



Singapore Healthcare
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Use of Robotic Process Automation in the collection of Patient-Reported Outcome Measures

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INTRODUCTION

Routine collection of Patient-Reported Outcome Measures (PROMs) is essential in the provision of **person-centric, value-based healthcare**. However, the heavy workload of healthcare professionals (HCPs) makes it a significant barrier for routine collection of PROMs.

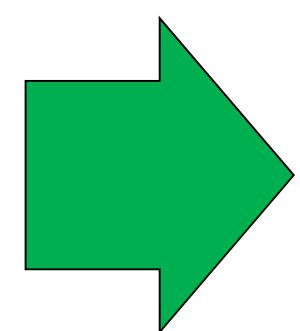
Robotic Process Automation (RPA) is a business process automation technology based on using metaphorical software robots to handle data in and between multiple applications.

OBJECTIVES

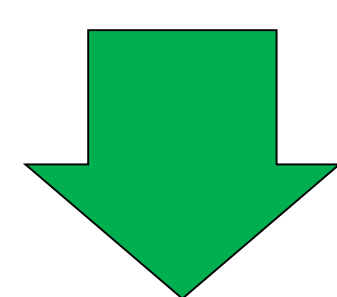
This project uses RPA to automate the routine collection of PROMs for patients attending Singapore General Hospital's Outpatient Musculoskeletal Physiotherapy (SGH MSK PT) Clinic, hence **freeing up precious clinical time** for Physiotherapists (PTs) to **concentrate on provision of personalized quality clinical care**.

METHODOLOGY

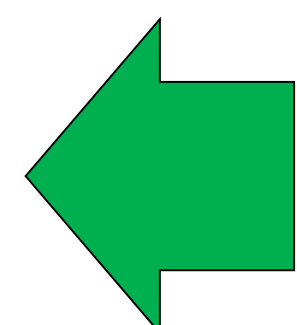
SMS sent to patient
via appointment
booking system (1
day before
appointment)



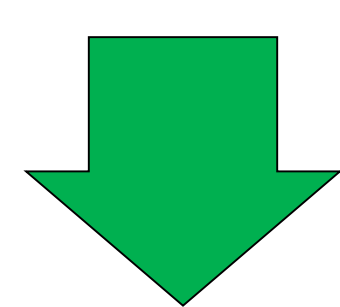
Patient clicks on
FormSG link in SMS
and fills up form



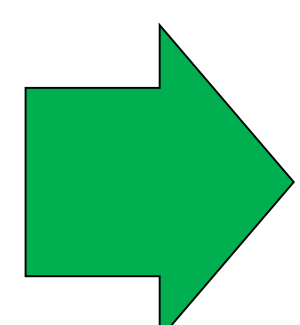
RPA processes email
using Microsoft
Excel (calculates
PROMs scores)



FormSG response
sent to common
corporate mailbox



RPA sends out
PROMs scores to
respective PTs via
email



PTs explain PROMs
score to patients
and inputs into e-
doc

RESULTS

From 13 March 2022 till 30 June 2022, of the 18,521 SMS sent out, there were 3,933 responses (21.2%). It takes an average of 8 minutes of clinical time for a PT to administer, calculate and interpret PROMs result for each patient.

**31,464 mins /
\$22,559.69 saved!**

As of 30 June 2022, we have saved 31,464 minutes of clinical time, which translated to \$22,559.69 in PT manpower cost savings (based on QI Savings calculator).

**Ongoing monthly
savings of 8631 mins /
\$6188.72!**

Based on the current response rate, we forecast an ongoing monthly savings of 8631 minutes / \$6188.72.

CONCLUSION

This project has demonstrated the utility of RPA in the automation of PROMs collection, and we are continuing its use. Benefits from this project include:

- **Increased clinical time with patient**
- **Reduced unnecessary cognitive work by PTs to calculate PROMs scores**

Building on the success of this project, we have already started several initiatives to improve on the patient response rate.

FUTURE

- RPA can be programmed to **identify / highlight** patients with poor PROMs scores to PTs for **greater clinical attention**.
- Scaling up the use of RPA in PROMs collection to other healthcare specialties, will **reduce burden on HCPs** and help in the delivery of **patient-centric, value-based healthcare**.