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Background of the Problem

Active printing and mailing of hardcopy invoices to patients create room for errors and **PDPA breach** when invoices are delivered to unintended recipients. In July 2021, a simple human error compromised 546 patient details (name, NRIC, address).

It is also prone to frequent machine breakdown, resource wastage and rework from the staff.



Figure 1: Outcomes of enveloping machine error

Mission Statement

To implement a smooth hospital-wide transition to paperless billing and process standardisation across all the service points in SGH.

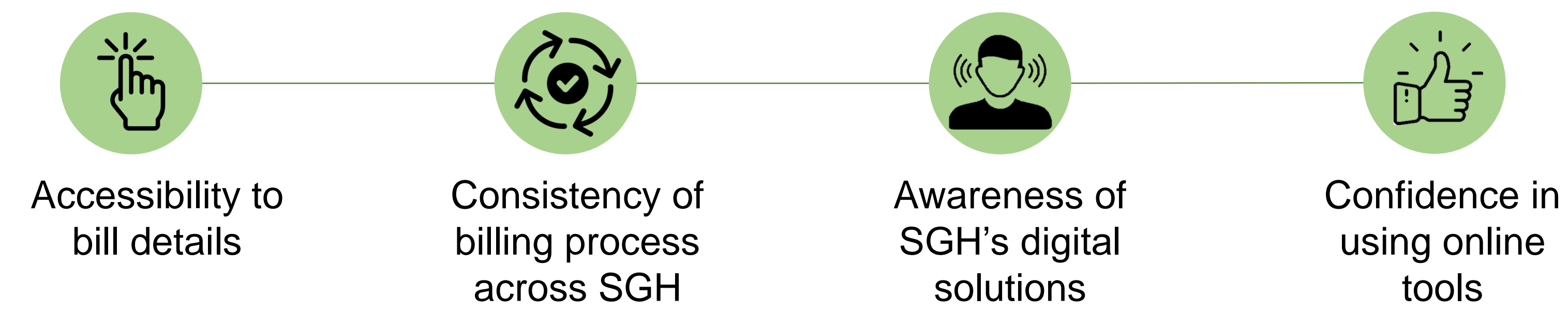
Analysis of the Problem

There are two types of patient bills printed and mailed from Patient Financial Services (PFS) office:

- Inpatient bills
- Outpatient bills that contain claims from
 - CPF Board
 - Private insurance
 - Third party payers

On average, PFS office sent out 2,112 mails containing invoices on each working day.

Based on ground observations, staff surveys and patient interviews, 4 improvement areas were identified:



The team had a brainstorming session to come up with potential interventions to address the improvement areas using a Driver Diagram.

