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## 1. Selection of Opportunities for Improvement

### Problem Prioritization SMART Criteria

No.	Problems	Scale					Total
		S	M	A	R	T	
1.	Incorrect paediatric dose measurement by patient caregivers in Outpatient Pharmacy HBG.	16	15	15	11	13	70
2.	High number of patients with incorrect & improper insulin administration in Female Medical Ward HBG.	15	13	15	10	12	65
3.	Low number of registered patients with 'Lokar Ubat' Value-added Service (VAS) in Outpatient Pharmacy HBG.	14	16	16	16	17	<b>79</b>
4.	High number of omission errors against total number of prescription interventions in Pharmacy Department HBG.	18	12	13	11	13	67
5.	Inappropriate use of reliever inhaler among asthmatic /COPD patients at Outpatient Pharmacy HBG.	12	8	9	9	8	46

### Introduction

'Lokar Ubat' VAS is a pharmacy value-added service by which patients can obtain their refill medications in designated lockers outside of office hours within a duration of time:

- Started in HBG since April 2021.
- Total of 40 keyless lockers, can accommodate up to 160 patients per month.
- Located at waiting area of Farmasi Klinik Pakar, Hospital Batu Gajah

### Problem Statement & Literature Review

**S Seriousness** - Finding from audit by Cawangan Audit Dalam (CAD) MOH in February 2022 - the lockers were underutilised, registration was only 31.3% in HBG. Also reprimanded in Mesyuarat Jawatankuasa Farmasi Ambulatori BPF Perak in 2022, since service not being used optimally → waste of resource. Patient not getting benefit of timely and convenient medication refill, may affect medication adherence and lead to poor therapeutic outcome.

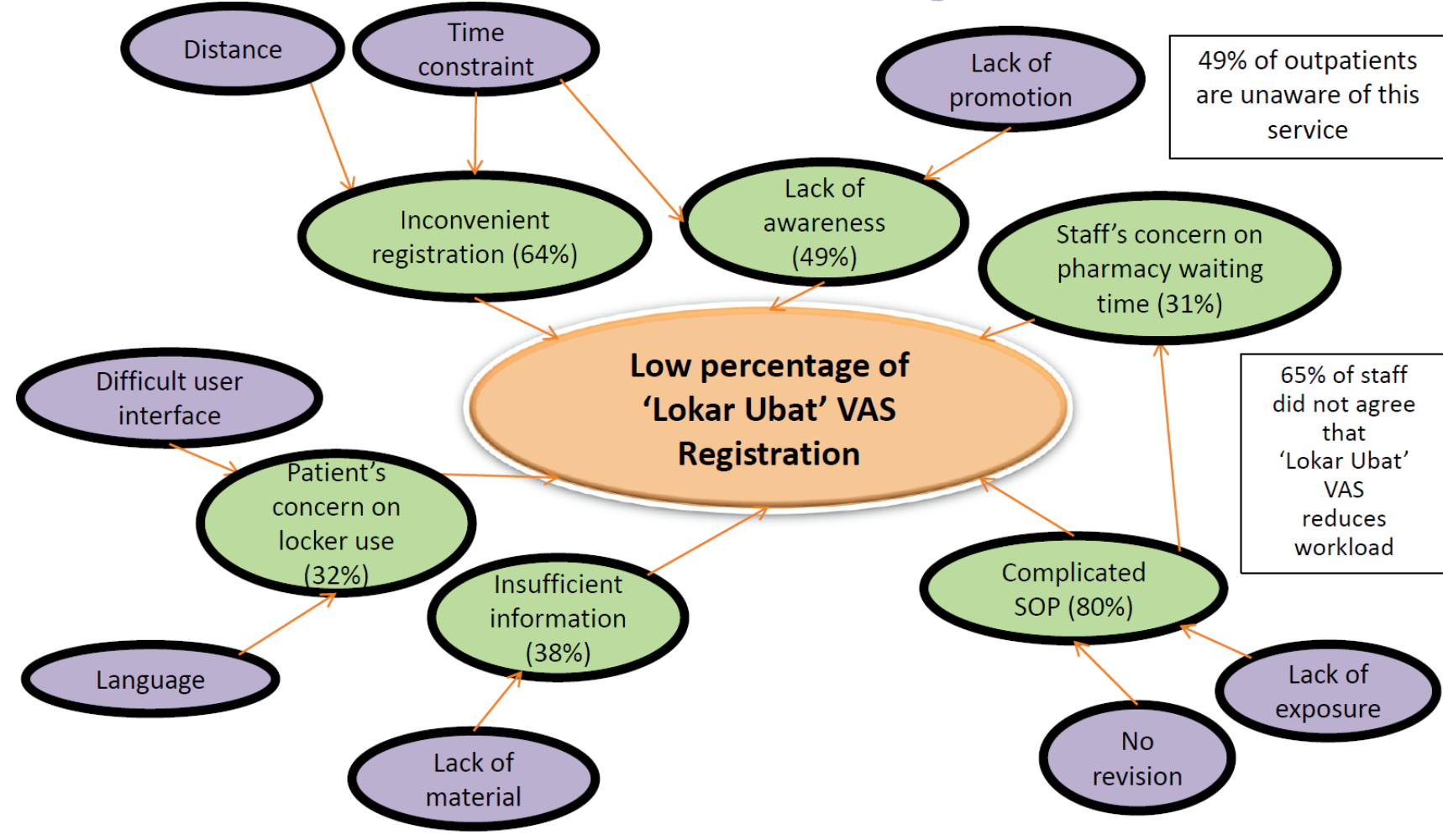
**M Measurable** - Data can be collected through "HBG 'Lokar Ubat' Registry"

