



**MINISTRY OF HEALTH
BRUNEI DARUSSALAM**

ORAL HEALTH INFORMATION BOOKLET 2013

Research and Development Unit
Dental Services
Ministry of Health
Negara Brunei Darussalam

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INTRODUCTION

VISION AND MISSION

Vision

Together towards a Healthy Nation

Mission

To improve Oral Health through effective, equitable, affordable, accessible, safe & sustainable Oral Health Care in Brunei

Darussalam

ORGANISATION STRUCTURE

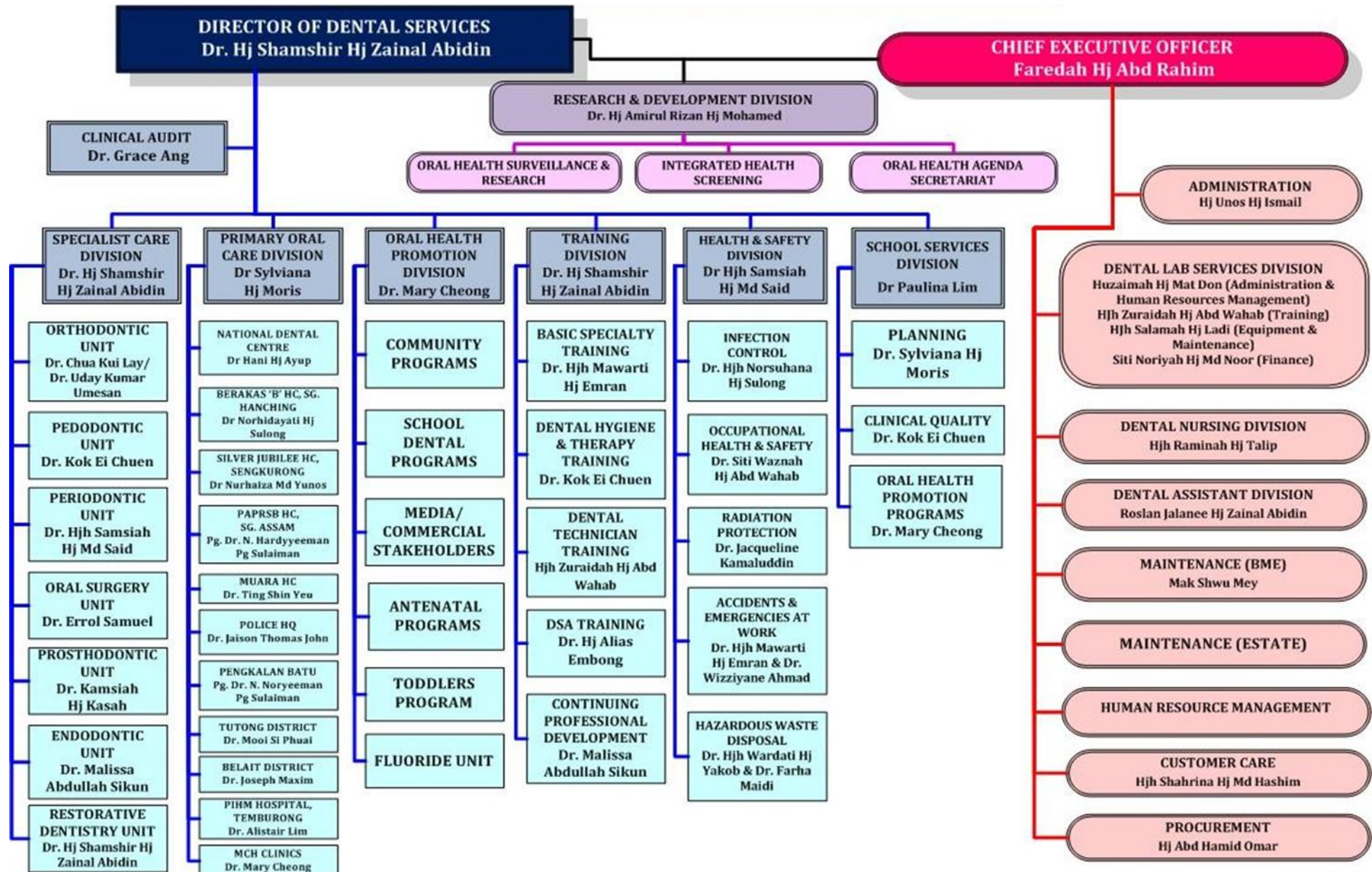


Figure 1.2 Department of Dental Services Organisational Structure

DEMOGRAPHY

Brunei Darussalam conducted the first population census in 1971. The fifth decennial 2011 census of population and housing has been completed by the Department of Economic Planning and Development, Prime's Minister's Office, Brunei Darussalam.

Table 1.3 Population Demography (2009-2013)

Estimated Population	2009	2010	2011	2012	2013
Total (in thousands) :	380.1	386.8	393.372	399.8	406.2
Male (in thousands) :	196.3	199.8	203.144	206.7	210.3
Female (in thousands) :	183.8	187.0	190.228	193.1	195.9
Sex ratio (M / 100F) :	107	107	107	107	107
Persons / sq.km :	66	67	68	69	70
Annual rate of increase :	1.4%	1.8%	1.7%	1.6%	1.6%
Age Structure (in thousands)					
0 - 4 :	29.3	29.8	30.323	31.1	32.0
5 - 19 :	100.6	102.4	104.079	103.5	102.6
20 - 54 :	214.9	218.8	222.540	226.0	229.6
55 - 64 :	21.8	22.2	22.562	24.5	26.5
65 & Over :	13.5	13.6	13.868	14.7	15.5
Race (in thousands)					
Malay * :	249.7	254.1	258.466	262.8	267.2
Chinese :	39.2	39.9	40.534	41.0	41.6
Others :	91.2	92.8	94.392	96.0	97.4
District (in thousands)					
Brunei-Muara :	270.4	275.3	279.924	285.3	290.5
Belait :	58.7	59.7	60.744	61.5	62.5
Tutong :	42.4	43.1	43.852	44.1	44.3
Temburong :	8.6	8.7	8.852	8.9	8.9

Note:

* - Including other Indigenous Groups of the Malay race namely Belait, Bisaya, Brunei, Dusun, Kedayan, Murut and Tutong.

Source:

Department of Economic Planning and Development, Prime Minister's Office.

