

**REDUCING THE PERCENTAGE OF PATIENTS DEVELOPING
ACTIVE CARIES WITHIN SIX MONTHS
AFTER COMPREHENSIVE DENTAL TREATMENT UNDER
GENERAL ANESTHESIA IN THE
DEPARTMENT OF PEDIATRIC DENTISTRY,
SLIM RIVER HOSPITAL**

Konvensyen QA 2024

GROUP MEMBERS

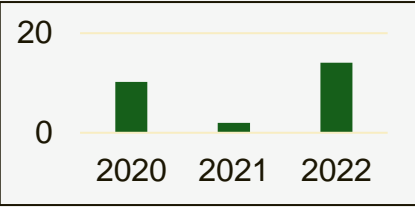
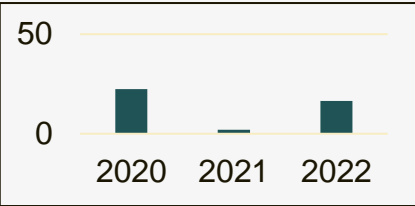
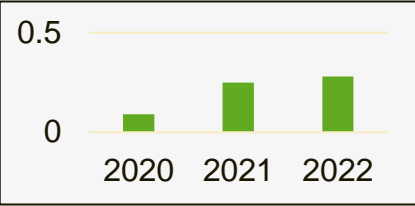
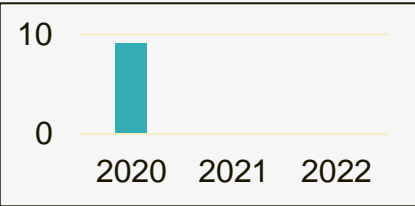
Dr Fayyadhah binti Mohd Azmi (Pediatric Dental Specialist)

Dr Liyana Aqilah binti Ramli (Dental Officer)

Dr Zulaikha binti Zainal Abidin (Dental Officer)

PPP Nurul Nadia (Dental Surgery Assistant)

PROBLEM IDENTIFICATION

PROBLEM LIST	DATA													
<p>Percentage of patients developing active caries after comprehensive dental treatment under general anesthesia within six months</p>	<p>2020 : 5/49 (10.2%) 2021 : 2/98 (2.0%) 2022 : 10/71 (14.1%) Standard : ≤10%</p>	 <table border="1"> <caption>Active Caries Data</caption> <thead> <tr> <th>Year</th> <th>Count</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>2020</td> <td>5</td> <td>10.2%</td> </tr> <tr> <td>2021</td> <td>2</td> <td>2.0%</td> </tr> <tr> <td>2022</td> <td>10</td> <td>14.1%</td> </tr> </tbody> </table>	Year	Count	Percentage	2020	5	10.2%	2021	2	2.0%	2022	10	14.1%
Year	Count	Percentage												
2020	5	10.2%												
2021	2	2.0%												
2022	10	14.1%												
<p>Percentage of post-op defaulters following comprehensive dental treatment under general anesthesia within six months</p>	<p>2020 : 11/49 (22.4%) 2021 : 2/98 (2.0%) 2022 : 14/85 (16.5%) Standard : ≤20%</p>	 <table border="1"> <caption>Post-op Defaulters Data</caption> <thead> <tr> <th>Year</th> <th>Count</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>2020</td> <td>11</td> <td>22.4%</td> </tr> <tr> <td>2021</td> <td>2</td> <td>2.0%</td> </tr> <tr> <td>2022</td> <td>14</td> <td>16.5%</td> </tr> </tbody> </table>	Year	Count	Percentage	2020	11	22.4%	2021	2	2.0%	2022	14	16.5%
Year	Count	Percentage												
2020	11	22.4%												
2021	2	2.0%												
2022	14	16.5%												
<p>Oral soft tissue injuries during dental procedure in children</p>	<p>2020 : 1/1067 (0.09%) 2021 : 1/1696 (0.05%) 2022 : 5/1765 (0.28%) Standard : ≤10%</p>	 <table border="1"> <caption>Oral Soft Tissue Injuries Data</caption> <thead> <tr> <th>Year</th> <th>Count</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>2020</td> <td>1</td> <td>0.09%</td> </tr> <tr> <td>2021</td> <td>1</td> <td>0.05%</td> </tr> <tr> <td>2022</td> <td>5</td> <td>0.28%</td> </tr> </tbody> </table>	Year	Count	Percentage	2020	1	0.09%	2021	1	0.05%	2022	5	0.28%
Year	Count	Percentage												
2020	1	0.09%												
2021	1	0.05%												
2022	5	0.28%												
<p>Percentages of patients on general anesthesia waiting list for elective surgery more than three months</p>	<p>2020 : 1/11 (9.09%) 2021 : 0/4 (0%) 2022 : 0/2 (0%) Standard : ≤30%</p>	 <table border="1"> <caption>Patients on Anesthesia Waiting List Data</caption> <thead> <tr> <th>Year</th> <th>Count</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>2020</td> <td>1</td> <td>9.09%</td> </tr> <tr> <td>2021</td> <td>0</td> <td>0%</td> </tr> <tr> <td>2022</td> <td>0</td> <td>0%</td> </tr> </tbody> </table>	Year	Count	Percentage	2020	1	9.09%	2021	0	0%	2022	0	0%
Year	Count	Percentage												
2020	1	9.09%												
2021	0	0%												
2022	0	0%												

PROBLEM PRIORITIZATION

Problem List	S	M	A	R	T	Score
Percentage of patients developing active caries after comprehensive dental treatment under general anesthesia within six months	12	11	10	10	11	54
Percentage of post-op defaulters following comprehensive dental treatment under general anesthesia within six months	12	11	10	9	9	51
Oral soft tissue injury during dental procedure in children	10	8	9	10	9	46
Percentage of patients on general anesthesia waiting list for elective surgery more than three months	4	4	4	4	4	20

Marks awarded	1	2	3
Rating	Low	Average	High

4 group members

REASONS FOR SELECTION

S SERIOUSNESS

Caries relapse after CDT under GA means patient is subjected for another repeat treatment under GA which is not only costly, but also associated with greater morbidity and mortality rate than provision of dental care under local anesthesia (LA) or minimal sedation.

M MEASURABLE

Data can be collected through patient's clinical records and clinical audit forms

A APPROPRIATE

Our department's primary focus is managing dental caries, and we aim to investigate and improve the current upward trend in cases

R REMEDIABLE

The majority of factors contributing to this trend are manageable within our capabilities and can be enhanced through ongoing efforts.

T TIMELINESS

Can be completed within stipulated time-frame (1 year)

LITERATURE REVIEW

RATE OF RECURRENT CARIES

8.5% and 18.8% of the children developed recurrent caries within 6 and 12 months, respectively in a study conducted in China in 2017 ⁽³⁾

EFFECT OF CARIES RELAPSE

More severe dental and systemic implications and increase in fear and dental anxiety among patients⁽⁶⁾⁽⁷⁾

FACTORS OF RECURRENT CARIES

Failure to attend recall appointments, improper dietary habit and oral habits, patient's health status, inadequate preventive measures and type of restoration used. ⁽⁴⁾⁽⁵⁾

INTERVENTION

A key strategy involves rigorous follow-up and adherence to preventive protocols ⁽⁸⁾

BACKGROUND OF STUDY



Our core business includes management of dental treatment, comprehensive dental care, CDT done, special dental anxiety.



we have
dentist
alone for
where



dentistry Hospital Slim River or pediatric dental treatment in Batang Padang, Muallim district, Perak (Hulu Selangor)

specialty treatment for patients aged 16 years old and below.

TERMS AND DEFINITION



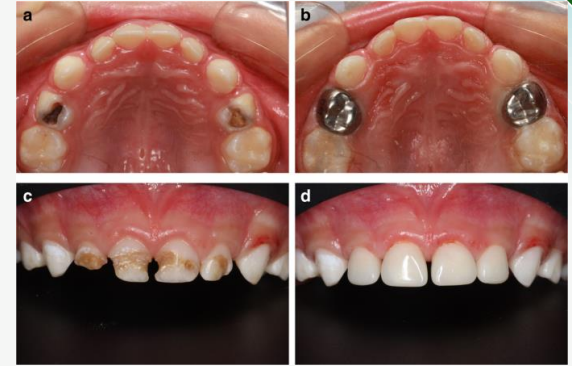
Dental caries

A prevalent chronic infectious disease resulting from tooth-adherent cariogenic bacteria that metabolize sugars to produce acid, which, over time, demineralizes tooth structure. ⁽⁹⁾



Secondary caries

Caries that occurs adjacent to a restoration



Comprehensive Dental Treatment

A dental rehabilitation under general anesthesia which includes a wide range of procedures such as diagnostic exams, restorative treatments (e.g., fillings, crowns), extractions, and preventive measures (e.g., sealants, fluoride treatments) carried out in a single setting. This treatment options is usually offered to medically compromised patients and patients with severe dental anxiety.