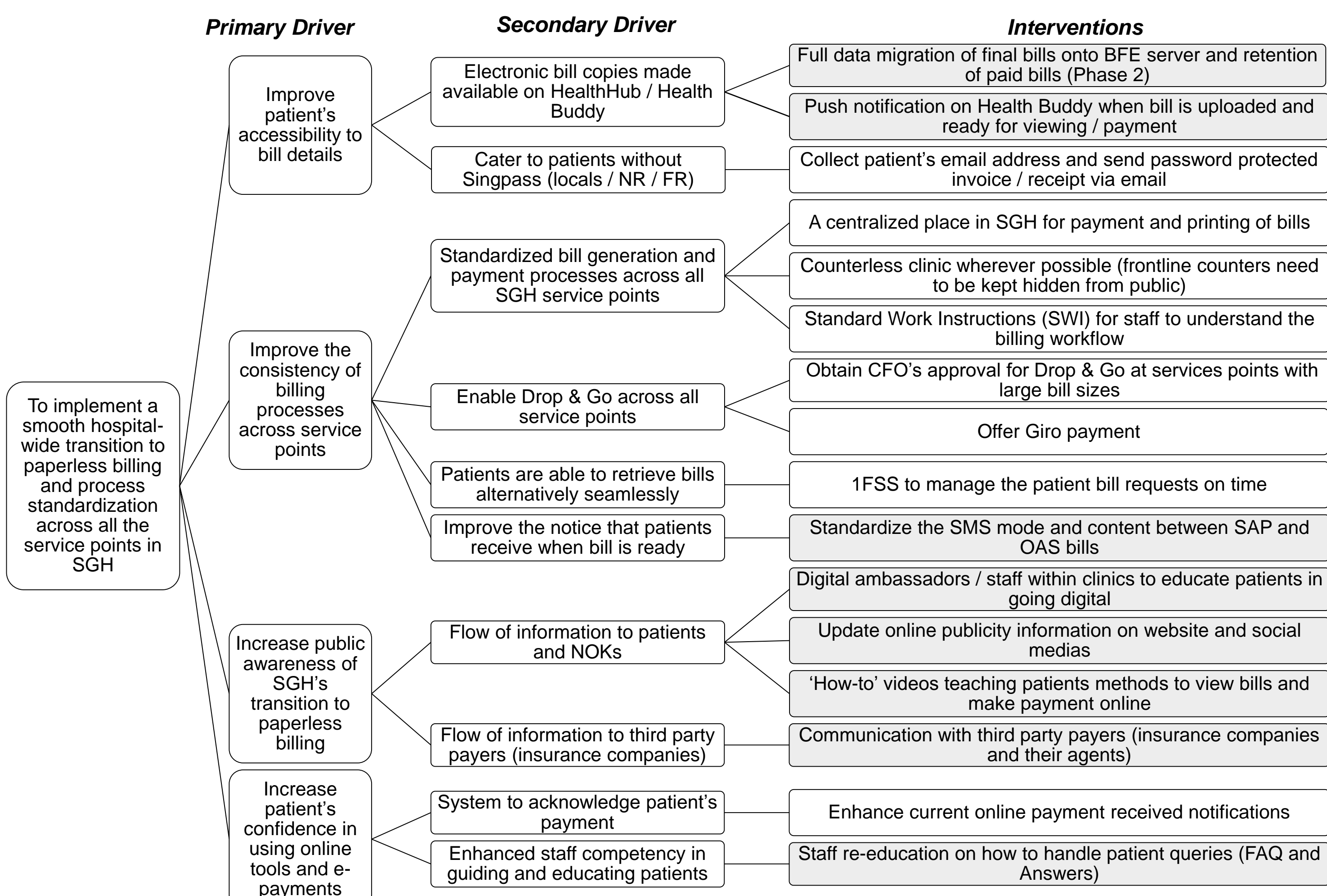


Figure 2: Outcome of Driver Diagram used for brainstorming of potential solutions where solutions adopted are highlighted

Initiatives and Implementations

- To address the *first* part of the mission statement, which was to implement a smooth hospital-wide transition to paperless billing process, a series of system enhancement and work process streamlining took place:
 - Bill presentment update on 24th September 2021
 - Rolled out SMS bill notification for inpatient bills on 30th November 2021
 - Presented paid bills on Health Hub on 22nd April 2022
 - Rolled out synchronized SMS bill notification for outpatient and DEM bills on 28th May 2022
 - Implemented app push notification on 13th June 2022 as an alternative to SMS

With all these in place, the team proceeded to **cease the printing and mailing of final bills** at PFS office on 1st June 2022.

- The *second* part of the mission statement required process standardisation across all service points in SGH. Prior to this project, the patient's journey involving Drop & Go varied from one service point to another. Hence, the team streamlined this by implementing **standardised Drop & Go exclusion criteria** to the following on 1st September 2022:
 - All non-Singaporean and non-Singapore PR patients (Patients' HRN starting with F / G / M / X) are required to make payment before leaving the hospital campus
 - All patients with bill size of medical services rendered at S\$1500 or above are to make payment before leaving the hospital campus

A wide array of publicity efforts were also implemented to drive adoption of Health Hub or Health Buddy to retrieve final bill, to reduce reliance on printed bill, and to reduce request to 1FSS for additional copies of final bill. A document with FAQs on the initiative was also circulated to all SGH staff.