POPULATION PYRAMID

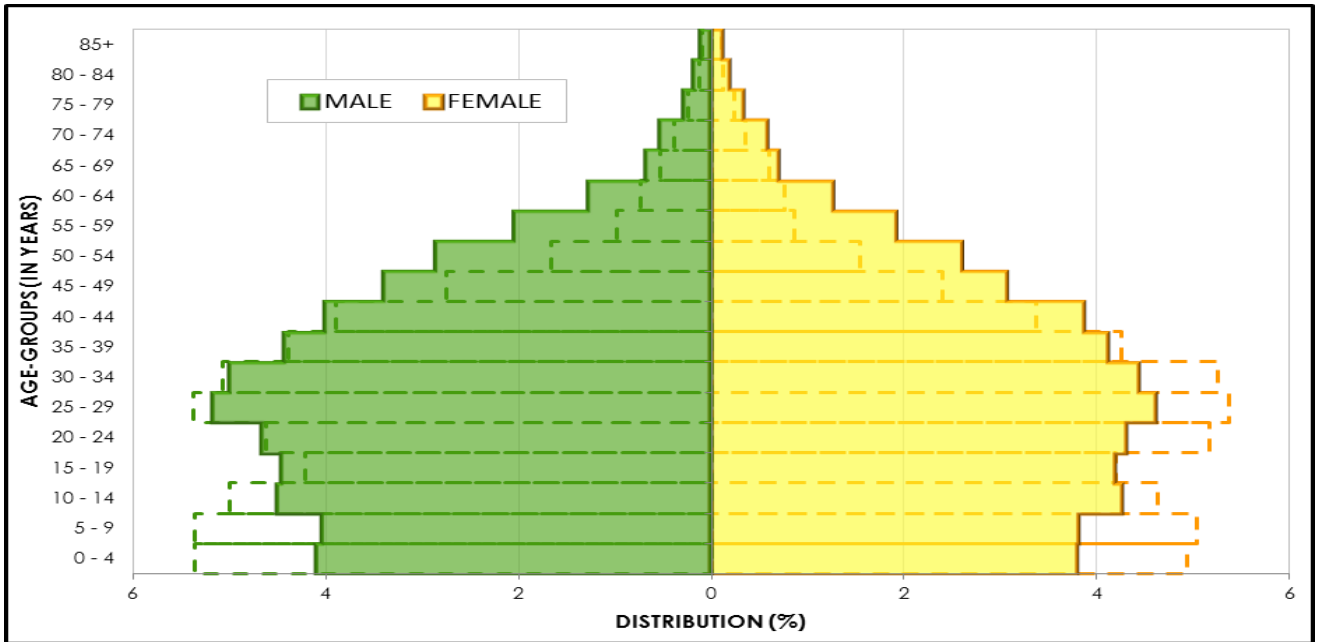


Figure 1.4a Population Pyramid 2013

Note:

Population pyramid shows percentage distribution of population by gender and age-groups. For example, (0 - 4) age-group for the year 2013 is represented with 7.9% of total population in which 4.1% and 3.8% are made up of male and female population respectively.

POPULATION TREND OF BRUNEI DARUSSALAM (1911-2013)

