

REDUCING THE EXTERNAL GALENICAL PREPARATION ERRORS AMONG NORTHERN SEBERANG PERAI CLINICS



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1. SELECTION OF OPPORTUNITIES FOR IMPROVEMENT

Problems	S	M	A	R	T	Score
High rate of unclaimed medications among Value Added Services (VAS) patients	16	15	11	8	10	60
High rate of repeated intervention in pharmacy	15	15	14	15	12	71
High incidence of errors in external galenical preparation (EGP) among Northern Seberang Perai (SPU) clinics	16	18	15	23	20	92
Overlapping medication due to multiple follow up in different clinic.	18	11	15	20	18	82

Total Members: 8 Score: 1: Low 2: Moderate 3: High

S	EGP errors cause medication error, reduce efficacy in treatment, increase wastage and medical cost
M	Detecting no. of errors via observing EGP and checking galenical preparation labels
A	Prevention of medication preparation errors can improve medication safety and optimization of treatment
R	Standardization of protocols for preparation and label, education and training
T	Study and remedial measure can be completed in 1 year time

LITERATURE REVIEW

Medication errors may be due to **human errors**, but it often results from a flawed system with **inadequate backup** to detect mistakes³. Lack of standardization formula can lead to formulation failure². In addition to **monetary cost**, patients experience **psychological, physical pain and suffering** as a result of medication errors⁴.

PROBLEM STATEMENT

- A retrospective study (2022) found out that **58.3%** of the EGP across 6 clinics in SPU had varying in-use expiry dates and incomplete labels.
- This unstable EGP may lead to **ineffective treatment, longer hospitalization, and increased cost of treatment**.
- An error in the preparation will lead to the **entire batch** of product to be rejected, increasing the EGP waste and medical expenditures
- Factors contribute to the errors include **lack of knowledge, lack of product information updates** and **non-adherence to work procedures**.
- This study aims to reduce incidence of error in EGP.

Term	Definition
Galenical preparation	Preparing creams, lotions, oral solutions that are not available commercially
Medication error	Any preventable event that may cause or lead to inappropriate medication use or harm the patient, at any phase of drug therapy
External	Indicate that something is on the outside of a surface or body
In-use expiry date	The end of the application period, in which a medical product may be taken or applied <u>after the package has been opened</u> , respectively after a first dose of the medicinal product has been taken from the package

3. PROCESS OF GATHERING INFORMATION

Study Design	Study Period	Study Tools
• Cross-sectional study	• May 22 – July 23	• Data collection form • Questionnaires
Study Frame	Study Samples	Study Tools
• Pre-remedial: July 22 • Remedial: C1: Aug 22- Jan 23 C2: March 23 – May 23 • Post-remedial: C1: Feb 23 C2: June 23	• No. of EGP prepared • No. of EGP labels	• Data collection form • Questionnaires
Inclusion Criteria	Exclusion Criteria	
✓ All the EGP prepared.	✗ All the EGP which might be used internally (eg: Liquid paraffin)	

4. ANALYSIS AND INTERPRETATION

MODEL OF GOOD CARE					
Process	Criteria	Standard	Pre Remedial	1st Cycle	2nd Cycle
Fill in galenical preparation worksheet	1. Complete the worksheet before proceeding 2. Fill in PHIS system (If available)	100%	93%	100%	100%
Prepare raw material and label	1. Personnel identify the correct raw material, aware of different strength preparation Complete label with 1. Active ingredient 2. Concentration (if available) 3. Correct instruction 4. Batch number 5. Expiry date 6. Packaging size	100%	100%	100%	100%
Countercheck worksheet, raw material and label	1. Countercheck the worksheet, raw material and label before proceeding to preparation 2. Staff involved (PF/PPF) have good knowledge for counterchecking (n=42)	100%	42.2%	76.8%	97.7%
Prepare product	1. Prepare the product following the worksheet generated 2. Personnel prepare external galenical product have good knowledge on EGP (n=11) 3. Personnel prepare based on updated information	100%	100%	98.7%	100%
Countercheck end product	1. End products counterchecked by a Pharmacist / Pharmacist assistant 2. Staff involved (PF/PPF) have good knowledge for counterchecking (n=42)	100%	52.8%	76.2%	100%

