

### **Project Title**

Digitalized HIV Screening

### **Project Lead and Members**

Project lead: SSN Melvin Khor

Project members: SSN Celeste Chng, Ms Bharathi Balakrishnan, Ms Margie Lian, Adon

Nancy Yeo, Adon Ng Wei Wei

### **Organisation(s) Involved**

Ng Teng Fong General Hospital

### **Healthcare Family Group Involved in this Project**

Nursing

### **Applicable Specialty or Discipline**

Communicable Diseases

### **Project Period**

Start date: 27 February 2023

Completed date: 31 May 2023

### **Aims**

- To improve 100% of efficiency and effectiveness of HIV data collation and extraction through digitalization.
- To provide accurate and timely HIV data to MOH.
- To support the eco-environment through saving paper and saving tree.
- To improve staff satisfaction.

## **Background**

See poster appended/ below

## **Methods**

See poster appended/ below

## **Results**

See poster appended/ below

## **Lessons Learnt**

“Show & Tell” to Nurse Leaders, on reason for change & result achieved at pilot wards. Spread to all inpatient ward in NTFGH with NI Champions. In future, this can be a sub-requisite embedded in EMR ‘Navigator: Admission Tab’

## **Conclusion**

See poster appended/ below

## **Project Category**

Care & Process Redesign

Quality Improvement, Clinical Practice Improvement

## **Keywords**

HIV Screening, HIV Data Collection, Digitalization

## **Name and Email of Project Contact Person(s)**

Name: Melvin Khor

Email: [Melvin\\_Khor\\_Tze\\_Khang@nuhs.edu.sg](mailto:Melvin_Khor_Tze_Khang@nuhs.edu.sg)

# DIGITALIZED HIV SCREENING

MEMBERS: SSN MELVIN KHOR, SSN CELESTE CHNG, MS BHARATHI BALAKRISHNAN & MS MARGIE LIAN  
ADVISORS: ADON NANCY YEO, ADON NG WEI WEI

- SAFETY
- QUALITY
- PATIENT EXPERIENCE

- PRODUCTIVITY
- COST

## Define Problem, Set Aim

### Problem/Opportunity for Improvement

The paper HIV data collection was extremely manual and time consuming for both inpatient nurses and nursing admin staff. It accounts an average of 20% compliance rate in HIV screening submission. It also compromises data entry due to compliance rate and prone to human errors during data extraction.

### Aim

- To improve 100% of efficiency and effectiveness of HIV data collation and extraction through digitalization.
- To provide accurate and timely HIV data to MOH.
- To support the eco-environment through saving paper and saving tree.
- To improve staff satisfaction.

## Establish Measures

### Outcome measure

In year 2022, out of 30, 235 patient admission, only 12% (3,909) of the paper HIV screening forms received from NTFGH wards. In the 2<sup>nd</sup> quarter of 2023, out of 8,080 patient admission, 34% (2,751) forms were submitted digitally.

### Process measure

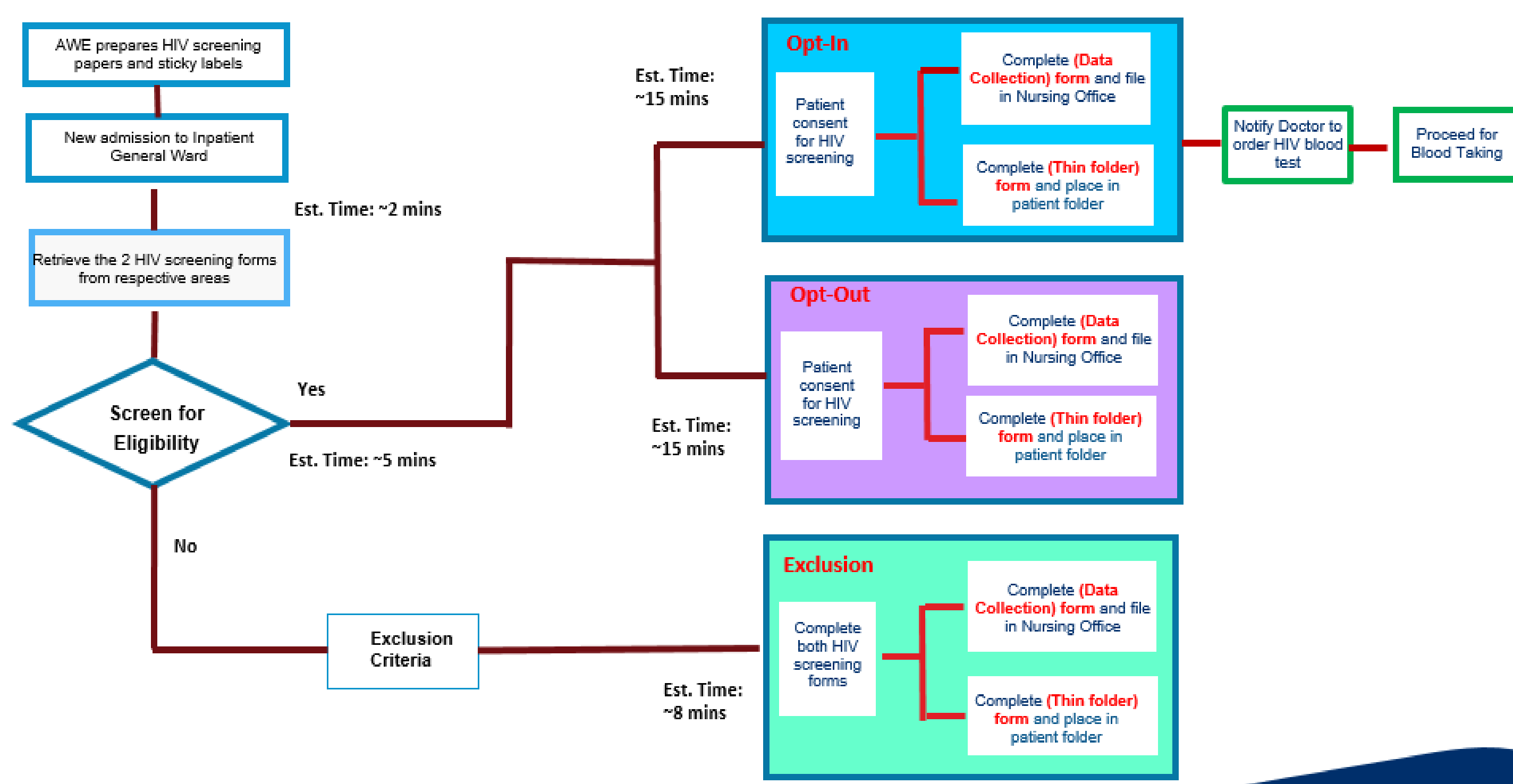
Digital submission via HIV FormSG.