**A Appropriateness** - Appropriate - related to core duty in hospital and is consistent with the organization goal to provide good service towards patient care. Improvement in the continuation and quality of care.

**R Remediable** - Remedial measures can be taken and implemented to increase the number of registered patient with 'Lokar Ubat' VAS in HBG.

**T Timeliness** - The best period to conduct the study since the problem has not been solved. The study and remedial measures can be carried out within 12 months.

### Problem Analysis



## 2. Key Measures for Improvement

### General Objective of Study

- To increase the percentage of patients using and registered with 'Lokar Ubat' VAS in Pharmacy Department HBG

### Specific Objectives of Study

- To determine the percentage of patients currently registered with 'Lokar Ubat' VAS in HBG.
- To identify factors contributing to low level of 'Lokar Ubat' VAS registration in HBG.
- To formulate and implement appropriate measures in order to increase the percentage of patients registered with 'Lokar Ubat' VAS in HBG.
- To evaluate the effectiveness of remedial measures taken.

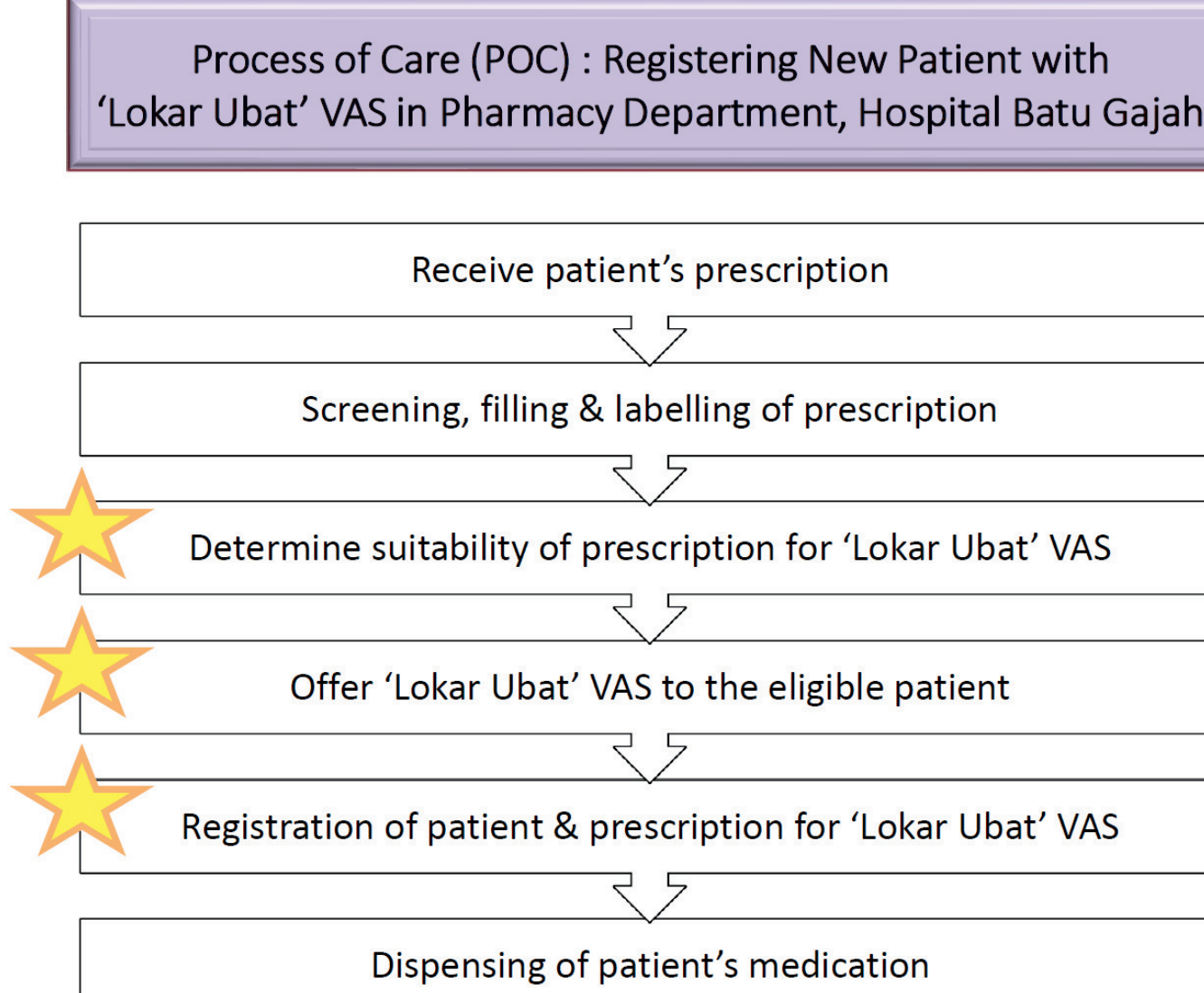
### Indicator

Percentage (%) of 'Lokar Ubat' VAS utilisation in Pharmacy Department HBG

$$\text{Percentage (\%)} = \frac{\text{Number of patients registered with 'Lokar Ubat' VAS}}{\text{Total number of patients can be registered with 'Lokar Ubat' VAS in Pharmacy Department HBG}} \times 100$$