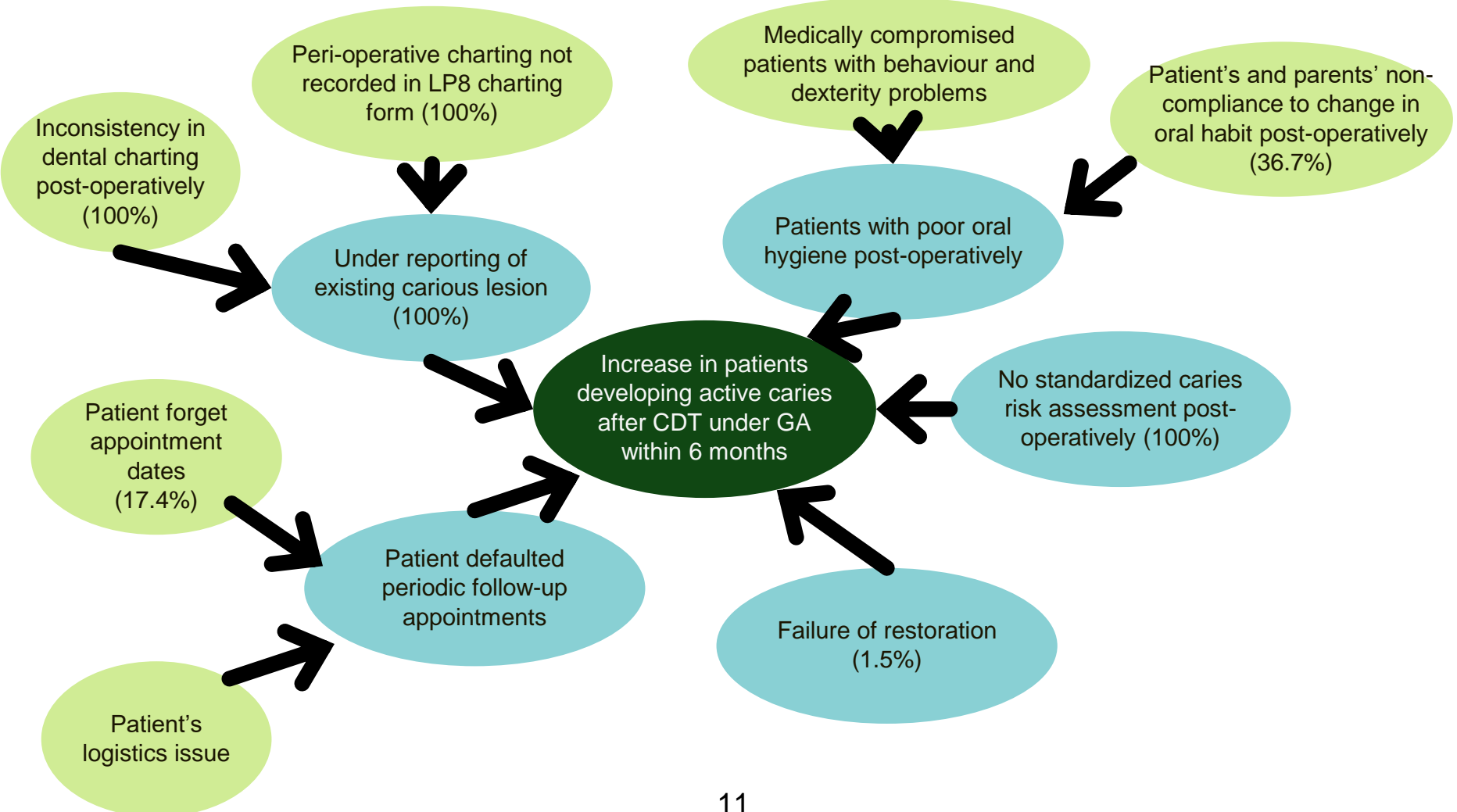
PROBLEM STATEMENT

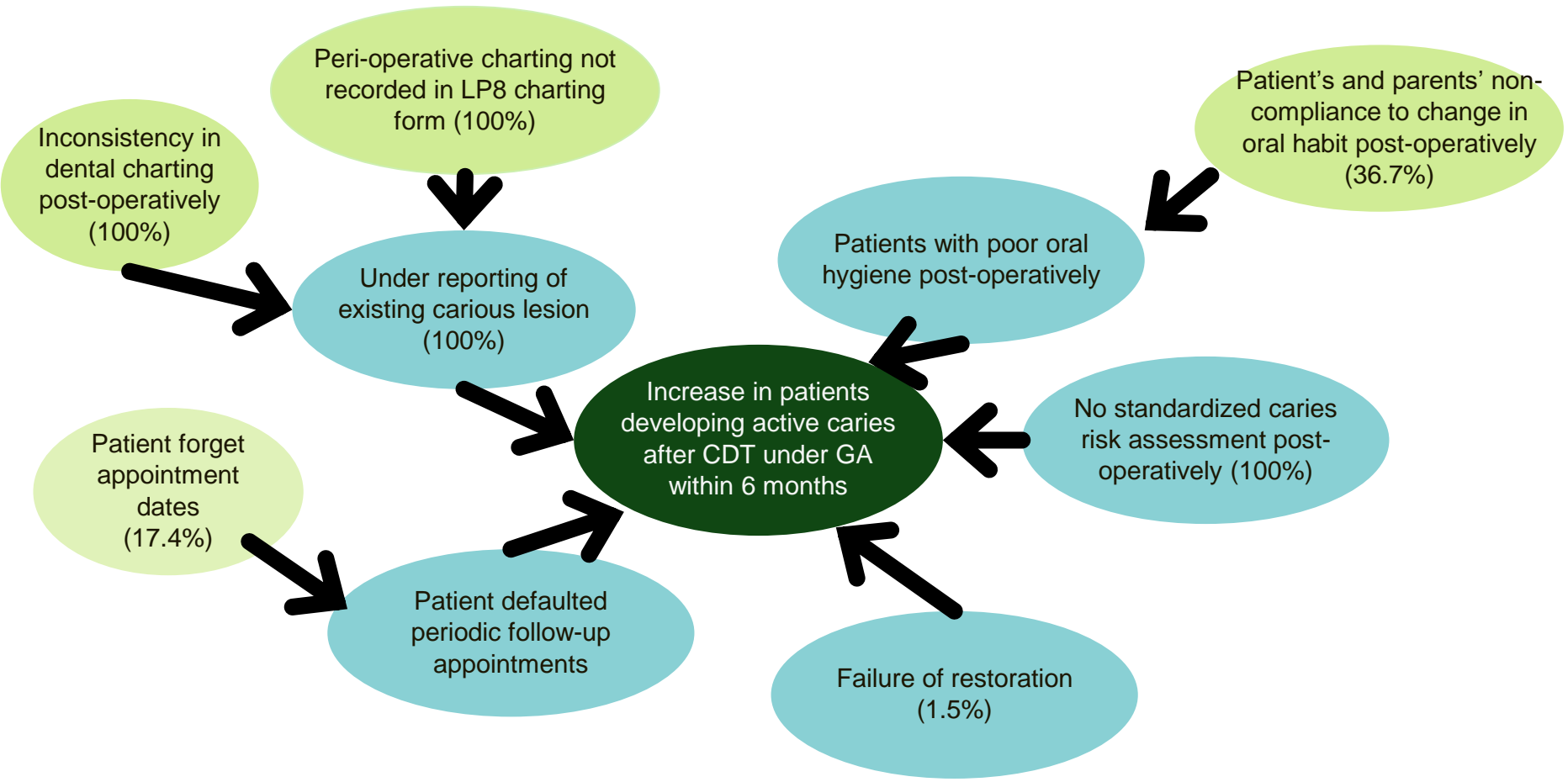
Data collected from July 2021 to June 2022 at the Department of Pediatric Dentistry, Hospital Slim River indicates that **14.1%** of patients developed active caries within six months after undergoing Comprehensive Dental Treatment (CDT) under general anesthesia(GA).

Recurrent caries following CDT under GA increases the chance of requiring further treatment under GA, which is not only more expensive but also linked to a greater risk of mortality and morbidity than dental treatments performed with local anesthesia (LA).

This study aims to reduce this percentage to benefit the patients and also to make sure that the KPI of the department could be achieved.

