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Background and Context of Problem

- Biologic therapy is initiated for moderate-to-severe psoriasis patients who failed oral immunosuppressant therapy and/or phototherapy, due to its cost-effectiveness in acute treatment of worsening symptoms and chronic maintenance therapy.
- As patients often refused or are non-compliant to prescribed regimens due to their high costs, pharmaceutical companies initiated patient assistance programmes (PAPs) with co-funding regimens/mechanisms to improve affordability.
- However, PAPs are accompanied by time-consuming, complex, manual processes affecting multiple stakeholders:
 - Complicated manual forms to track patients' PAPs
 - Manual tabulation of stock utilisation and reconciliation
 - Tedious reworks of PAP inventory and transaction errors caused by human errors and complicated processes
 - Long patient waiting time in National Skin Centre (NSC) pharmacy due to complicated documentation process

Project Objectives

- To improve the operational efficiency of managing biologic PAPs for dermatology outpatients in NSC Pharmacy
- To reduce patient waiting time in NSC Pharmacy

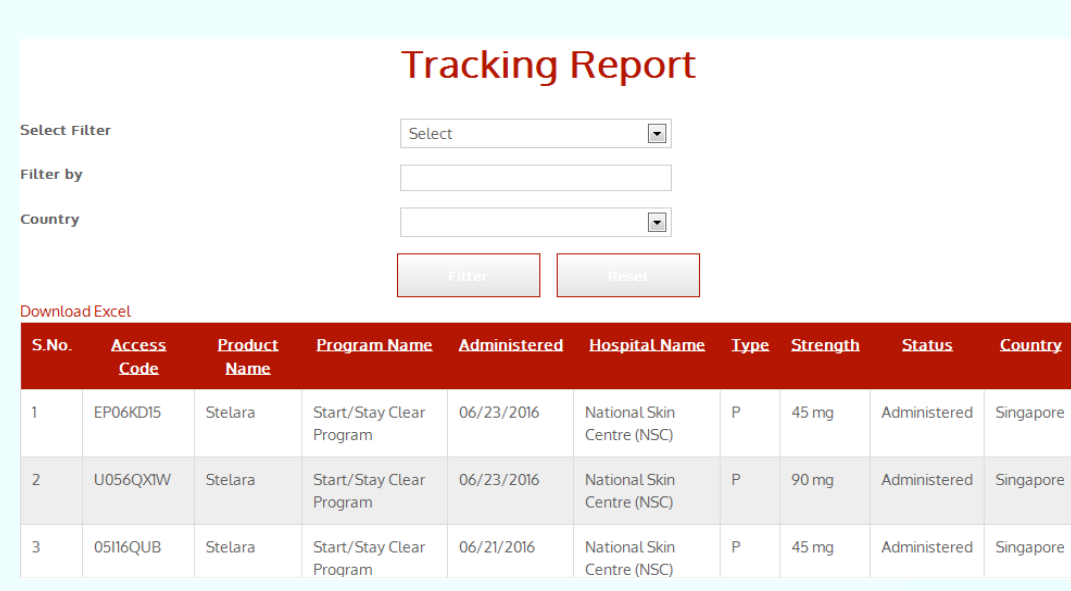
Methodology

- NSC Pharmacy and pharmaceutical companies collaborated to implement PAVE mobile application and web access portal in June 2016.