### Standard set as 100%

Based on departmental consensus, in accordance with 'Pekeliling Perbendaharaan (PP) Perolehan Kerajaan (PK) 1 (Dasar Perolehan Kerajaan) Perenggan 6(i)(a)' - states assets must be fully utilized:



## 3. Process of Gathering Information

### Methodology

**Type of Study** - Quality improvement study

**Sampling Method** - Universal sampling

**Data Collection** - HBG 'Lokar Ubat' Registry, PF Report

**Study Sample** - Patient with repeat prescription at Outpatient Pharmacy HBG

**Exclusion Criteria** - Patient with prescriptions not complying with HBG 'Lokar Ubat' VAS terms and conditions

**Study Period**

Pre-remedial	Remedial Measures Cycle 1	Post-remedial Cycle 1	Remedial Measures Cycle 2	Post-remedial Cycle 2
November 2022 to December 2022	January 2023 to March 2023	April 2023	April 2023 to June 2023	July 2023

## 4. Analysis and Interpretation

### Pre-Remedial Phase Data

Number of patients registered with 'Lokar Ubat' VAS in Pharmacy Department HBG (A)	Total number of patients can be registered with 'Lokar Ubat' VAS in Pharmacy Department HBG (B)	Percentage of 'Lokar Ubat' VAS utilisation in Pharmacy Department HBG (%)
63 patients	160 patients	$\frac{63}{160} \times 100\% = 39.4\%$

Pre-remedial percentage was low, which was 39.4% (ABNA of -60.6%).

Analysis for the MOGC found that 3 processes did not comply with the standard; only 1.68% of eligible patients were offered the service and only 50% of patients who agreed to the service will be registered.

