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1. SELECTION OF OPPORTUNITIES FOR IMPROVEMENT

1.1 Problem Prioritization

Problems	S	M	A	R	T	Total
Improper administration of eye drops among glaucoma patients	15	12	15	13	12	67
High percentage of defaulted VAS patients	11	13	15	10	10	59
Improper storage of cold chain eye drops storage by patients	15	11	12	11	13	62
Wastage of short expiry topical preparations produced by galenical unit	12	12	14	10	13	61
Inefficient UMP registration process	12	12	11	12	13	60

Group Members: 5	Score	1	2	3
	Indication	Low	Average	High

1.2 Justifications

S Seriousness	• Risk of treatment failure, adverse effects and wastage ²⁻⁴
M Measurable	• Eye drop administration steps assessment score
A Appropriateness	• Related to patient's care
R Remedial	• Remedial actions are within our expertise and resources
T Timeliness	• Can be completed within a short period of time

2. INTRODUCTION / LITERATURE REVIEW

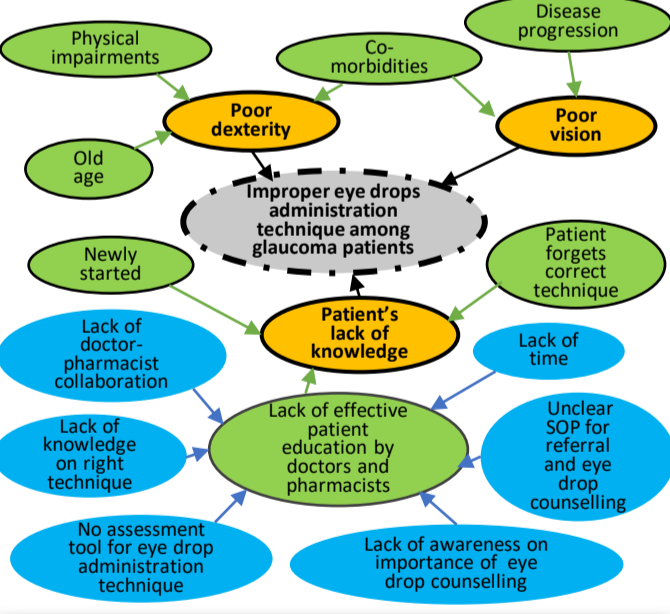
Glaucoma is a chronic disease with progressive optic neuropathy that can lead to blindness if untreated¹. Intraocular pressure (IOP) lowering eye drops are used to prevent disease progression¹. Studies showed that glaucoma patients performed multiple errors such as drops falling onto their cheeks, releasing too many drops and touching the bottle tip, which can lead to poor clinical outcomes, adverse effects and medication wastage²⁻⁴. The following seven critical steps were identified based on CPG¹, study by Lampert et al. 2019⁵ and discussion with Ophthalmology Department:

- Hand-washing
- Able to open the cover of the eye drop bottle
- Instillation of one drop
- Instillation into conjunctival sac
- Closing the eye with nasolacrimal occlusion for 2 minutes
- Not touching the dropper tip
- Waiting for 5 minutes between eye drops

Patient education could improve patient's technique significantly^{1,5,6}.

3. PROBLEM ANALYSIS

3.1 Cause-Effect Analysis Chart



4. OBJECTIVES

- 4.1 General Objective**
To improve eye drop administration technique among glaucoma patients in Outpatient Pharmacy Department (OPD) at HTAN
- 4.2 Specific Objectives**
- To verify the magnitude of improper eye drop administration technique among glaucoma patients in OPD, HTAN
 - To determine the probable causes contributing to improper eye drop administration technique
 - To formulate remedial measures and implement them
 - To evaluate the effectiveness of the remedial measures