CAUSE-EFFECT ANALYSIS





GENERAL OBJECTIVE

To reduce the percentage of patients developing active caries after Comprehensive Dental Treatment (CDT) under general anesthesia within 6 months in the Department of Pediatric Dentistry, Slim River Hospital


SPECIFIC OBJECTIVES

To identify the prevalence of patients developing active caries after CDT under GA

To identify possible causes of patients developing active caries after CDT under GA

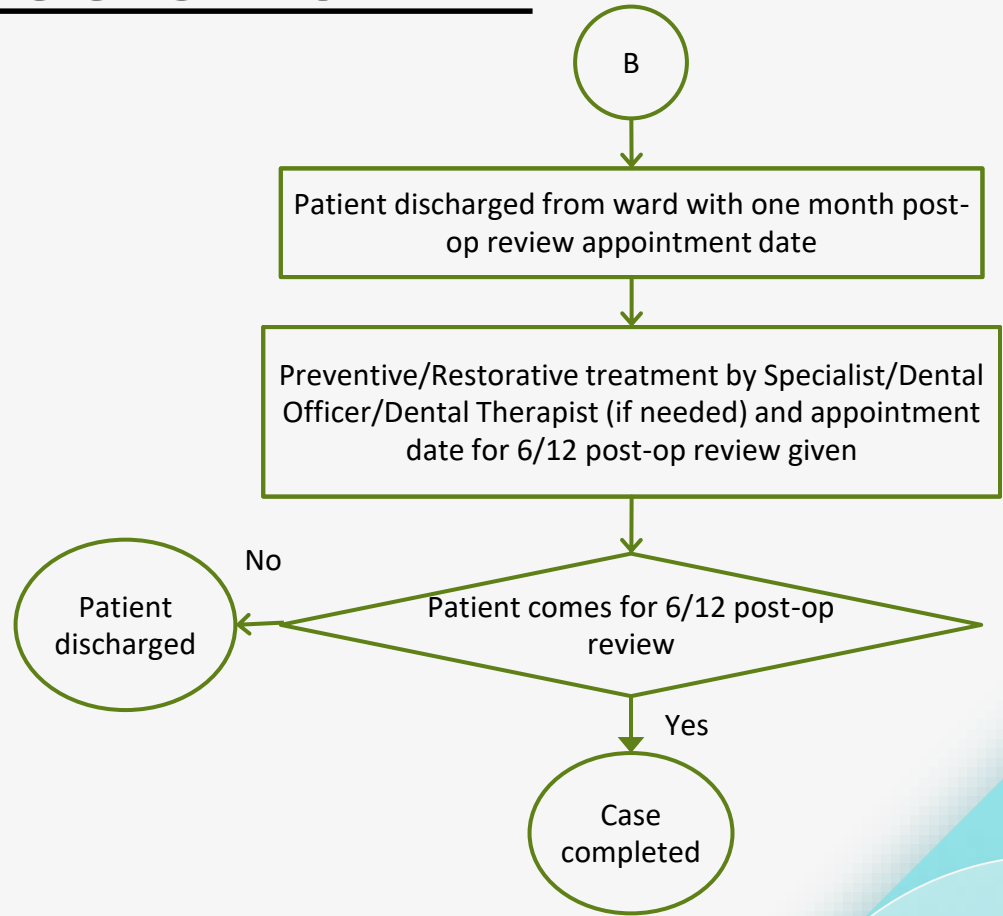
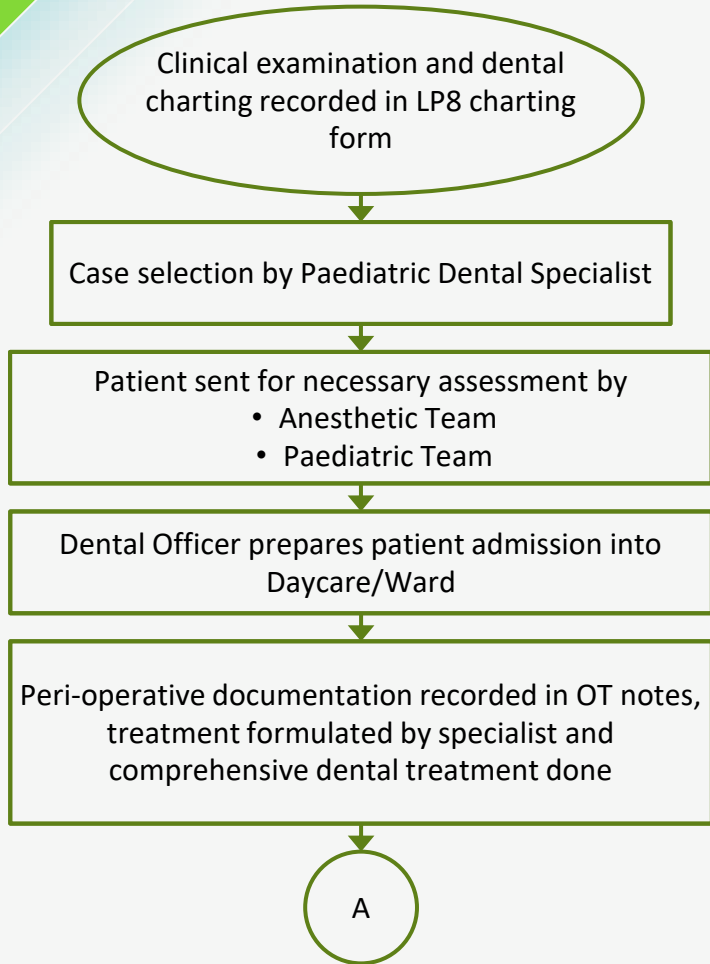
To formulate and implement measures to decrease the risk of patients developing active caries after CDT under GA within 6 months

To re-evaluate the percentage of patients developing new caries after CDT under GA after remedial action



KEY MEASURES FOR IMPROVEMENT

PROCESS OF CARE




MODEL OF GOOD CARE

PROCESS	CRITERIA	STANDARD	PRE-INTERVENTION
Clinical examination and dental charting recorded to screen patients (before admission)	• A complete history is taken for all new patients and for review patients, medical history is updated	100%	100%
	• Dental charting is completed in patient's card and case presented to specialist	100%	100%
	• Relevant investigations ordered	100%	100%
Peri-operative documentation recorded in OT notes, treatment plan formulated by specialist and comprehensive dental treatment done	• Thorough examinations done by dental specialist	100%	100%
	• Findings and charting are recorded	100%	80%
	• Restorations, extractions and preventive measures done under GA	100%	100%

MODEL OF GOOD CARE

PROCESS	CRITERIA	STANDARD	PRE-INTERVENTION
Patient discharged with one month post-operation review date	• Post-operative instructions and oral hygiene instructions given	100%	100%
	• Patient's details added to data collection form	100%	100%
Preventive/Restorative treatment by Specialist/Dental Officer/Dental Therapist (if needed) and appointment date for 6/12 post-op review given	• Utilization of fluoride varnish during post operation review visits (1/12, 3/12, 6/12)	100%	100%
	• Teeth with failed restorations are restored in the same visit to reduce the risk of development of new caries	100%	100%
	• Appointment date for six months post of review given	100%	100%
Patient came for six months post-op review	• Re-charting of current dentition status and validate with peri-operative charting	100%	100%



PROCESS OF GATHERING INFORMATION

METHODOLOGY

Type of study	Prospective cohort study
Study population	Patients who underwent CDT under GA (<12 years old)
Sampling technique	Universal sampling
Study period	Verification : July 2021-Jun 2022 Pre-Intervention : July 2022 – Dec 2022 Post intervention Cycle 1 : Jan 2023 – Jun 2023 Cycle 2 : July 2023 – Dec 2023 Cycle 3 : Jan 2024- Jun 2024
Study tools	Patient's operation notes Patient's LP8 KPI data collection form
Sample size	Pre-Intervention : 26 patients Post intervention Cycle 1 : 26 patients Cycle 2 : 27 patients Cycle 3 : 20 patients

INDICATOR AND STANDARD

INDICATOR	STANDARD
Percentage of patients developing active caries post CDT under GA within 6 months	≤10%

Formula :

$$\frac{\text{Total number of patients developing active caries post CDT under GA within 6 months}}{\text{Total number of patients post CDT under GA within 6 months follow up}} \times 100$$