PAVE Mobile Application



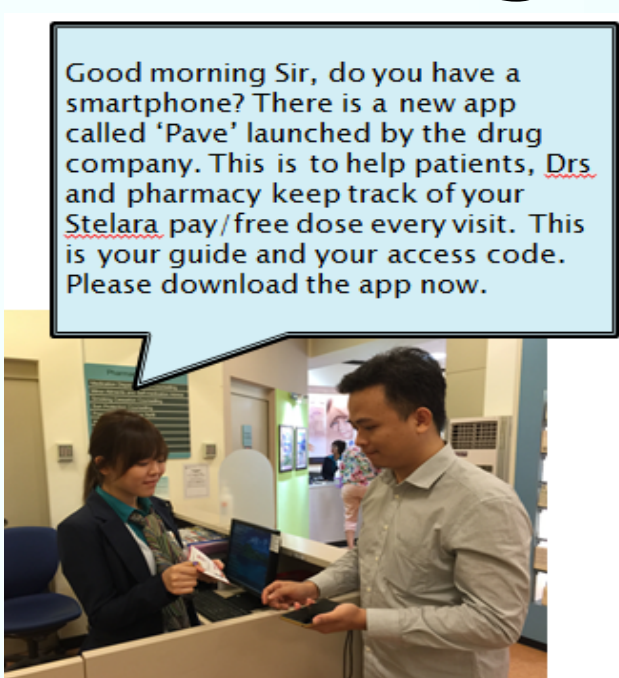
PAVE Web Access Portal



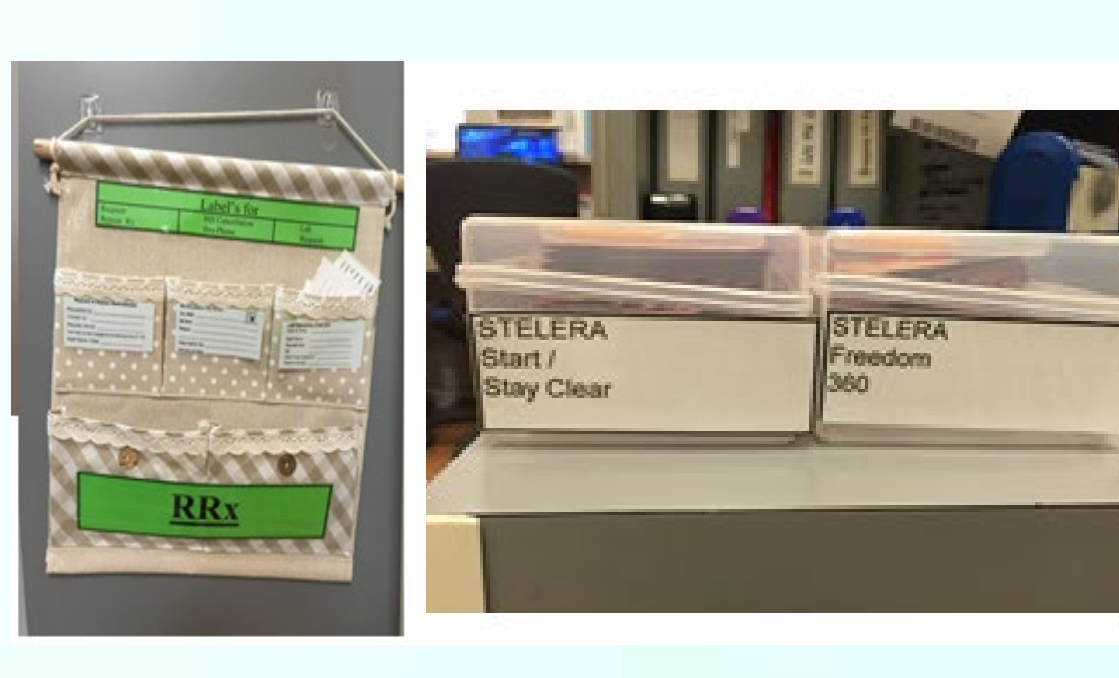
- Plan-Do-Study-Act (PDSA) was used to review PAVE's effectiveness (quantitative measures) and to identify areas for continuous improvement (qualitative inputs from patients and stakeholders).

- Implementation process was complemented with in-house training of PAVE and redesigned workflow to the teams and staff of NSC Pharmacy and pharmaceutical companies.