Pre-remedial, ABNA was 61.1%

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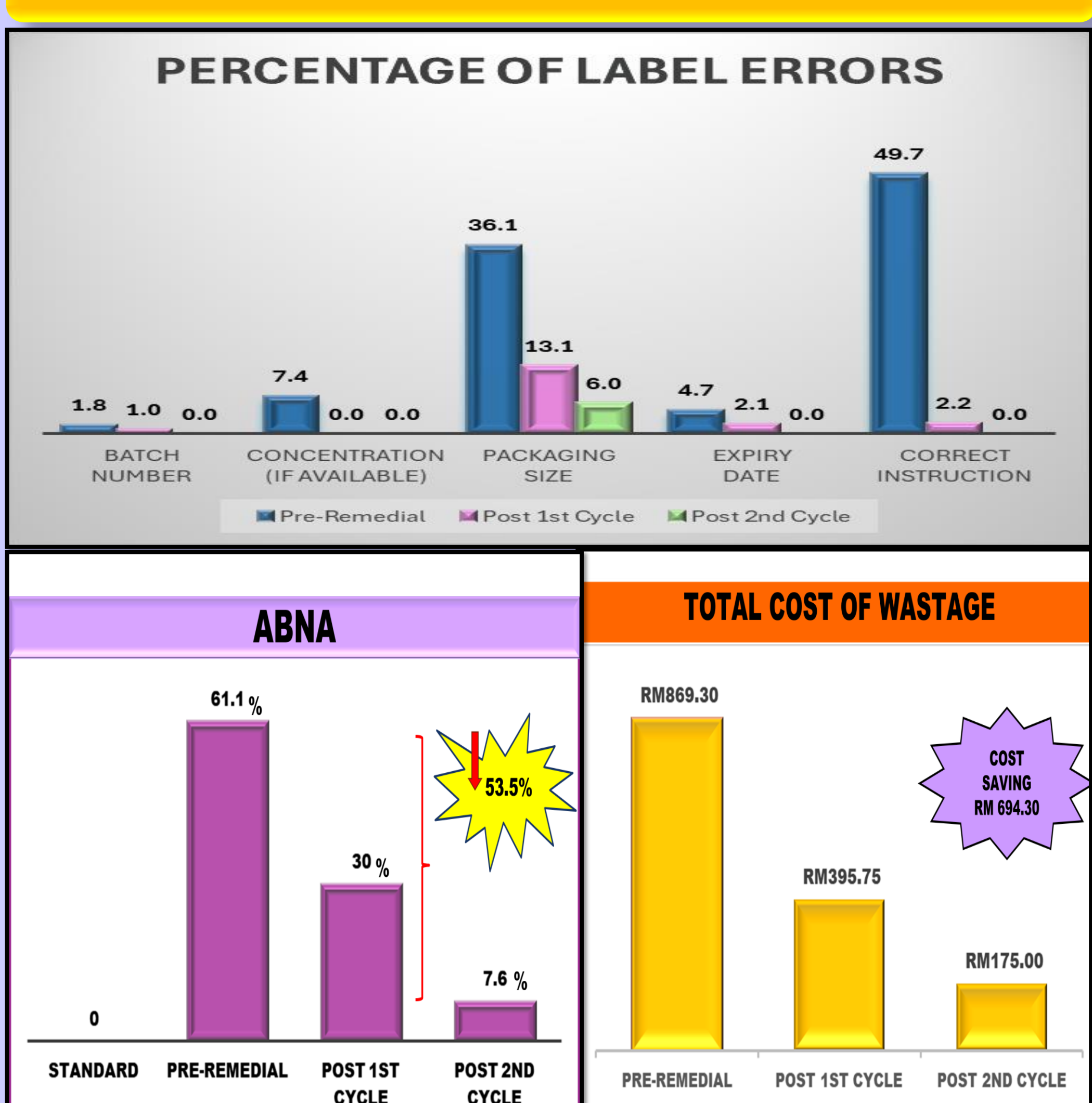
Poster ini dibentangkan di Korvensyen QA Kebangsaan Kali ke-12, 8-10 Oktober 2024, Negeri Sembilan

5. STRATEGY FOR CHANGE

VIMaSSS		First Cycle Remedial
Virtual CME		<ul style="list-style-type: none"> Virtual CME involve 6 clinics simultaneously To improve SOP adherent To improve knowledge of staff (PF/PPF) for counterchecking To improve knowledge of personnel involved (PRA/PPF) on stability data
Master List		<ul style="list-style-type: none"> Through JKUT meeting, delist some preparations & update current practice Update master list to get updated information
Standardization of worksheets		<ul style="list-style-type: none"> 6 New External Worksheets made available in M. Excel & shared among clinics in a shared folder To improve formulation documentations in EGP
Standardization of label		<ul style="list-style-type: none"> All the labels made available in Argox label & shared all clinics in a shared folder. To complete labelling of active ingredient & conc. (if available), correct instruction, BN, expiry date & packaging size
Sticker Gun Label		Added Sticker Gun Label

Second Cycle Remedial

6. EFFECTS OF CHANGE



Conclusion

- ABNA was successfully reduced from 61.1% to 7.6%.
- The main contributing factors were **incomplete documentation, lack of a counterchecking system** before preparation and after production, followed by **incomplete labelling**.
- Remedial measures (Virtual CME, Master list, Standardization of worksheet, Standardization of label & Sticker gun label) capable of resolving EGP errors
- The **cost** of wastage from EGP was decreased from RM869.30 to RM175.00

7. THE NEXT STEP

- Continuous education** on galenical preparation and product updates annually to staff especially new staff
- VIMaSSS** will be updated periodically and shared among SPU clinics
- Audit** will be done by pharmacist periodically
- Remedial measures may **share** with other facilities

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2. KEY MEASURES FOR IMPROVEMENT

General Objective	To reduce incidence of error in EGP from 61.1% in May 2022 to 0% in July 2023
Specific Objectives	To verify the incidence of EGP errors in SPU clinics from May 2022 to July 2023
	To identify the contributing factors attributing of EGP errors
	To formulate and implement the necessary remedial measures to reduce EGP errors
	To reevaluate the effectiveness of the remedial measures implemented.

STANDARD = 0% preparation error

INDICATOR

Percentage of preparation with error(s) detected:

$$= \frac{\text{Total number of preparation with errors}^*}{\text{Total number of external galenical preparation}} \times 100\%$$

*1 preparation might have few errors, considered as 1 preparation error