### Balancing measure

100% submission of digital HIV screening forms from all NTFGH wards.

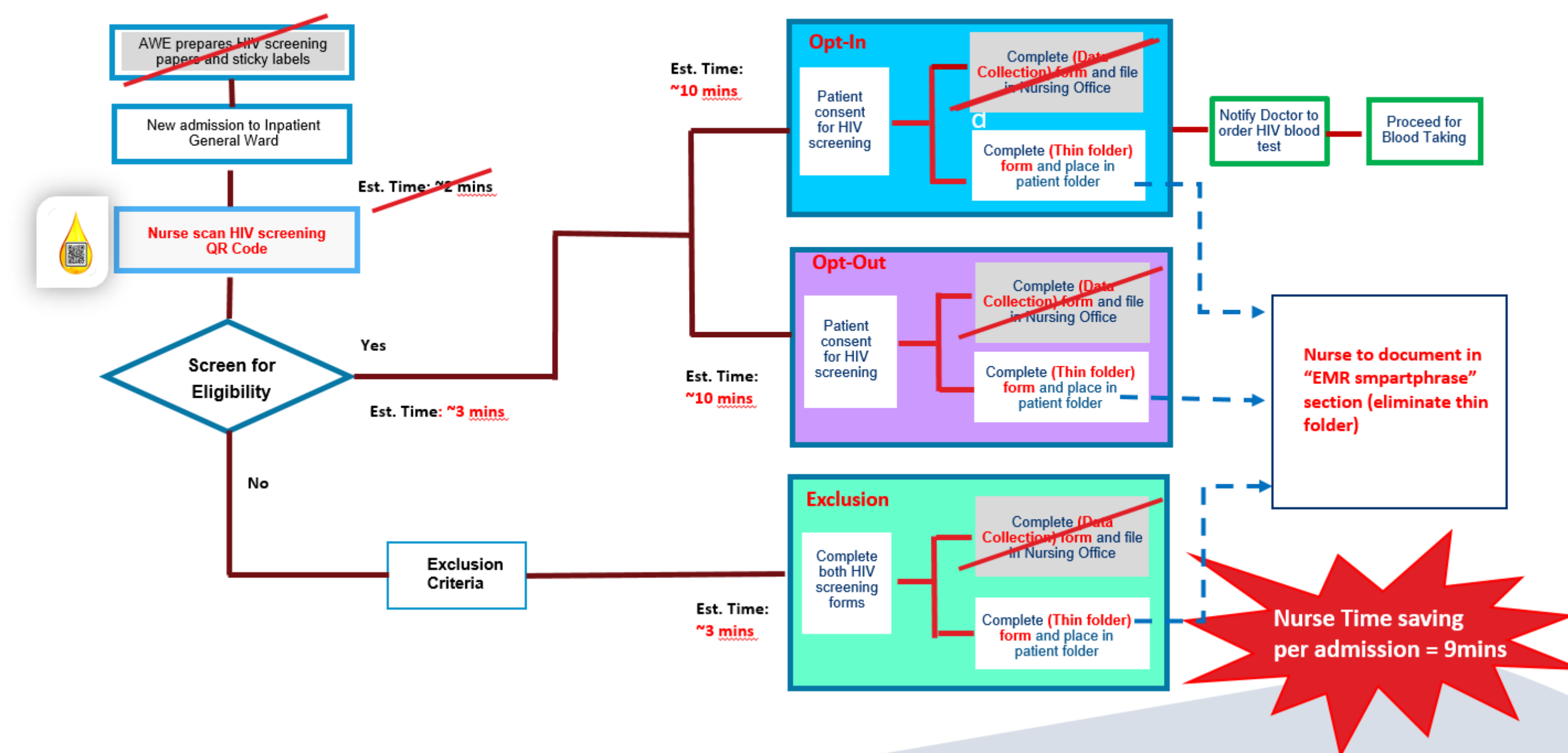
## Analyse Problem

### CURRENT PROCESS FOR PAPER HIV SCREENING



## Implement Changes

### PROPOSED PROCESS FOR DIGITAL HIV SCREENING



## Implement Changes

| Scope                            | Timeline       | Status  |
|----------------------------------|----------------|---|
| 1 Pilot in B9S & B10S            | Mar- Apr 2023  | <ul style="list-style-type: none"> <li>• Pre-Survey: 27 Feb-5 Mar 2023</li> <li>• Post- Survey: 3-9 Apr 2023</li> <li>• Discussed to streamline process</li> <li>• Design QR code and FormSG</li> </ul> |
| 2 Showcase Pilot & Communication | April – May    | <ul style="list-style-type: none"> <li>• Design recipe card</li> <li>• Launched QR code in Intranet</li> <li>• Revised FormSG</li> <li>• Presented to COO and NLM</li> </ul>                            |
| 3 Spread                         | May to present | 100 % roll out to NTFGH wards   |

[Restricted, Non-sensitive]

### Recipe Card: Digitalized HIV Screening for Inpatient Ward

**Objectives:**

- To improve the efficiency and effectiveness of HIV data collation and extraction through digitalization.
- To support the eco-environment through saving paper and saving tree.

**Process:**

To adopt the HIV screening questionnaire QR code and document in EMR by using 'SMARTPHRASE': .HIV

**Exclusion Criteria:**

- Unconscious/Unfit
- Admit to ICU/Isolation Ward
- Renal Dialysis
- Police case: Cat A / B
- HIV test done 5 a year
- Work Permit holder

**Opt In / Out:**

- Patient age ≥ 21 above
- Singaporean or SPR

Process Owner: ADON Nancy Yeo & Ag ADON Ng Wei Wei  
Last Updated on 28 April 2023

## Results

| Year 2022                |       |       |      |      |        |
|--------------------------|-------|-------|------|------|--------|
|                          | Q1    | Q2    | Q3   | Q4   | Total  |
| No. of patient admission | 6238  | 7445  | 8576 | 7976 | 30,235 |
| Opt Out + Exclusion      | 654   | 1060  | 524  | 342  | 2580   |
| Opt In                   | 419   | 317   | 350  | 243  | 1329   |
|                          | 1,073 | 1,377 | 874  | 585  | 3,909  |

| Year 2023                |      |      |    |    |       |
|--------------------------|------|------|----|----|-------|
|                          | Q1   | Q2 * | Q3 | Q4 | Total |