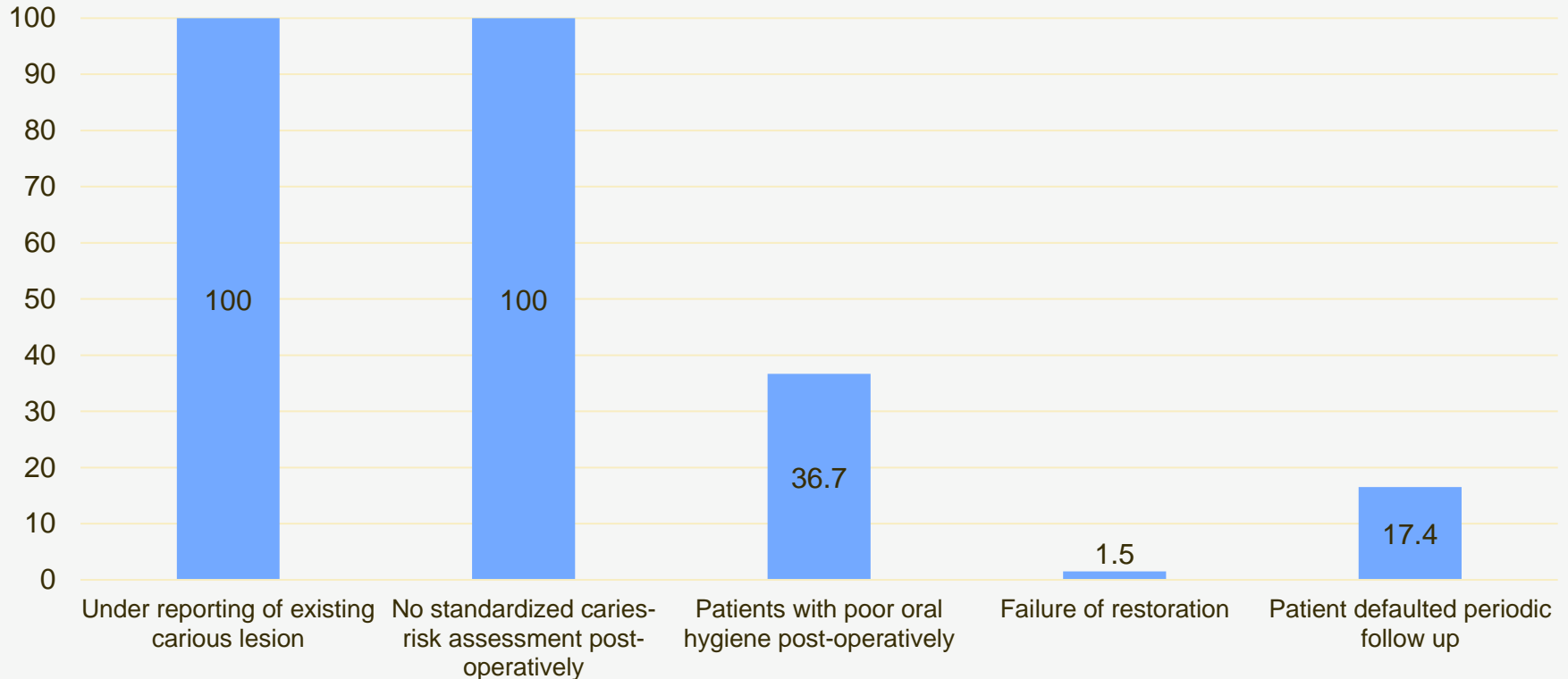
Standards obtained from the technical specification for KPI of Paediatric Dentistry 2022



ANALYSIS & INTERPRETATION

PRE-INTERVENTION RESULT

Factors increasing the percentage of patients developing active caries post CDT under GA within 6 months





STRATEGIES FOR CHANGE

PROBLEMS	Remedial Measures
Under reporting of existing carious lesion	Peri-operative charting recorded in OT notes and LP8 charting form as a baseline assessment during post-operative reviews
No standardized caries risk assessment post-operatively	CAMBRA risk assessment during post-operative visits
Patients with poor oral hygiene post-operatively	<ul style="list-style-type: none"> • LMG for patients with high/moderate caries risk • Educational pamphlet given to parents
Failure of restoration	<ul style="list-style-type: none"> • Utilization of stainless steel crown peri-operatively • SDF to arrest caries on teeth with failed restoration post-operatively
Patient defaulted periodic follow up	<ul style="list-style-type: none"> • Stickers on patient's LP8 • Reminder calls to patients prior to appointments

IMPROVING PERI-OPERATIVE CHARTING

Peri-operative charting are recorded both in the operation notes and transferred to LP8 on the same day as a baseline

Re-charting of patient's current dentition status during subsequent post-operative visits in the LP8 charting form

The image displays two dental forms side-by-side. The left form is the LP8 (Peri-operative charting) form, which includes sections for patient information, examination findings (e.g., plaque, gingivitis), and dental charts. The right form is the OT notes (Operation notes) form, which includes sections for operation, pre-operative diagnosis, post-operative diagnosis, perioperative procedures, and operative findings. Both forms are highlighted with a red border.

LP8

OT notes

STANDARDIZED CHECKLIST FOR DENTAL OFFICERS

Borang 1/QA2022

JABATAN PERGIGIAN PEDIATRIK, HOSPITAL SLIM RIVER

CHECKLIST FOR POST-CDT PATIENTS

Record in patient's card on every review appointments :

	YES/NO
Dietary counseling to reduce frequency and amount of fermentable carbohydrates. Record number and type of daily snacks, drinks and juices used	
Oral hygiene and fluoride toothpaste use. At each visit, note frequency and amount used	
Record all recommended therapy such as fluoride toothpaste, fluoride varnish, and chlorhexidine usage by patient	
Record medications at each visit and check for changes	
Child/adult has developmental problems or special care needs	
Inadequate saliva flow and related medications, medical conditions or illnesses	

UTILIZATION OF CAMBRA RISK ASSESSMENT DURING POST-OPERATIVE VISITS

CAMBRA Caries Risk Assessment form for ages 0-6 years

Patient Name :	Column 1	Column 2	Column 3
Caries risk assessment component *(Check yes only in the appropriate shaded column)	Score : -1	Score : +2	Score : +3
Biological or environmental risk factors - Question items		Check if Yes*	
Frequent snacking (more than 3 times daily)			
Uses bottle/non-spill cup containing other than water			
Parent/primary caregiver or sibling has current decay or a recent history of decay (see high risk description below)			
Family has low socioeconomic &/or low health literacy status			
Medications that induce hyposalivation			
Protective factors - Question items	Check if Yes*		
Lives in a fluoridated drinking water area			
Drinks fluoridated water			
Uses fluoride-containing toothpaste at least two times daily (1,000ppm)			
- Smear for ages 0-2 years			
- Pea-size for ages 3-6 years			
Has had fluoride varnish applied in the last 6 months			
Biological risk factors - Clinical examination		Check if Yes*	
Heavy plaque on the teeth			Check if Yes*
Disease Indicators - Clinical examination			
Evident tooth decay or white spots			
Recent restorations in last 2 years (new patient) or the last year (patient of record)			
Column total score (2+3-1)	Column 1	Column 2	Column 3
Total :	Total :	Total :	Total :
Final Overall Caries Risk Assessment Category (check) determined as per guidelines below			
LOW <input type="checkbox"/> (-4 to -1)	MODERATE <input type="checkbox"/> (0 to +3)	HIGH <input type="checkbox"/> (+4 to +13)	VERY HIGH <input type="checkbox"/> (+14 to +18)

CAMBRA Caries Risk Assessment form for ages 6 year through adult

Patient Name :	Column 1	Column 2	Column 3
Caries risk assessment component *(Check yes only in the appropriate shaded column)	Score : -1	Score : +2	Score : +3
Protective factors - Question items		Check if Yes*	
Fluoridated water			
F toothpaste at least once a day			
F toothpaste 2X daily or more			
5,000 ppm F toothpaste			
F varnish last 6 months			
0.05% sodium fluoride mouthrinse daily			
0.12% chlorhexidine gluconate mouthrinse daily 7 days monthly			
Normal salivary function			Check if Yes*
Biological or environmental risk factors - Question items			
Frequent snacking (>3 times daily)			
Hyposalivatory medications			
Recreational drug use			
Biological risk factors - Clinical examination			
Heavy plaque on the teeth			
Reduced salivary function (measured low flow rate)**			
Deep pits and fissures			
Exposed tooth roots			
Orthodontic appliances			
Disease Indicators - Clinical examination			Check if Yes*
New cavities or lesion(s) into dentin (radiographically)			
New white spot lesions on smooth surfaces			
New non-cavitated lesion(s) in enamel (radiographically)			
Existing restorations in last 3 years (new patient) or the last year (patient of record)			
Column total score (2+3-1)	Column 1	Column 2	Column 3
Total :	Total :	Total :	Total :
Yes in column 3 likely indicates high or extreme risk			
**Hyposalivation plus high risk factors = extreme risk			
Final Overall Caries Risk Assessment Category (check) determined as per guidelines below			
LOW <input type="checkbox"/> (-8 to -2)	MODERATE <input type="checkbox"/> (-1 to +2)	HIGH <input type="checkbox"/> (+3 to +7)	EXTREME <input type="checkbox"/> (+18 to +30)

No standardized caries risk assessment post-operatively

Risk category	Diagnostic		Preventive interventions			Restoration	
	Periodic oral exams	Radiographs	Fluoride	Diet counseling	Self-management goals	Sealants	Existing lesions
CARE PATHWAYS FOR CARIES MANAGEMENT BASED ON RISK FOR CHILDREN 0-6 YEARS OF AGE							
Low	6–12 mos	12–24 mos	Brush twice daily with F toothpaste [Ⓜ]	No	No	No	
Moderate	6 mos	6–12 mos	Brush twice daily with F toothpaste [Ⓜ] optimize F intake [Ⓒ] FV every 6 mos	Yes	Yes	On enamel defects and pits & fissures at-risk	Active surveillance for developing lesions
High	3 mos	6 mos	Brush twice daily with F toothpaste [Ⓜ] optimize F intake [Ⓒ] FV every 3 mos	Yes	Yes	On enamel defects and pits & fissures at-risk	Remineralize enamel-only lesions with FV; restoration of cavitated lesions, or non-surgical caries management with ITR or SDF as appropriate.
Very high: with extensive existing disease	Monthly	6 mos	Brush three times daily with F toothpaste [Ⓜ] optimize F intake [Ⓒ] FV every 1–3 mos Consider additional therapies for caries control*	Yes	Yes	All pits and fissures	Consider caries control prior to surgical tx. Remineralize enamel-only lesions with FV; restoration of cavitated lesions, or non-surgical caries management with ITR or SDF as appropriate

