



1 Selection of Opportunities for Improvement

1.1 Problem Prioritisation

TITLE	S	M	A	R	T	TOTAL
1. Low percentage of antenatal patients achieve orally fit status	16	16	11	11	8	54
2. High number of error in prescription medications to pharmacy unit	15	11	8	8	8	42
3. Low percentage of >60 years old patients issued denture within 8 weeks	18	17	9	13	10	57
4. High number of permanent filling dislodged	12	10	5	7	7	34
5. High number of repeated Xray taken in primary dental clinic	16	15	15	14	11	60

1.2 Reason of Problem Selection



1.3 Problem Statement

Problem
An audit of dental radiographs in Gombak dental clinics revealed that repeated radiographs constitute 13.47% to 20.96% of all taken, with a higher number of X-ray repetitions in Gombak district.

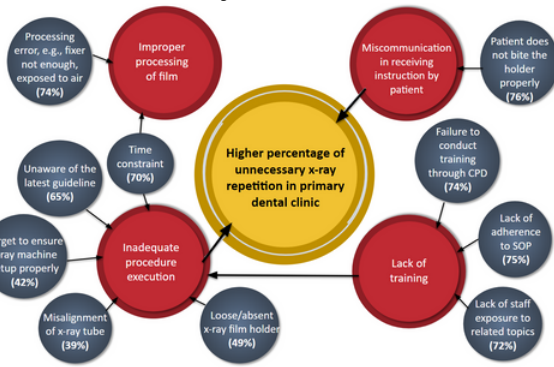
Effect
Higher number of repeated radiographs cause unnecessary radiation exposures to the patients and wastage of resources

Possible Cause
Multiple factors including improper processing film, inadequate procedure execution, lack of training and miscommunication in receiving instruction by patient.

Aim of Study
To reduce the percentage of unnecessary repeated radiographs taken in all primary dental clinics of Gombak.

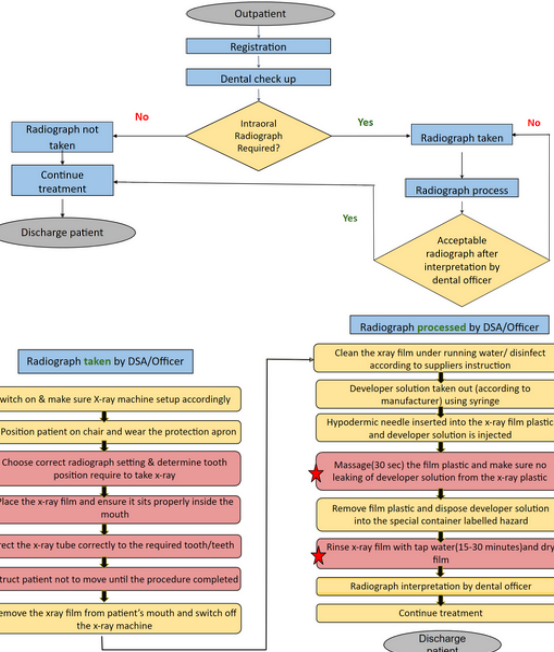
2 Key Measures for Improvement

2.1 Cause Effect Analysis



INDICATOR	FORMULA	STANDARD
Percentage of patient that repeat X-ray in primary dental clinic	$\frac{\text{Total number of patients that repeat X-ray}}{\text{Total number of patients required X-ray}} \times 100\%$	Equals to or < than 10%

2.2 Process of Care



Acknowledgement
We would like to express our gratitude to colleagues who willingly cooperated throughout this study being conducted. We would also like to thank our mentor, Dr Faizah binti Abdul Karim, for her undivided encouragement and support throughout this QA study.

GENERAL OBJECTIVE

To reduce the percentage of unnecessary repeated x-ray taken in primary dental clinic in Gombak district

SPECIFIC OBJECTIVES

- To determine the frequency of x-ray repeated in primary clinic
- To identify contributing factors to the x-ray repetition
- To formulate and implement remedial measures
- To evaluate the effectiveness of remedial measures

2.3 Model of Good Care (MOGC)

PROCESS	CRITERIA	PRE-REMEDIAL (%)	POST-REMEDIAL Cycle 1 (%)	POST-REMEDIAL Cycle 2 (%)	STANDARD (%)
Select the correct radiograph program	a. Choose the correct setting : anterior-0.20-0.25 premolar-0.25-0.30 molar-0.30-0.35	57	78	100	100
Place the radiograph film in the patient's mouth and ensure film stays in place	a. Check the expiry date of film	42	94	100	100
	b. Ensure the film is parallel to the long axis of tooth	62	90	100	100
	c. Ensure patient bite firmly on the bite holder	50	83	100	100
Position the x-ray tube correctly to the tooth and film	a. Ensure the x-ray tube parallel to the x-ray frame	62	90	100	100
Remind patient not to move while radiograph is being taken	a. Ensure patient to sit in upright position	100	100	100	100
	b. Remind patient not to move their head	74	95	100	100
Developer solution taken out and injected into the plastic film	a. Check the expiry date of the solution	100	100	100	100
Massage the film plastic and ensure no leaking of developer solution	a. Massage the film for 30 seconds	71	96	100	100
Rinse x-ray film with tap water and dry film	a. Ensure to wash film for 10-15 mins	67	75	100	100
	b. Dry the film using air syringe until completely dry	100	100	100	100