| No. of patient admission | 8244 |      |    |    |       |
| Opt Out + Exclusion      | 551  |      |    |    |       |
| Opt In                   | 29   |      |    |    |       |
|                          | 580  |      |    |    |       |

\*Digitalization of HIV Screening commenced on 8 May 2023

| Count of Ward      | Column | May         | Jun         | Grand Total |
|--------------------|--------|-------------|-------------|-------------|
| WB3S               |        | 64          | 109         | 173         |
| WB5P               |        | 26          | 55          | 81          |
| WB5S               |        | 94          | 160         | 254         |
| WB6P               |        | 21          | 52          | 73          |
| WB6S               |        | 74          | 99          | 173         |
| WB7P               |        | 7           | 28          | 35          |
| WB7S               |        | 78          | 107         | 185         |
| WB8P               |        | 33          | 33          | 66          |
| WB8S               |        | 53          | 75          | 128         |
| WB9P               |        | 31          | 44          | 75          |
| WB9S               |        | 104         | 113         | 217         |
| WB10P              |        | 34          | 82          | 116         |
| WB10S              |        | 53          | 66          | 119         |
| WB11S              |        | 36          | 51          | 87          |
| WB12S              |        | 34          | 28          | 62          |
| WB13S              |        | 41          | 45          | 86          |
| WB14S              |        | 34          | 81          | 115         |
| WB15S              |        | 4           | 97          | 101         |
| WB16S              |        | 72          | 101         | 173         |
| WC7S               |        | 63          | 86          | 149         |
| WC8S               |        | 52          | 84          | 136         |
| WC9S               |        | 54          | 72          | 126         |
| <b>Grand Total</b> |        | <b>1062</b> | <b>1668</b> | <b>2730</b> |

## Spread Changes, Learning Points

### Spread Changes

'Show & Tell' to Nurse Leaders, on reason for change & result achieved at pilot wards  
Spread to all Inpatient wards in NTFGH with NI Champions.

### Key Learning

In future, this can be a sub-requisite embedded in EMR 'Navigator: Admission Tab'.