CDE GIVEN TO THE DEPARTMENTAL STAFF ON CAMBRA



REINFORCEMENT OF ORAL HYGIENE INSTRUCTIONS



Hands-on Latihan Memberus Gigi (LMG) conducted by Dental Therapist for moderate/high caries risk patients

Fones Technique

For pre-schoolers
up to 9 years of
age

Using a circular
motion

Modified Bass

For children 10
years and above

The bristles are
used in 45 degree
in the long axis of
the mouth

EDUCATIONAL PAMPHLET GIVEN TO PARENTS

10 TIPS MEMBERUS GIGI UNTUK KANAK-KANAK

Kita memberus gigi untuk mengurangkan risiko mendapat karies. Karies menyebabkan kesakitan gigi dan adalah mahal untuk dirawat. Elemen yang paling penting dalam memberus gigi ialah fluorida yang terkandung di dalam ubat gigi. Lebih tinggi kandungan fluorida lebih baik kesan pencegahan karies.

1

MELENTUR BULUH BIARLAH DARI REBUNGNYA

Amalan memberus gigi bermula sebaik sahaja gigi susu pertama mula tumbuh. Jangan tunggu sehingga ada lebih banyak gigi. Bimbang sudah terlambat.

2

BERUS GIGI DUA KALI SEHARI

Berus gigi sekali sebelum tidur dan sekali lagi pada waktu lain setiap hari. Ada di antara kita yang hanya memberus gigi di dalam bilik mandi. Sebenarnya, ia boleh dilakukan di mana sahaja termasuk di bilik tidur.

3

BANTU DAN PANTAU

Kanak-kanak perlu dibantu atau dipantau oleh orang dewasa semasa memberus gigi sehingga usia mereka 7 tahun. Sebelum mencapai umur ini, kemahiran tangan mereka belum cukup untuk memberus gigi dengan baik.

4

UBAT GIGI YANG MENGANDEKUNG SEKURANG-KURANGNYA 1,000 PART PER MILLION (PPM) FLUORIDE

Untuk kanak-kanak di bawah usia 3 tahun. Gunakan tidak lebih dari calitan ubat gigi (lapisan nipis ubat gigi meliputi tiga suku permukaan berus gigi) dan jangan benarkan mereka makan atau menjilat ubat gigi. Gunakan jari untuk menekan ubat gigi ke bawah daripada paras hujung berus gigi.

5

UBAT GIGI SAIZ KACANG

Kanak-kanak di antara usia 3 hingga 6 tahun harus menggunakan ubat gigi tidak lebih dari saiz sebiji kacang. Baca label kotak ubat gigi. Terdapat maklumat kandungan fluorida dan ilustrasi saiz kacang untuk panduan jumlah ubat gigi yang betul.



10 TIPS MEMBERUS GIGI UNTUK KANAK-KANAK

6

UBAT GIGI KELUARGA (1,350-1,500 PPM FLUORIDE)

Boleh digunakan bagi kawalan karies maksima untuk semua kanak-kanak kecuali mereka yang sukar dikawal daripada menelan ubat gigi. Kanak-kanak di bawah usia 8 tahun berisiko mendapat fluorosis gigi akibat pengambilan fluorida berlebihan. Fluorosis adalah masalah kecantikan gigi.

8

ELAK BERKUMUR

Berkumur dengan air atau ubat kumur mulut (termasuk kumur fluorida) seurus selepas memberus gigi akan mengurangkan kepekatan sisa fluorida, lantas mengurangkan kesan pencegahan karies.

9

BERUS GIGI BERKEPALA KECIL DENGAN TEKSTUR BERUS GIGI LEMBUT

Kepala berus gigi bersaiz kecil membolehkan capaian ke gigi paling belakang di mana ruangan adalah sempit.

10

BELAJAR CARA PEMBERUSAN GIGI

Untuk pembersihan plak gigi maksima, beri tumpuan pada keperluan membersihkan keseluruhan permukaan gigi secara sistematik. Anda boleh belajar kaedah ini semasa temujanji doktor gigi anda yang akan datang.

Anda digalakkan membawa anak anda untuk pemeriksaan gigi pada hari jadi yang pertama dan pada setiap hari jadi yang berikutnya (lebih-lebih lagi selepas makan banyak kek hari jadi).

SELECTION OF RESTORATIVE MATERIALS

Stainless steel crown on primary first and second molars instead of composites and sealants

Before:



After:

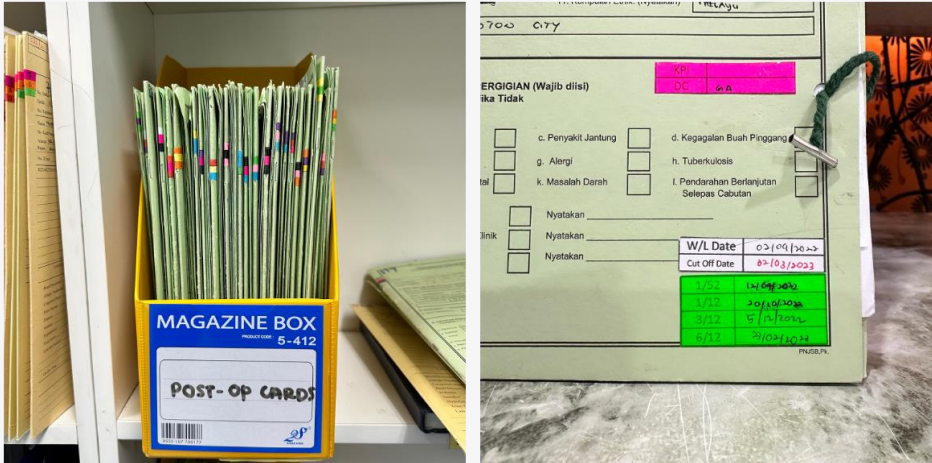


BEFORE SDF TREATMENT

AFTER SDF TREATMENT

Application of SDF peri-operatively and on teeth with a failed restoration post-operatively to arrest the progression of caries