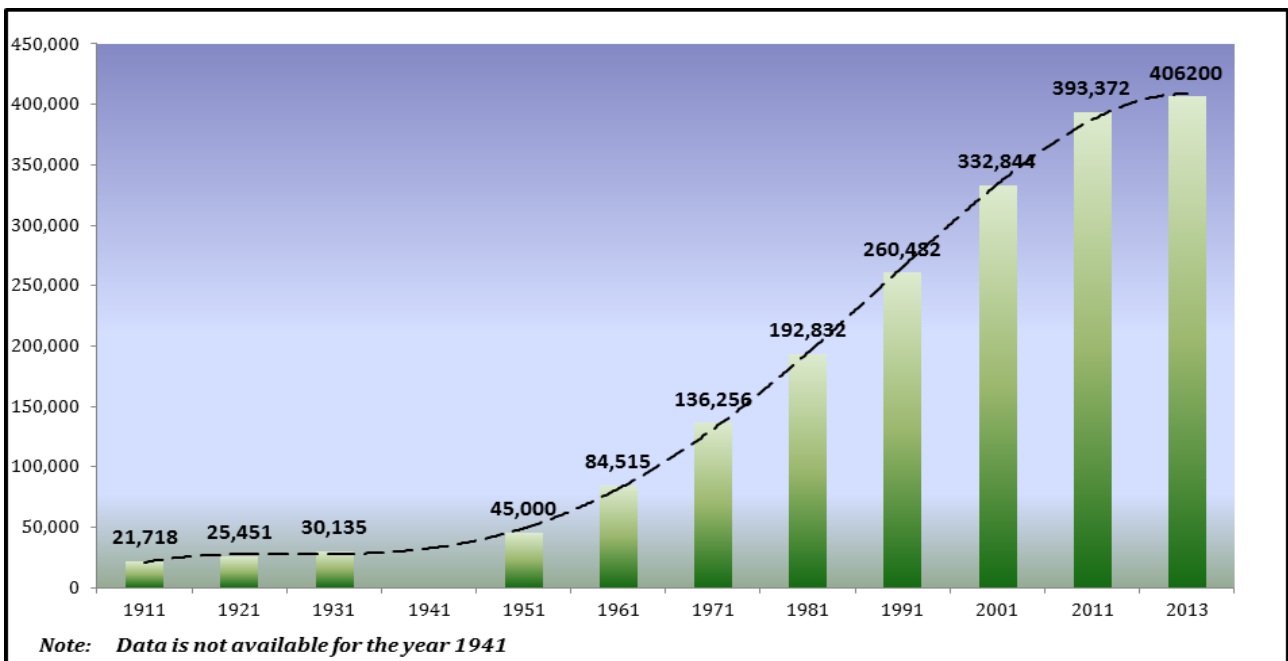


Figure 1.4b Population trend of Brunei Darussalam (1911-2013)

HUMAN RESOURCES