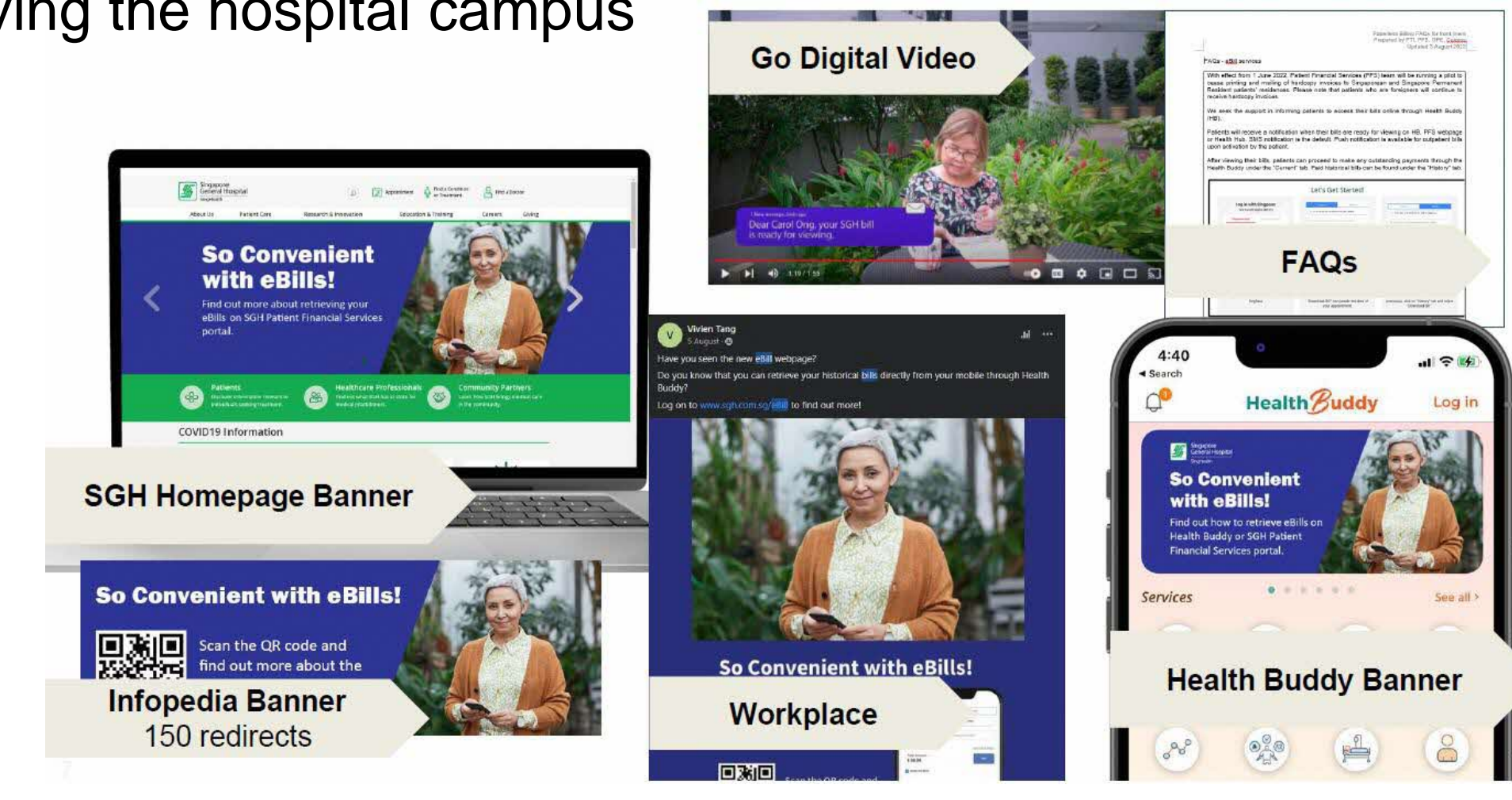


Figure 3: Various channels of publicity

Results

Requests for Printed Bills	eBill Webpage Views	Annual Savings	Patient Experience
<ul style="list-style-type: none"> 46% decrease from pre-implementation monthly median of 5392 to 2899 bills sent out from 1FSS. 	<ul style="list-style-type: none"> 50% compounding monthly growth rate (CMGR) of eBill webpage page views from the month of page go-live in June 2022 to it's peak (6150 views) in November 2022. 	<ul style="list-style-type: none"> Projected annual logistical cost-savings of \$221,816 resulting from 98% decrease in number of mails sent out from PFS department. 	<ul style="list-style-type: none"> No prominent cases of PDPA breaches nor major complaints regarding the new billing workflows reported to OPE.

Sustainability Plans

Digital ambassadors will continue to work towards patient education, especially to non-tech savvy group, to further strengthen the onboarding process to digital tools and solutions. OPE will also continue to monitor billing-related feedback to ensure patient experience is not compromised, and for continuous improvement.

Learning Points

- Overcoming barriers to paperless billing adoption
- Hearing the voice of customers → Engagement with SPAN members and receiving patients' billing-related feedback from OPE
 - Understanding the behaviors of different groups of patients → Providing alternatives to meet customer demands such as onsite payment collection for foreign patients and digitally less savvy patients
 - Understanding patient's needs → Partnership with FSS to provide additional support to provide bills as requested
 - Addressing the importance of patient education → Deployment of digital ambassadors and front-line staff to proactively introduce SGH digital solutions to patients and NOKs
 - Deploying multi-channel marketing strategy → Targeting both staff and patients to drive awareness at all possible interaction points to create persistent awareness of the paperless billing in SGH