ESTABLISHING A RECALL SYSTEM

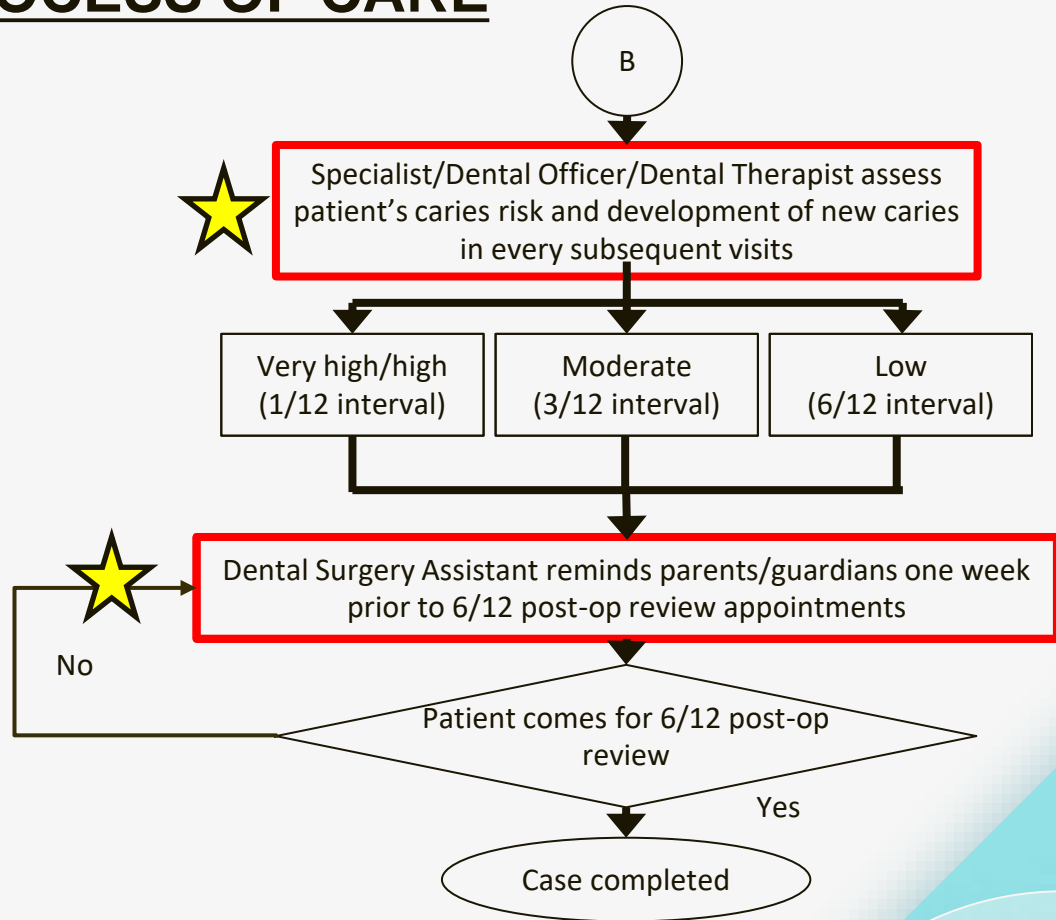
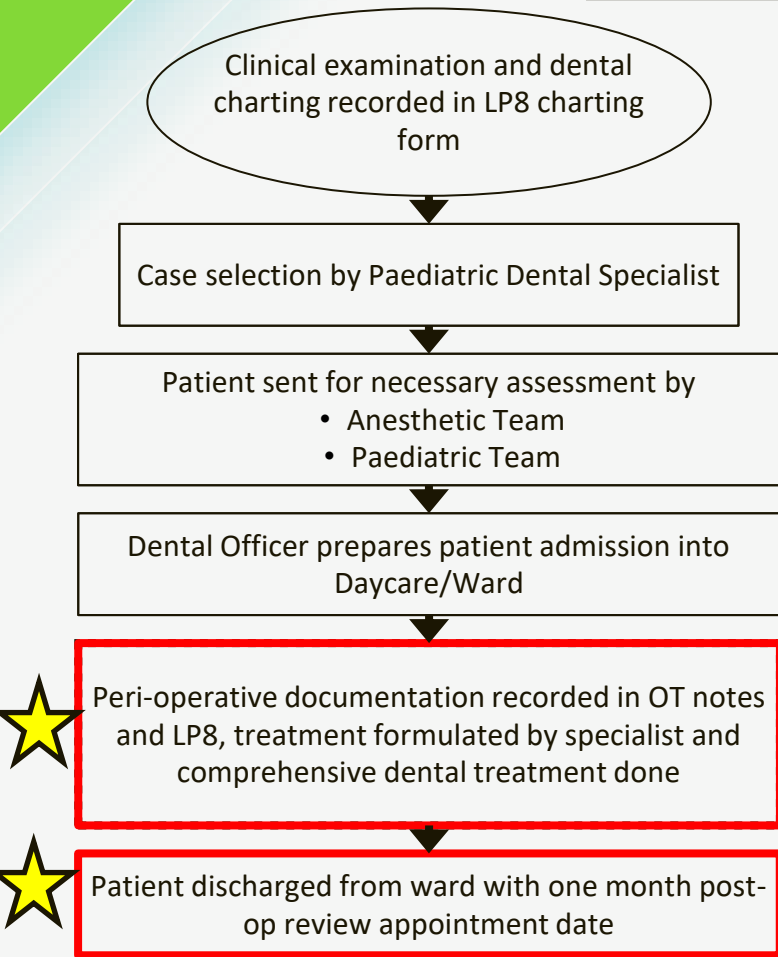


- Sticker with post-op review dates placed on CDT patient's card
- Post-op cards are filed separately

NO	MAKLUMAT PESAKIT					RAWATAN UNDER GA				TARIKH CUT OFF DATE	TX DONE UNDER DR	REVIEW DATE			ACCEPT		
	Nama pesakit	PN IK	Jantina	Bangsa	Agama	FILLING	SEALANT	FN	LN			Rev 1	Rev 2	Rev 3		Rev 4	
010112	1	Muhammad Nizam	075	M	M					2	7	20/08/22	08/09/22	15/09/22	22/09/22	29/09/22	✓
010112	2	Hair Fawaz	065	M	M					4		16/08/22	22/08/22	29/08/22	05/09/22	12/09/22	✓
010112	3	Wahid Nur	139	M	M					2		16/08/22	22/08/22	29/08/22	05/09/22	12/09/22	✓
010112	4	Muhammad Nizam	229	M	M					2		16/08/22	22/08/22	29/08/22	05/09/22	12/09/22	✓
010112	5	Muhammad Nizam	130	M	M					3	2	16/08/22	22/08/22	29/08/22	05/09/22	12/09/22	✓
010112	6	Muhammad Nizam	623	M	M												
010112	7									5	76						

Reminder calls will be given to patients prior to their six months post-operation review appointment one week prior to their appointment date

NEW PROCESS OF CARE



NEW MODEL OF GOOD CARE

PROCESS	CRITERIA	STANDARD	PRE-INTERVENTION	CYCLE 1	CYCLE 2	CYCLE 3
Clinical examination and dental charting recorded to screen patients (before admission)	• A complete history is taken for all new patients and for review patients the medical history is updated	100%	100%	100%	100%	100%
	• Dental charting is completed and case presented to specialist	100%	100%	100%	100%	100%
	• Relevant investigations ordered	100%	100%	100%	100%	100%
Peri-operative documentation recorded in OT notes and LP8, treatment plan formulated by specialist and comprehensive dental treatment done	• Thorough examinations done by dental specialist	100%	100%	100%	100%	100%
	• Findings are recorded in operation notes	100%	100%	100%	100%	100%
	• Findings are recorded in LP8 charting form	100%	0%	93.5%	100%	100%
	• Restorations, extractions and preventive measures done under GA incorporating SDF and SSC placement on posterior teeth	100%	100%	100%	100%	100%

NEW MODEL OF GOOD CARE

PROCESS	CRITERIA	STANDARD	PRE-INTERVENTION	CYCLE 1	CYCLE 2	CYCLE 3
Patient discharged with one month post-operation review date	• Post-operative instructions and oral hygiene instructions given	100%	100%	100%	100%	100%
	• Patient's details added to data collection form	100%	100%	100%	100%	100%
	• Sticker with post-op review dates placed on CDT patient's card	100%	0%	100%	100%	100%
Specialist/Dental Officer/Dental Therapist assess patient's caries risk and development of new caries in every subsequent visits (1/12, 3/12, 6/12)	• Utilization of CAMBRA risk assessment every 1/12, 3/12, 6/12 review visits	100%	0%	100%	100%	100%
	• Re-charting of current dentition status in LP8 and validate with peri-operative charting in LP8	100%	0%	100%	100%	100%
	• Reinforcement of oral hygiene instructions every visit	100%	100%	100%	100%	100%
	• Hands-on Latihan Memberus Gigi conducted by Dental Therapist for moderate and high risk patients	100%	0%	100%	100%	100%
	• Application of SDF on teeth with failed restoration and new caries to arrest caries progression	100%	0%	100%	100%	0%
	• Preventive/Restorative treatment by Specialist/Dental Officer/Dental Therapist (if needed) and appointment date for 6/12 post-op review given	100%	100%	100%	100%	100%