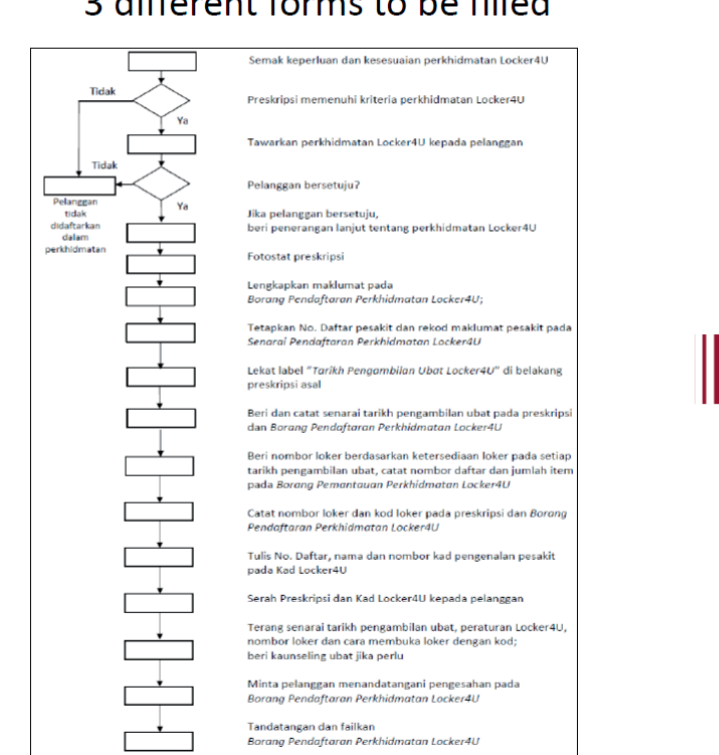
## 5. Strategies for Change

### Cycle 1 January - March 2023

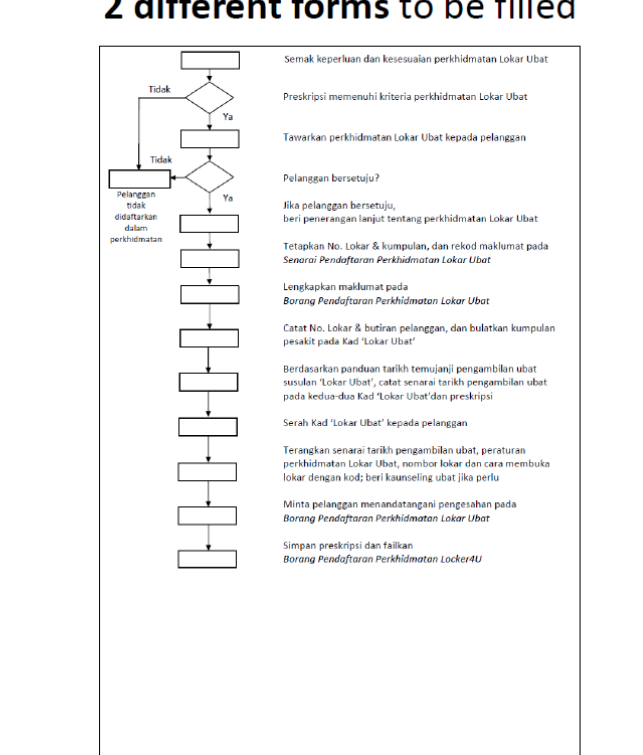
Factors	Strategies for Change
Complicated Standard Operating Procedure (SOP)	1. Revision of 'Lokar Ubat' procedure 2. New medication collection schedules 3. New design of 'Lokar Ubat' Card 4. Training of related staffs with revised SOP 5. Circulation of revised SOP to all staffs 6. Publication of an article in Pharmacy Bulletin
Concern regarding outpatient pharmacy waiting time	
Lack of awareness regarding 'Lokar Ubat' VAS	1. O&G Clinic Collaboration 2. Enhancement of promotional materials
Insufficient information provided regarding 'Lokar Ubat' VAS	
Inconvenient registration process	1. Addition of registration station 2. 'Lokar Ubat' Registry accessible in Dropbox
Patient's concern on locker use	1. QR code for locker opening guide

### Revision of 'Lokar Ubat' SOP

Previous SOP: 15 steps and 3 different forms to be filled



Revised SOP: removal of 4 steps and 2 different forms to be filled



Reduction of initial registration process from 15 minutes to <5 minutes.