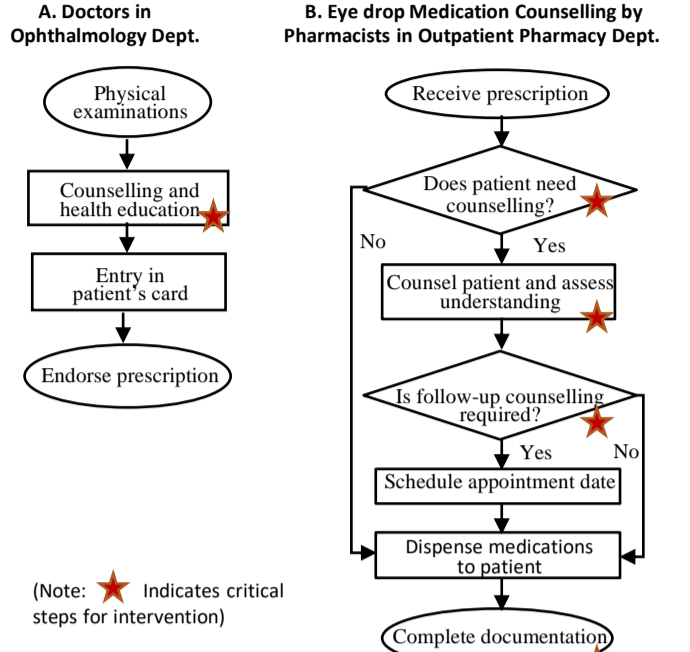
12. ACKNOWLEDGEMENT & REFERENCES

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5. KEY MEASURES FOR IMPROVEMENT

5.1 Process of Care



5.2 Model of Good Care (MOGC)

A. Ophthalmology Department

Process	Criteria	Standard	Verification
Counselling and health education	Counselling and health education are given and re-enforced during each visit.	100 %	69.2 %

B. Eye Drop Medication Counselling in Outpatient Pharmacy Department

Process	Criteria	Standard	Verification
Identify patient	Identify patients that require medication counselling.	100 %	21 %
Counsel patient and assess understanding	Counsel patients based on facility and MOH counselling guideline. Assess patient's understanding and compliance to medications.	100 %	100 %
Follow-up counselling	Schedule follow up counselling for patients with unsatisfactory level of understanding or compliance to medications.	100 %	0 %
Complete documentation	Outpatient Pharmacy Dept Counselling Form	100%	100%

5.3 Indicator

Percentage of glaucoma patients referred by doctors who correctly performed all 7 critical steps in eye drop administration one-month post-counselling.

5.4 Standard

60% (based on study by Lampert A et al. 2019⁵ and consensus with Ophthalmology Department)

$$\frac{\text{Total no. of glaucoma patients referred who correctly performed all 7 critical steps 1 month post-counselling}}{\text{Total no. of glaucoma patients assessed after 1 month}} \times 100$$

6. PROCESS OF GATHERING INFORMATION

Study Design	Cross Sectional Study
Study Location	Ophthalmology Department, HTAN Outpatient Pharmacy Department, HTAN
Study Duration	Verification Study: 1 Mac 2020 – May 2020 Cycle 1: Jun 2020 – Jan 2021 Cycle 2: February 2021 - July 2021
Tools	Questionnaires for doctors and pharmacists to verify magnitude of problem and contributing factors Medication Counselling Referral Forms Counselling Observer Assessment Checklist
Inclusion Criteria	All glaucoma patients ≥ 18 years old with incorrect eye drop administration technique referred by doctors. Caregiver who administers eye drops for the patient.
Exclusion Criteria	Patients with cognitive impairment Patients who are unable to attend follow-up counselling.

7. ANALYSIS AND INTERPRETATION

Glaucoma patients in HTAN (n=118)

- Only 4.2% performed all 7 critical steps in eye drop administration.
- The least performed step was nasolacrimal occlusion (42%).
- The main challenge faced were eye drops not falling into the eye (27%).

Ophthalmology doctors in HTAN (n=13)

- Barriers to counselling were time constraint (100%) and lack of counselling materials (50%).
- 62% were unaware of how to refer patients to pharmacist for medication counselling.

Pharmacists in HTAN (n=58)

- Barriers to counselling were lack of referrals from doctors (76%), time constraint (72%) and lack of skills and knowledge (65%).