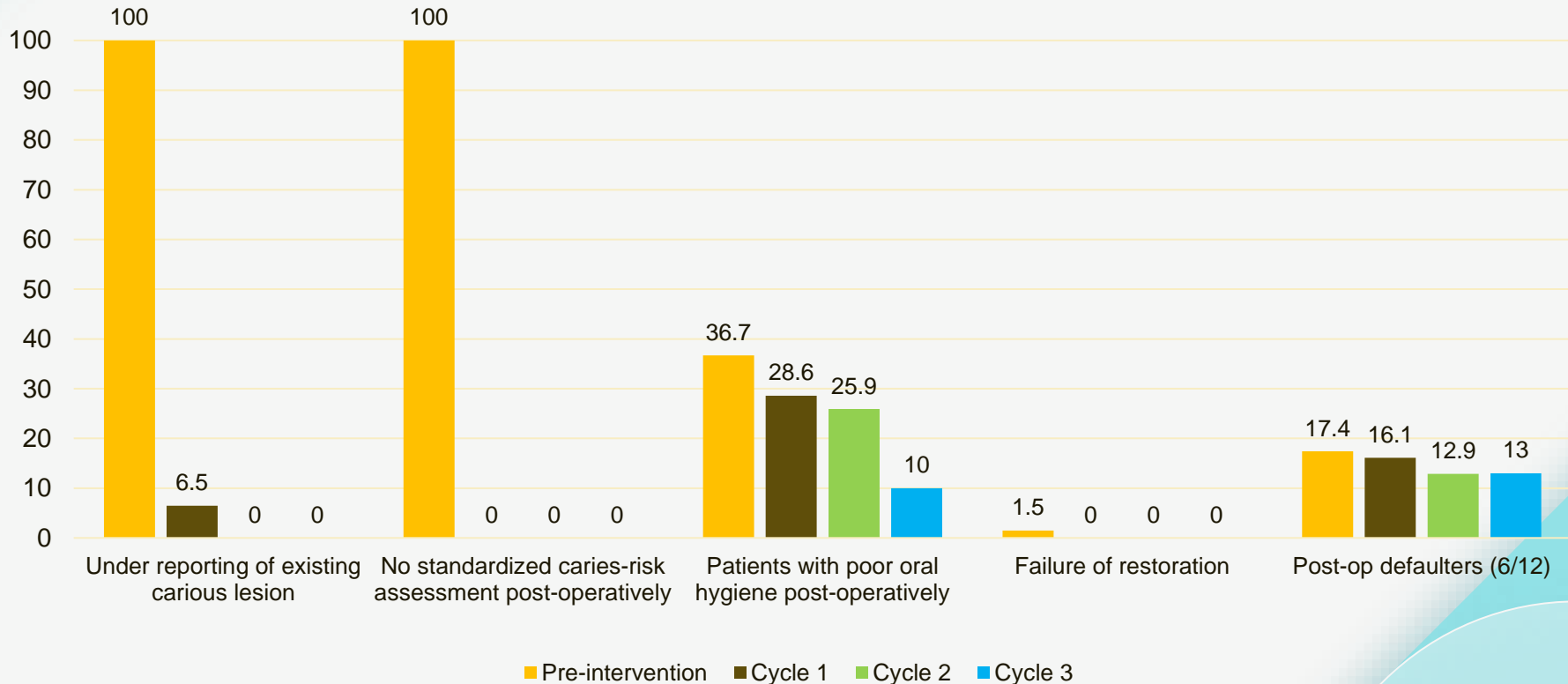
NEW MODEL OF GOOD CARE

PROCESS	CRITERIA	STANDARD	PRE-INTERVENTION	CYCLE 1	CYCLE 2	CYCLE 3
Dental Surgery Assistant reminds parents/guardians prior to 6/12 post-operation review appointments	<ul style="list-style-type: none"> Patient's card identified and patient is reminded via phone call one week prior to appointment date 	100%	0%	100%	100%	100%
	<ul style="list-style-type: none"> Patient defaulted appointment after 6 months + 2 weeks are discharged from review cases 	≤20%	17.4%	16.1%	12.9%	13%
Patient came for six months post-op review	<ul style="list-style-type: none"> Re-charting of current dentition status and validate with peri-operative charting in OT notes 	100%	100%	100%	100%	100%

EFFECT OF CHANGE

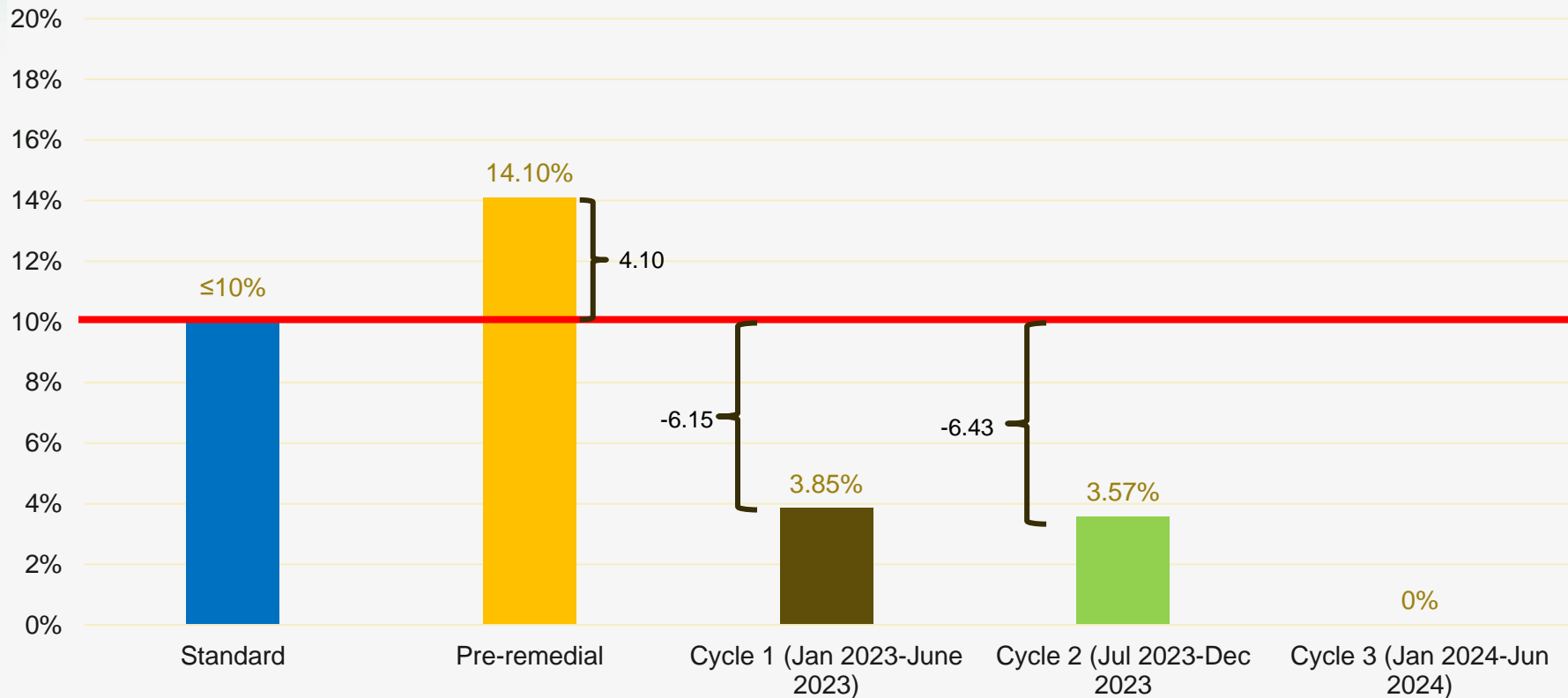
EFFECT OF CHANGE

Factors increasing the percentage of patients developing active caries after CDT under GA within 6 months

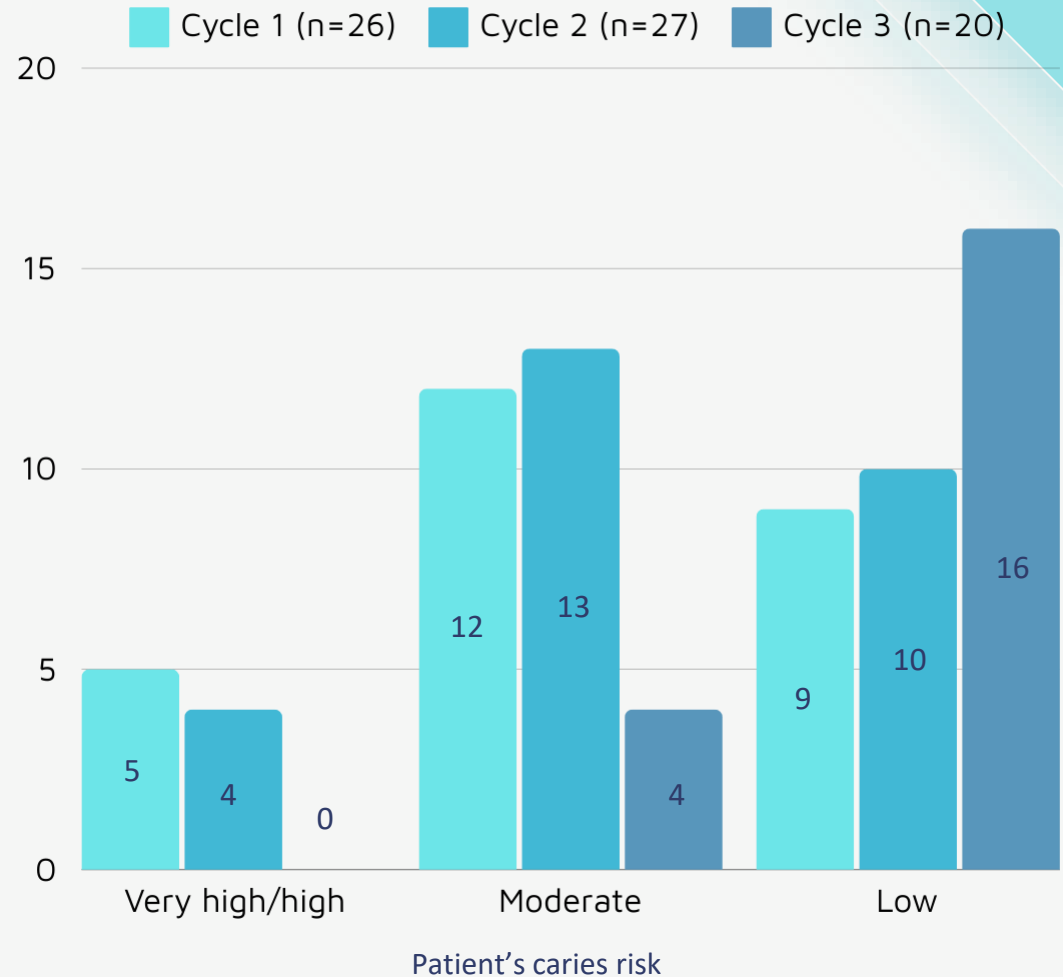


POST- INTERVENTION ANALYSIS (ABNA)

Percentage of patients developing active caries after CDT under GA within 6 months



Improvement in the caries risk scores of patients within six months



CHALLENGES

Patient's dental anxiety and cooperativeness for chairside treatment post-operatively

Parent's and patient's compliance to post-operative changes in oral habits

High turnover rate of attachment officers

LESSON LEARNT

Incorporating caries risk assessment (CRA) into regular dental practice helps professionals make tailored preventive and treatment recommendations based on each patient's caries risk. This approach leads to **more efficient use of time** and **resources** in oral health programs by reducing unnecessary interventions.