Reduction of subsequent registration process from 10 minutes to 2 minutes.

### New Medication Collection Schedules

Previous: Manual Calculation of Date and Allocation of Free Locker

NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
NO	1301	1302	1303	1304	1305	1306	1307	1308	1309	1310	1311	1312	1313	1314	1315

Now: Date & locker given based on group assigned during registration process

Panduan Tarikh Kutipan Ubat Melalui Perkhidmatan Lokar Ubat Unit Farmasi, Hospital Batu Gajah	Kumpulan	Tarikh
A	1 - 4 hb	
B	8 - 11 hb	
C	15 - 18 hb	
D	22 - 25 hb	

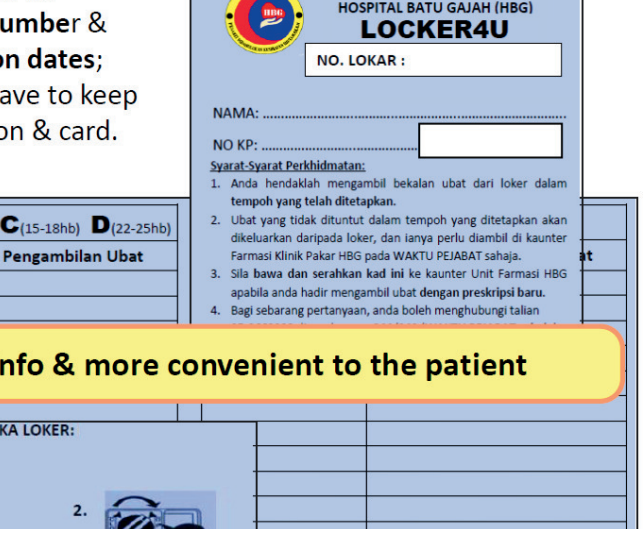
- Fixed dates & lockers
- Minimal risk overlap error
- Easier for patient to remember
- Ease staffs' burden
- Time saving
- More days to restock lockers

### New Design of 'Lokar Ubat' Card

Previous card



New card



### Staff's Training, Circulation of Revised SOP & Publication of Article in Bulletin

Coverage: 100% of Outpatient Pharmacy Staffs

Session	Date	Number of Staff
1	3/2/2023	7
2	12/2/2023	5
3	18/2/2023	4

100% of Outpatient Pharmacy Staffs



## Collaboration with Obstetric & Gynecology (O&G) Clinic HBG

Survey finding: younger patients are more likely to be interested, prefer flexibility in time, and has not much problem to use keyless locker.



Nurses in the clinic promote and offer the service to young O&G patients.

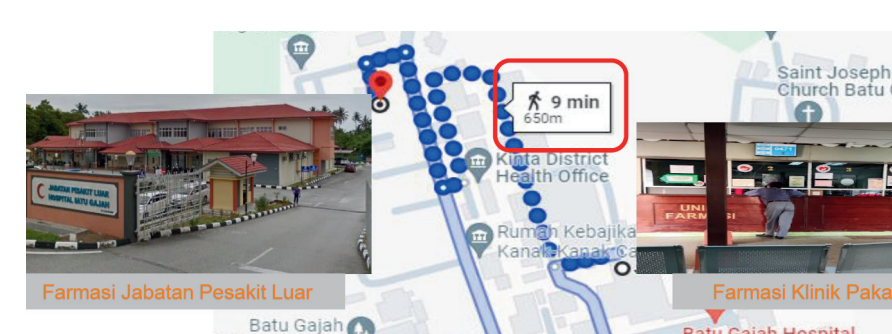
### Enhancement of Promotional Materials including Video & Leaflet

VAS Quick Guide - fast check info on each VAS and benefits, placed at the back of the chairs at pharmacy waiting area.

Video - played daily at pharmacy waiting area.