8. STRATEGIES FOR CHANGE

Cycle 1 (Jun 2020 – Jan 2021)

Problems	Remedial Actions
Time constraint Lack of doctor-pharmacist collaboration.	New standard workflow for referral Medication counselling referral form
No clear workflow for eye drop counselling in OPD. Counselling often done over-the-counter.	New standard workflow for glaucoma eye drop administration counselling in Outpatient Pharmacy Department. (refer Figure 1)
Lack of counselling and assessment tools	Educational video (3 minutes, BM) Counselling observer assessment checklist Eye drop counselling chart

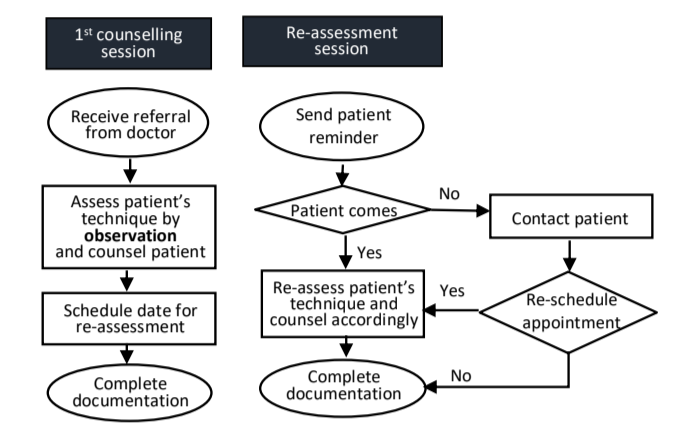


Figure 1: New standard workflow for glaucoma eye drop administration counselling in Outpatient Pharmacy Department

Cycle 2 (Feb 2021 – Jun 2021)

Problems	Remedial Actions
Nasolacrimal occlusion was the least correctly performed step	Anatomy of eye chart for counselling
Counselling aids for pharmacist were used only 54.5% of the time.	Improved video for eye drop counselling (1 min duration, 3 languages, large font size) Cuci tangan Counselling chart was converted to pamphlet for patient (simple design, large font size).
Poor patient turn-up rate or re-assessment	SMS or Phone call reminder
Time-consuming documentation	Medication counselling referral form Version 2 Counselling Observer Assessment Checklist Version 2 Removed unnecessary columns Combined medication counselling form and assessment checklist

9. EFFECTS OF CHANGE

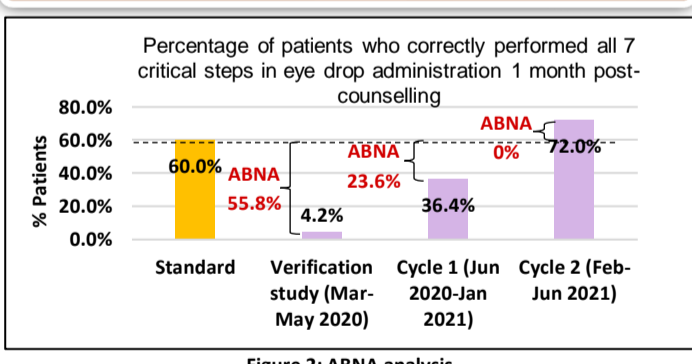


Figure 2: ABNA analysis

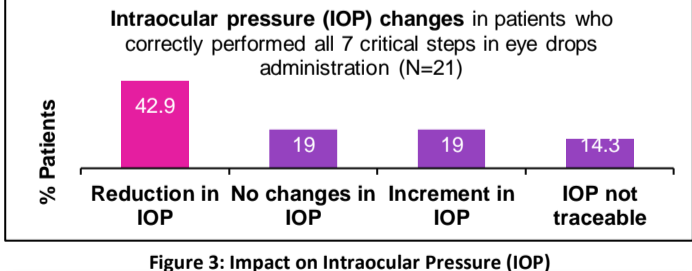


Figure 3: Impact on Intraocular Pressure (IOP)

10. CONCLUSION

- Percentage of glaucoma patients who administered eye drops correctly increased from 4.2% to 72% through remedial actions.
- Doctor-pharmacist collaboration could improve patient care by sharing of resources and expertise to leverage their limitations.

11. THE NEXT STEP

This study will be expanded to cluster hospitals and subsequently all hospitals in Negeri Sembilan with Ophthalmology Department.