Treatment under general anesthesia is not the primary approach for severe caries. Instead, a comprehensive strategy emphasizing preventive modifications in dietary habits, oral hygiene practices, and regular post-treatment dental check-ups is typically preferred

Types of restorations used plays a role in determining the rate of success of restorations placed during treatment under general anesthesia

THE NEXT STEP

1

The project had been presented during Mesyuarat Kualiti PKPD Batang Padang Bil 1/2024 and approved to be implemented in the department as a part of quality improvement program in the department


MINIT MESYUARAT JAWATANKUASA PENINGKATAN KUALITI BIL 1 2024
PEJABAT KESIHATAN PERGIGIAN DAERAH BATANG PADANG

TARIKH : 22 Februari 2024 (Khamis)
MASA : 9:00 pagi hingga 1:00 petang
TEMPAT : Bilik mesyuarat Klinik Kesihatan Tapah

KEHADIRAN

1. Dr Shahdatunnur Binti Norazmi	Pegawai Perigian Daerah UG52
2. Dr Noruzaini Binti Megat Mohd Zainoddin	Pegawai Perigian UG54
3. Dr Zurada Binti Ismail	Pegawai Perigian UG54
4. Dr Aznem Binti Abdul Majid	Pegawai Perigian UG52
5. Dr Revashini Ganesan	Pegawai Perigian UG32
6. Dr Nur Shahirah Binti Mohd Taib	Pegawai Perigian UG48
7. Dr Shalini arp Mohan	Pegawai Perigian UG48
8. Dr Ng Rou Einn	Pegawai Perigian UG48
9. Dr Lyana Aqilah Binti Ramli	Pegawai Perigian UG48
10. Dr Nur Azlia Binti Dardin	Pegawai Perigian UG48
11. Dr Nurin Aqilah Binti Hamdan	Pegawai Perigian UG41
12. Dr Zulakha Binti Zainal Abidin	Pegawai Perigian UG41
13. Dr Muhd Hafzi Haziq Bin Khairulnizan	Pegawai Perigian UG41
14. Dr Muhd Isyraf Bin Mohd Nasir	Pegawai Perigian UG41
15. Lelawati Binti Mat Isa	Juruterapi Perigian U36
16. Robayah Binti Othman	Juruterapi Perigian U36
17. Roharia Binti Amri	Juruterapi Perigian U32

TIDAK HADIR DENGAN MAAF:

1. Dr Nur Amirah Binti Usoff	Pegawai Perigian UG48
------------------------------	-----------------------

1.0 PERUTUSAN PENERUSI

Puan Pengerusi memberi salam dan mengalu-alukan kehadiran semua ahli mesyuarat yang hadir. Puan Pengerusi memaklumkan bahawa mesyuarat kualiti dirancang diadakan sekali setahun. Jika ada keperluan untuk diadakan mesyuarat kali kedua, Puan Pengerusi akan memaklumkan hal tersebut kepada urusia dan ahli mesyuarat.

Tindakan Makluman

1.1 Puan Pengerusi memperkenalkan Dr Revashini sebagai penyetaras daerah, fasilitator Inovasi iaitu Dr Shalini, fasilitator QA (Quality Assurance) Dr Noruzaini dan fasilitator KIK iaitu Dr Azlia kepada ahli mesyuarat.

Tindakan Makluman

4.7.1.2 Dr Lyana dari Jabatan Pakar Pergigian Pediatrik Hospital Slim River membentangkan projek bertajuk *Reducing the percentage of patients developing active caries after comprehensive dental treatment under GA within 6 months in the Department of Paediatric Dentistry, Slim River Hospital*. Projek telah dihantar untuk saringan Konvensyen QA Peringkat Kebangsaan.

Tindakan: Makluman

THE NEXT STEP

2

To incorporate CAMBRA risk assessment into the orientation of the New Dental Officers that are undergoing attachment in our department

3

Standardized format for every patients post-operatively in which CAMBRA risk scores are incorporated

GENERAL CONDITION
BEHAVIOUR RATING SCALE _____
PAIN SCORE _____
ACCOMPANIED BY _____

EXTRAORAL
TMI (pain, clicking) _____
FACIAL SYMMETRY _____
LYMPH NODES (palpable, tender) _____
OTHERS _____

INTRAORAL
SOFT TISSUE
A. periodontal health _____
B. oral hygiene _____
C. others _____

HARD TISSUE
A. Caries
_____ | _____
* CARIES RISK HIGH MODERATE LOW
B. Missing
_____ | _____
C. Others

HARD TISSUE
A. Caries
_____ | _____
* CARIES RISK HIGH MODERATE LOW
B. Missing
_____ | _____
C. Others

THE NEXT STEP

4

Patient's with high caries risk will be continued to be reviewed up to 1 year post-op

5

Virtual check-up (through video call) for patients with low caries risk

REFERENCES

1. Pham, Lan & Tanbonliong, Thomas & Dizon, Marie & Huang, Annie & Cooke, Matthew. (2018). Trends in General Anesthesia Utilization by Board-Certified Pediatric Dentists. *Pediatric dentistry*. 40. 124-130.
2. Adair SM, Waller JL, Schafer TE, Rockman RA. A survey of members of the American Academy of Pediatric Dentistry on their use of behavior management techniques. *Pediatr Dent* 2004;26(2):159-66.
3. Jiang H, Shen L, Qin D, et al. Effects of dental general anaesthesia treatment on early childhood caries: a prospective cohort study in China. *BMJ Open* 2019;9:e028931. doi:10.1136/ bmjopen-2019-028931
4. Mebin, George, Mathew., Ganesh, Jeevanandan. (2023). Evaluation of Factors Affecting Clinical Outcomes of Full Mouth Rehabilitation Under General Anaesthesia for Children With Early Childhood Caries: A Prospective Cohort Study. *Cureus*, doi: 10.7759/cureus.46778
5. Li J-y, He S-y, Wang P-x, Dai S-s, Zhang S-q, Li Z-y, Guo Q-y and Liu F (2023) Incidence and risk factors of unplanned retreatment following dental general anesthesia in children with severe early childhood caries. *Front. Pediatr*
6. Amin M, Nouri R, ElSalhy M, Shah P, Azarpazhooh A. Caries recurrence after treatment under general anaesthesia for early childhood caries: a retrospective cohort study. *Eur Arch Paediatr Dent*. 2015 Aug;16(4):325-31. doi: 10.1007/s40368-014-0166-4. Epub 2015 Jan 27. PMID: 25619862.
7. Savanheimo N, Vehkalahti MM. Five-year follow-up of children receiving comprehensive dental care under general anesthesia. *BMC Oral Health*. 2014 Dec 15;14:154. doi: 10.1186/1472-6831-14-154. PMID: 25512015; PMCID: PMC4277839.
8. Tyger, Foster., Hiran, Perinpanayagam., Amy, Pfaffenbach., Margaret, Certo. (2006). Recurrence of early childhood caries after comprehensive treatment with general anesthesia and follow-up.. *Journal of dentistry for children*, 73(1):25-30.
9. Rathee M, Sapra A. Dental Caries. [Updated 2023 Jun 21]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan-.
10. (Yoshioka, M. L. (2021). Factors Associated with Repeat Dental Treatment Under General Anesthesia: A Case-Control Study (Master's thesis, The Ohio State University).

ACKNOWLEDGEMENT

1. Dr. Salleh bin Zakaria, Timbalan Pengarah Kesihatan Negeri (Pergigian)
2. Dr Nur Farohana binti Zainol, Ketua Penolong Pengarah(Pergigian) BKP Perak
3. Perak State QA Facilitators
 - a. Dr. Khamiza bt Zainol Abidin (Pakar Pergigian Periodontik)
 - b. Dr. Mohd Syaril b. Mohd Tahir (Pegawai Pergigian Daerah Manjung)
 - c. Dr. Farah Syazwani bt Mohamad Tarmizi (Pakar Pergigian Restoratif)
 - d. Dr Nur Azniza Zawin Anuar(Pegawai Pergigian Daerah Kampar)
4. Pejabat Kesihatan Pergigian Daerah Batang Padang (PKPDBP)
5. All QA members & staffs KlinikPakar Pergigian Pediatrik, Hospital Slim River



THANK YOU