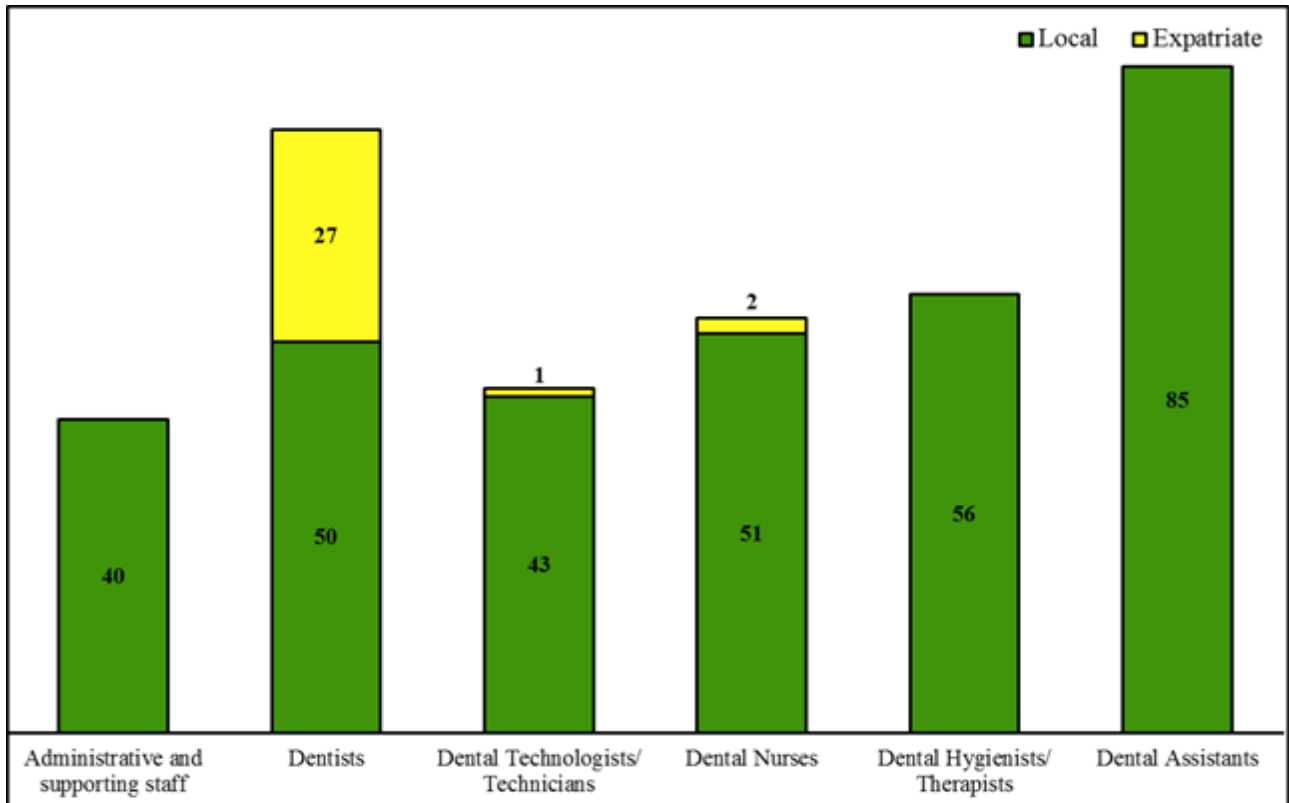


Figure 1.5a Number of human resources in the Department of Dental Services by each discipline