### Addition of Registration Station

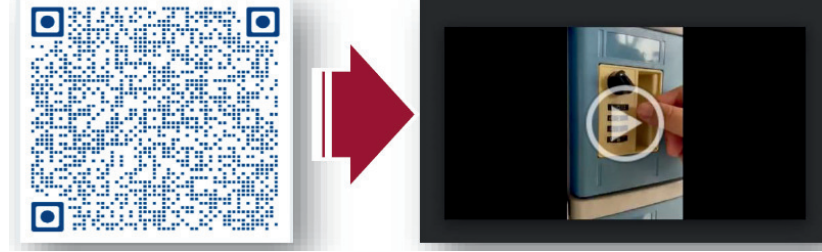
Previously registration was only at FKP where the lockers were located. Distance between outpatient clinics with FKP = 650m or 9 minutes' walk.



Now registration can be done at both FKP and FJPL, with registry accessible via Dropbox.

### QR Code for Locker Opening Guide

Fast access, convenient & versatile. Available at lockers' location & on 'Lokar Ubat' card.

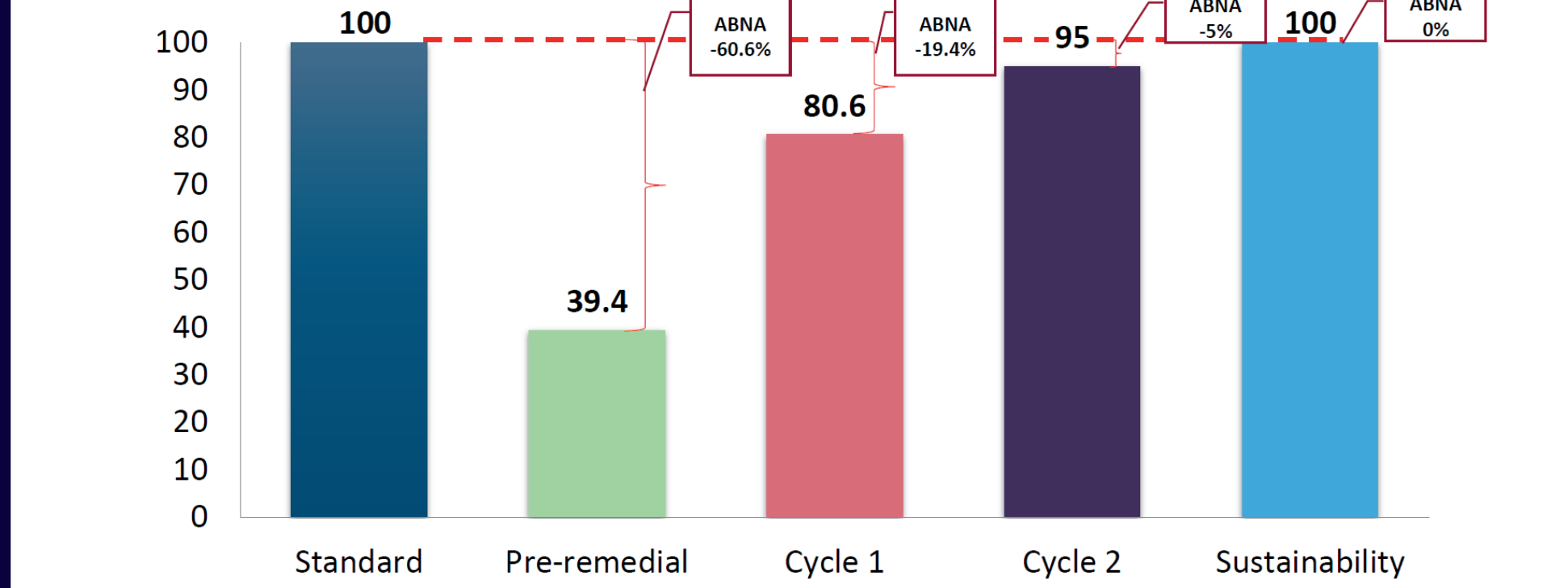


## Cycle 2 widen the coverage of patients to the older age group. Based on survey, 19 respondents not interested in 'Lokar Ubat' VAS were >60 years old and Chinese.