Scenario-based training



Redesigned workflow



FAQs and Troubleshooting

FAQs

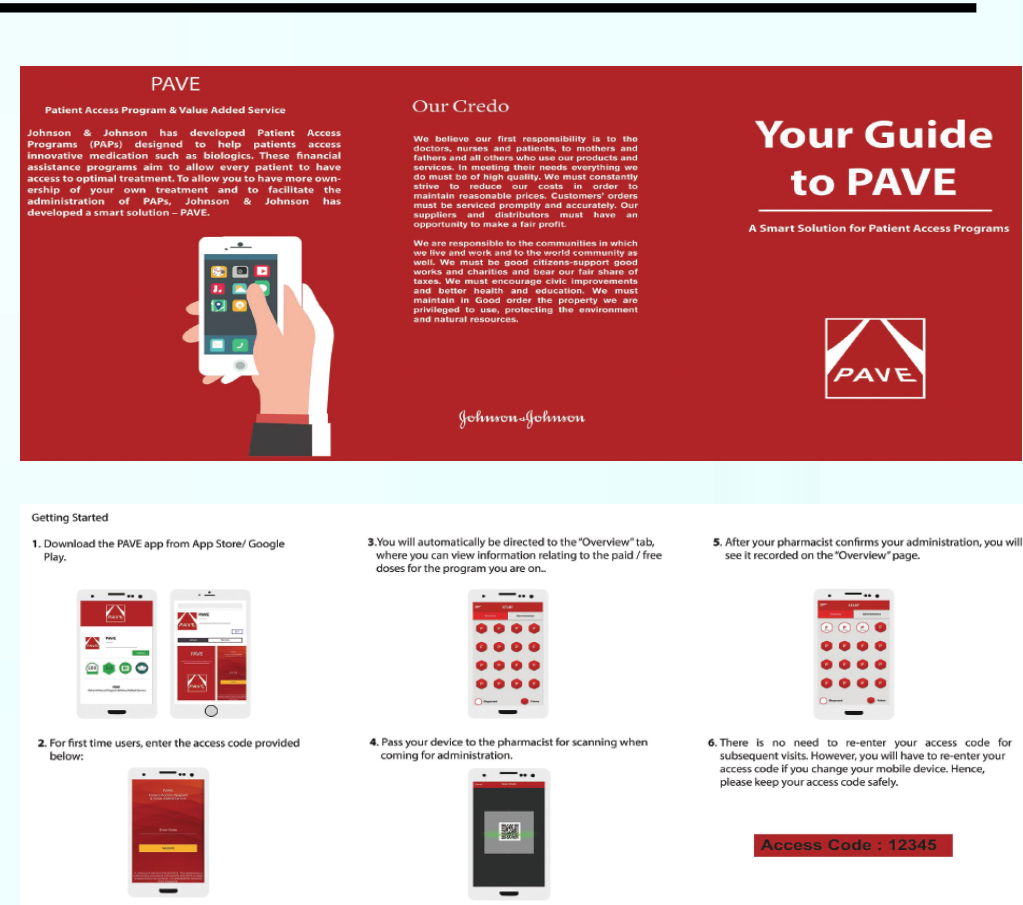
- What if the patient deletes the app?
Ans: He or she may download again using the same access code. If he forgets the access code, check with pharmacy.

Technical Issues / Phone Unavailability

- Fill up the following details in the manual form provided in the file and place at the 'request for repeat prescriptions' pocket.

- Patient education material were developed and improved collaboratively by the teams from NSC Pharmacy and pharmaceutical companies using PDSA cycles.

