH Pharmacy was previously using a manual billing process for its medication delivery service which involved data entry, toggling between systems and checking payment modes.

Each billing record typically took 7 minutes. With RPA, the time taken was reduced to approximately 4 minutes per record, successfully freeing up 40% of employee's time.



Workflow by Bot



Benefits



Real-time tracking

improves visibility of PO status and prevents stock-out situation

750 manhours
saved monthly
from validating invoices

42 mins per invoice
before RPA
vs
12 mins per invoice
after RPA
(=1,500 invoices per month)



Improved turn-around time of invoice processing and enhanced accuracy

Free up OT admin teams to perform more value-added work

Hear from the team on their positive experience with RPA!

"RPA is an automated solution that makes labour-intensive tasks seem effortless and eliminates human errors."
~ Tracy Soo, Senior Manager, SSS, NUH

"RPA is a tool that enhances productivity. Harnessing this tool improves future capacity and potential of the team."
~ Clara Tan, Assistant Manager, SSS, NUH

"The bot can literally work 24/7 with consistency and accuracy which is virtually impossible for any human."
~ Jeremy Lee, Assistant COO, NUH

"Time saved! I no longer need to manually send emails and validate invoices."
~ NUH OT Admin

"RPA helps us automate and speeds up repetitive procurement processes. It is a timely intervention that frees up our people to dedicate time on other value-added services."
~ Mushan Wong, Head of SSS, NUH



Photo of both OT admin teams from Main Building OT and Medical Centre OT with SSS admin, Head of SSS and NUH Assistant COO

Congratulations to the teams! Their conviction and commitment made RPA possible in July 2022.

Working team: • Tracy Soo, Senior Manager, SSS, NUH
• Clara Tan, Assistant Manager, SSS, NUH
IHIS team: • Elaine Ngan, Lead Analyst, Digital Platform
• Han Kam Keong, Senior Software Engineer, SEED - Software Engineering & Development

BEFORE RPA

- 4 mins: Create record in EPIC after dispensing medication for home delivery
- 1 min: Waiting time for system interface and toggling between systems
- 1 min: Reverse and tag to newly created EPIC record in iPharm
- 1 min: Tag necessary codes in SAP to allow Medisave claiming and verify final charges

AFTER RPA

- 4 mins: (Total time for the process)

Bot facilitates billing process in iPharm and SAP after medication is dispensed for home delivery from all pharmacy sections – Main Building Pharmacy, Kent Ridge Wing Pharmacy, Medical Centre Pharmacy and Khoo Teck Puat - National University Children's Medical Institute Pharmacy

Benefits



400 manhours
saved per month
(Based on an average of 8,000 records per month and 3 mins saved per record)



Current workload sustainable with existing manpower



Increase accuracy and minimise data-entry errors

Hear from the team on their positive experience with RPA!

"Thank you Bot, Love it!"
~ Dorothy Chiuman, Main Building Pharmacy

"Finally! Less overtime!"
~ Kenneth Kok, Kent Ridge Wing Pharmacy

"Even though it took me several months to train the bot, it is definitely worth it!"
~ Winnie Lim, Medical Center Pharmacy

"Awesome, I have more time for other work."
~ Ong Xiao Xian, Clinical Support Services

Congratulations to the teams! Their conviction and commitment made RPA possible in August 2022.

Working team: • Aven Ng, Assistant Director, Clinical Support Services
• Ong Xiao Xian, Assistant Manager, Clinical Support Services
• Winnie Lim, Pharmacy Technician Supervisor, Pharmacy
IHIS team: • Amirul Hakim Bin Mohamad Aziz, Senior Systems Analyst, Digital Platform
• Han Kam Keong, Senior Software Engineer, SEED - Software Engineering & Development



[From left to right] Photos of CSS Ops team and IHIS team with the Pharmacy leads at Main Building, Kent Ridge Building and Medical Centre respectively.