Factors	Strategies for Change
Patients concern on locker use	1. Multilingual guide 2. Service to assist patients opening their lockers in presence of staff
Complicated Standard Operating Procedure (SOP)	1. VAS 'Lokar Ubat' registration kit 2. Date calculator Excel sheet
Concern regarding outpatient pharmacy waiting time	3. Tagging of collection schedule date on each PC monitor in outpatient dispensing area

## 6. Effects of Change

Following the remedial actions implemented, the percentage of 'Lokar Ubat' VAS utilisation increased from 39.4% pre-remedial (ABNA of -60.6%) to 80.6% post-Cycle 1 (ABNA of -19.4%), and further increased to 95% post-Cycle 2 (ABNA of -5%). A sustainability study revealed that the percentage reaching 100% and ABNA reduced to 0%.



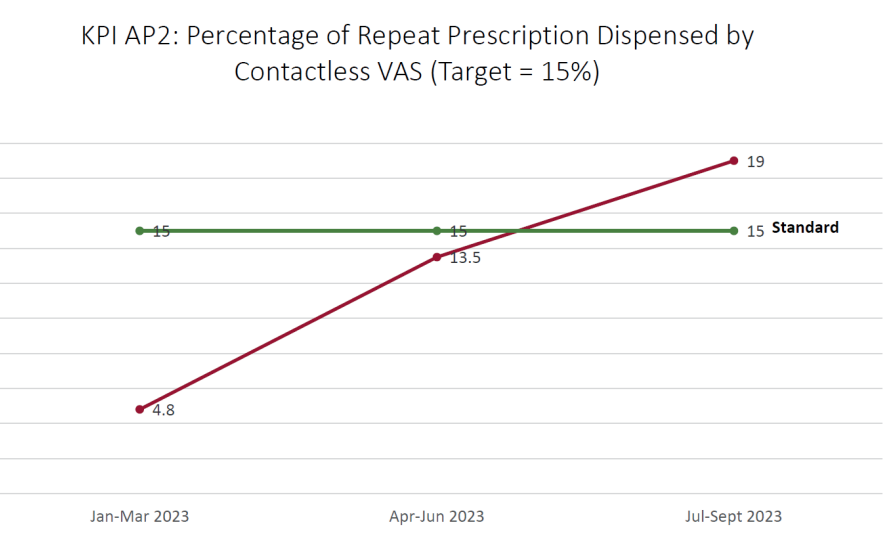
Most criteria in MOGC also showed improvement, with the desired target of 100% achievement.

### Model of Good Care (MOGC) - Registering New Patient with VAS 'Lokar Ubat' in Pharmacy Department, Hospital Batu Gajah

Process	Criteria	Standard (%)	Pre (%)	Post 1 (%)	Post 2 (%)
Determine the suitability of prescription for VAS 'Lokar Ubat'	Check whether patient already registered with any VAS in HBG.	100%	100%	100%	100%
Offer VAS 'Lokar Ubat' to the patient	Ensure prescription fits the criteria for VAS 'Lokar Ubat' and earmark to offer the service ✓ Prescription duration more than a month ✓ Prescription not including psychotropic item, fridge item or exchange basis item	100%	5%	75%	95%
Registration of patient & prescription for VAS 'Lokar Ubat'	Introduce VAS 'Lokar Ubat' to suitable patients and offer the service to all suitable patients.	100%	1.68%	80%	100%
	All patients who agrees to the service will be registered.	100%	50%	100%	100%

### Impact on Institution

Measures adopted and adapted has managed to increase the number of patients registered with other VAS, which in turn assisted in achieving the KPI AP2.



### Impact on Patient

Patient would enjoy reduced costs as there would be reduced days absent from work and would enjoy time savings as there will be reduced waiting time from 11.9 min to 0 min.

### Other Impacts

Based on post-remedial survey, overall staffs' perception improved significantly. And we have received appreciations from both management and patients.

## 7. Lessons Learnt & The Next Steps

In any changes involving patients, patient reassurance and confidence are of utmost importance. Secondly, ensuring convenience to both staff and patients are equally vital for the success of any new service.

And as with most projects, a multidisciplinary approach is indispensable. Collaboration among different disciplines ensures comprehensive consideration of all aspects of the service.

The next step involves surpassing 100% utilisation of 'Lokar Ubat' VAS by expanding medication collection groupings, and applying similar strategies to improve the utilisation rates of other VAS and future pharmacy services.

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