Pocket-Size Patient Information Booklet



Multi-Lingual Patient Information Sheet

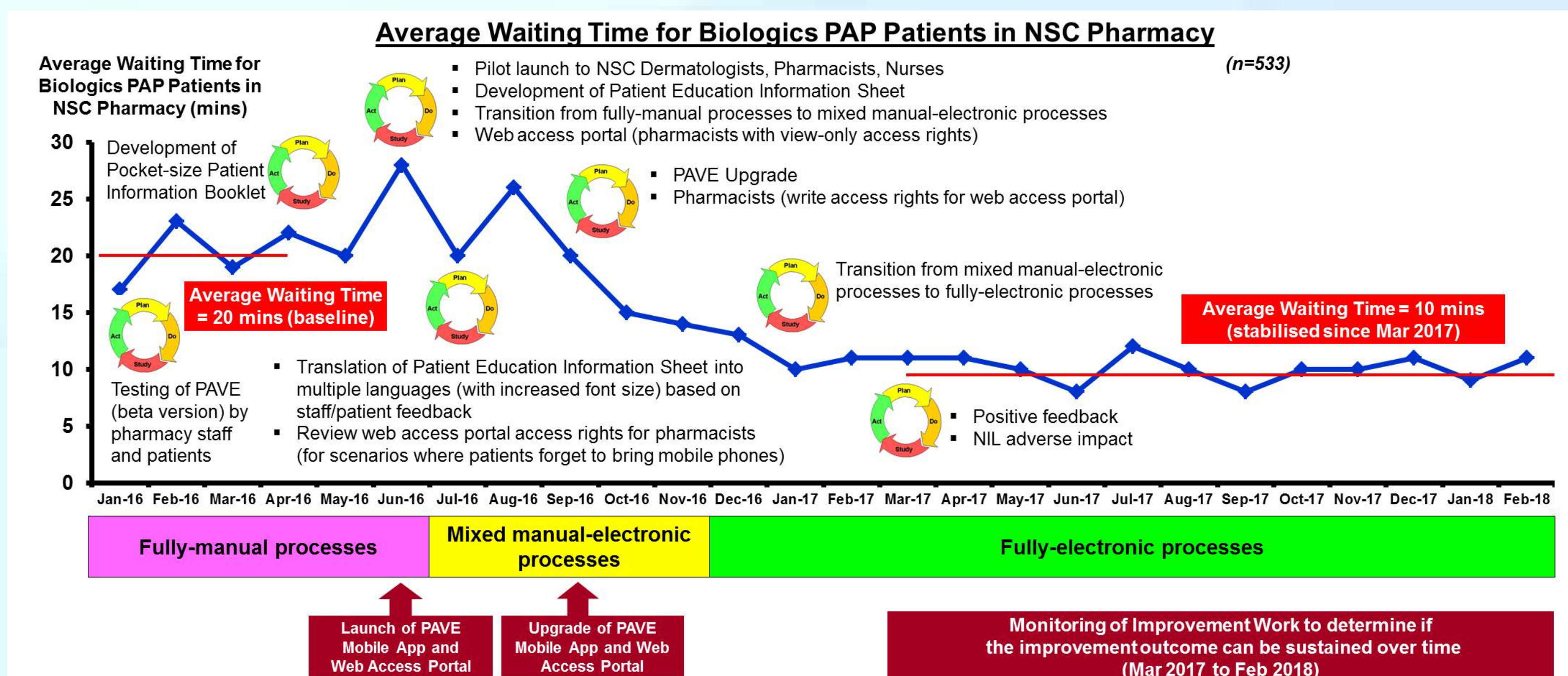
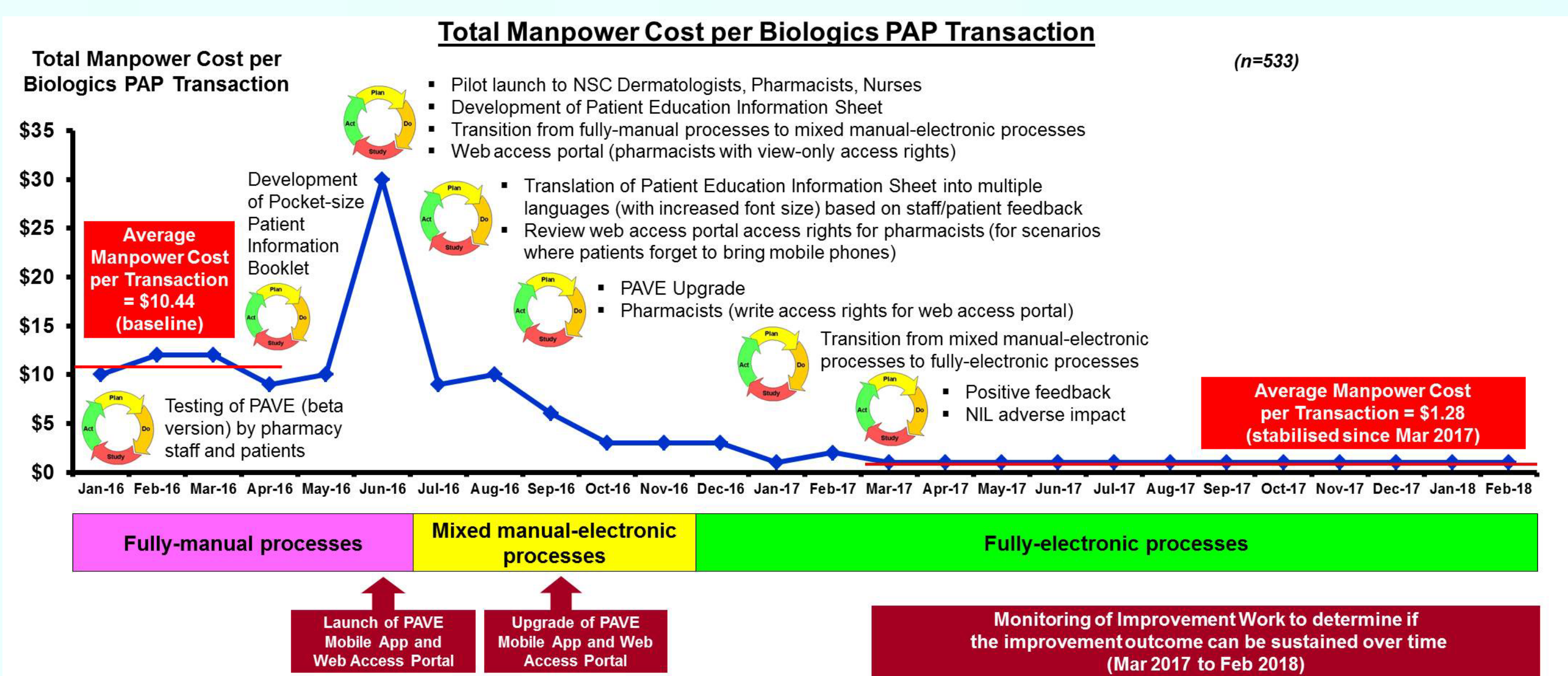
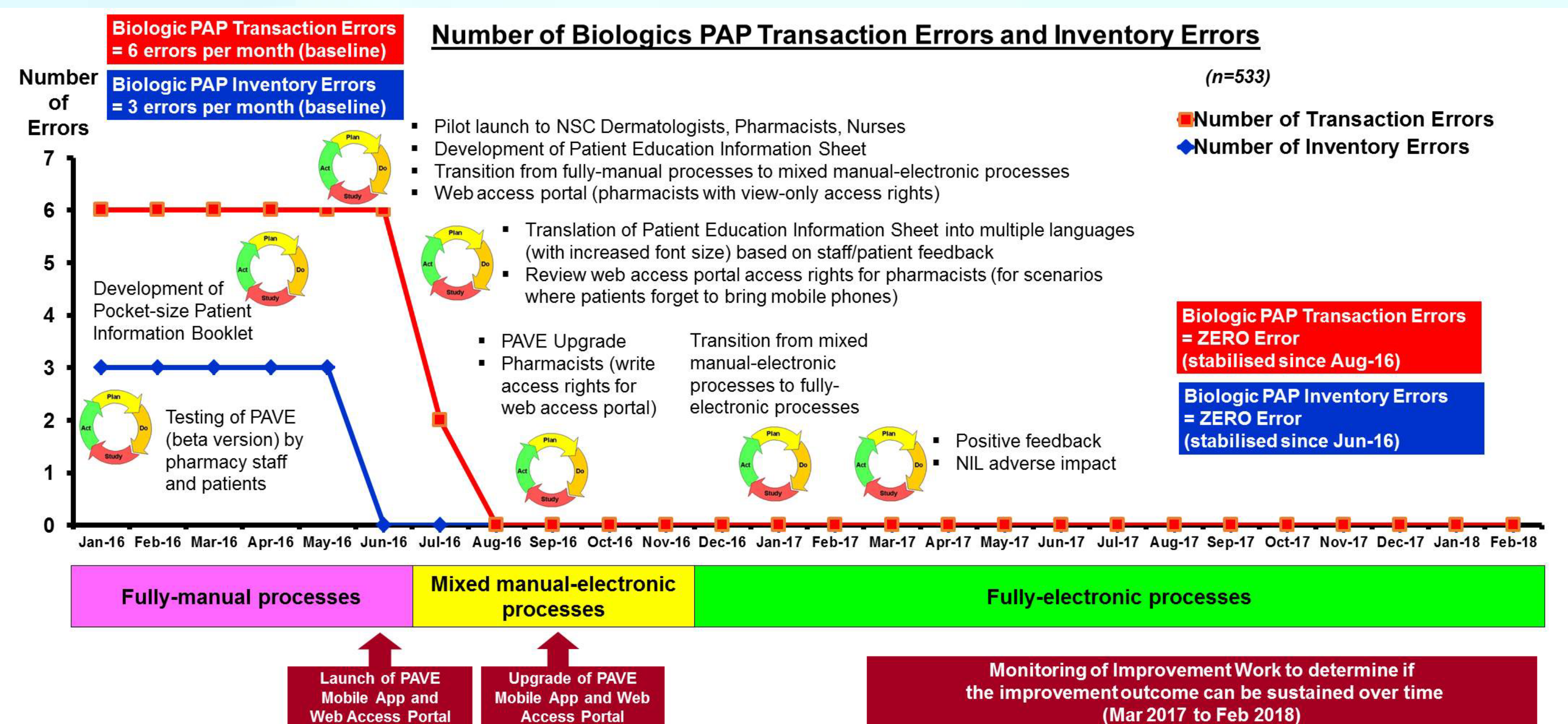


Results

- From June 2016 to February 2018, all the eligible NSC patients (n=119) adopted PAVE successfully and all their biologic PAP transactions (n=533) were monitored.

Quantitative Measures (project outcomes)	Baseline	PAVE Upgrade	Fully-Electronic
Number of Inventory and Transaction Errors	6 Per Month	0 Per Month	0 Per Month
Total Manpower Cost per transaction	SGD 10.44	SGD 2.26 (↓78%)	SGD 1.28 (↓88%)
Average patient waiting time in NSC Pharmacy	20 Minutes	13 Minutes (↓35%)	10 Minutes (↓50%)

(as of Jun-16) (as of Sep-16) (as of Mar-17) (sustained till Feb-18)



Conclusion

- PAVE mobile application and web access portal improved the operational efficiency of managing biologic PAPs in NSC Pharmacy in a sustained manner.
- Biologic PAP inventory and transaction errors were eliminated.
- Total manpower cost per biologic PAP transaction was reduced by 88% (to SGD 1.28).
- Average patient waiting time in pharmacy was reduced by 50% (to 10 minutes).