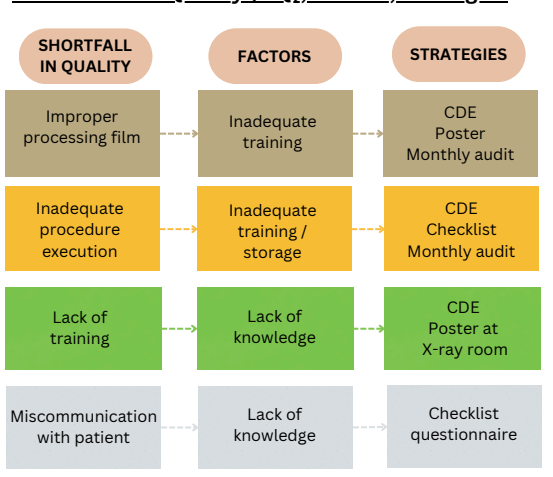
3 Process of Gathering Information

3.1 Methodology

ITEMS	DETAILS
Type of Study	Cross sectional Study
Duration of Study	Pre-remedial phase : January-March 2023 Remedial phase : October-December 2023 Post-remedial phase: April-Jun 2023 (Cycle 1) : June- September 2023 (Cycle 2)
Sample Population	All patients who required intraoral radiographic images in all 5 primary dental clinics in Gombak district
Sample Method	Purposive sampling technique
Sampling Tools	Master Sheet, Dummy table of Data Collection, Self administered Questionnaire, Procedure execution checklist
Inclusion Criteria	All patients in all 5 primary dental clinics in Gombak district who requires IOPA indicated with dental pain, dental infections, endodontic procedure and implant candidates
Exclusion Criteria	Patients who refused to repeat IOPA/X-Ray.

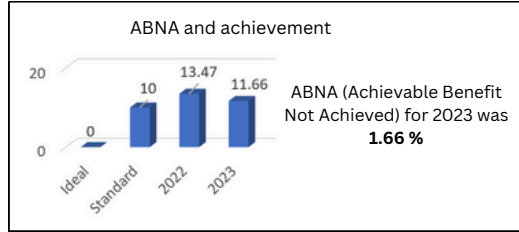
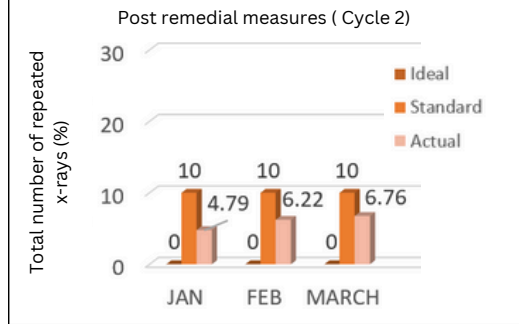
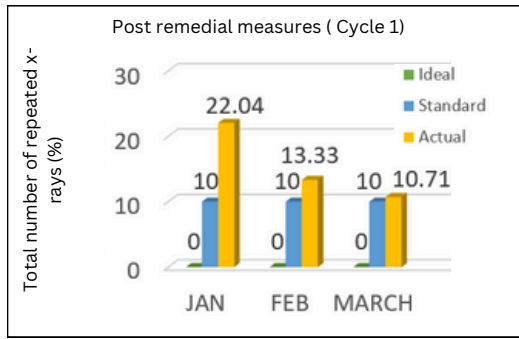
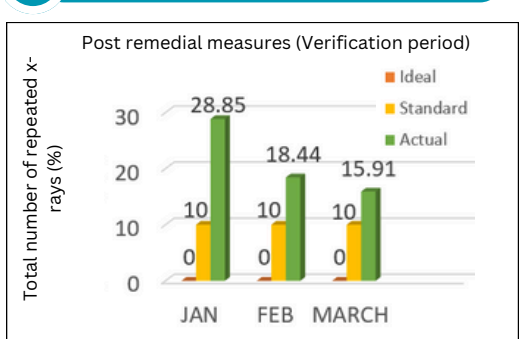
4 Strategy for change

4.1 Shortfall in Quality (SIQ), Factors, Strategies



4.2 Remedial actions implemented

5 Effect of change



6 Conclusion

- The number of repeated X-rays in primary dental clinics in Gombak district has reduced to 11.66 (post-remedial 2) from 13.47.
- The major contributing factors identified were improper processing film, inadequate procedure execution, lack of training and miscommunication in receiving instruction by patient

7 The Next Step

The model of good care checklists will continue to be implemented to all primary dental clinics in Gombak as it contributed to the reduction of the unnecessary repeated radiograph.

References

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