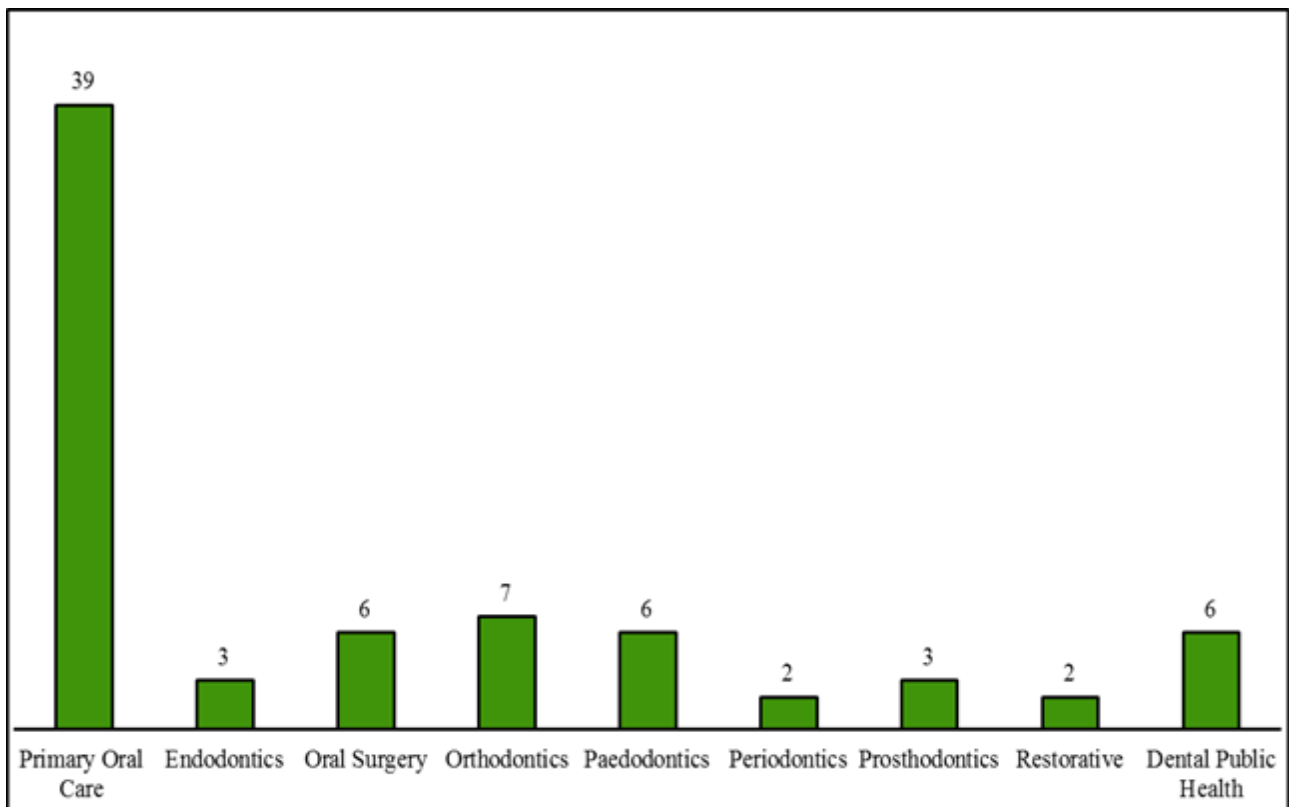


Figure 1.5b Number of Dentists according to Specialty (2013)

DISTRIBUTION OF DENTAL CHAIRS

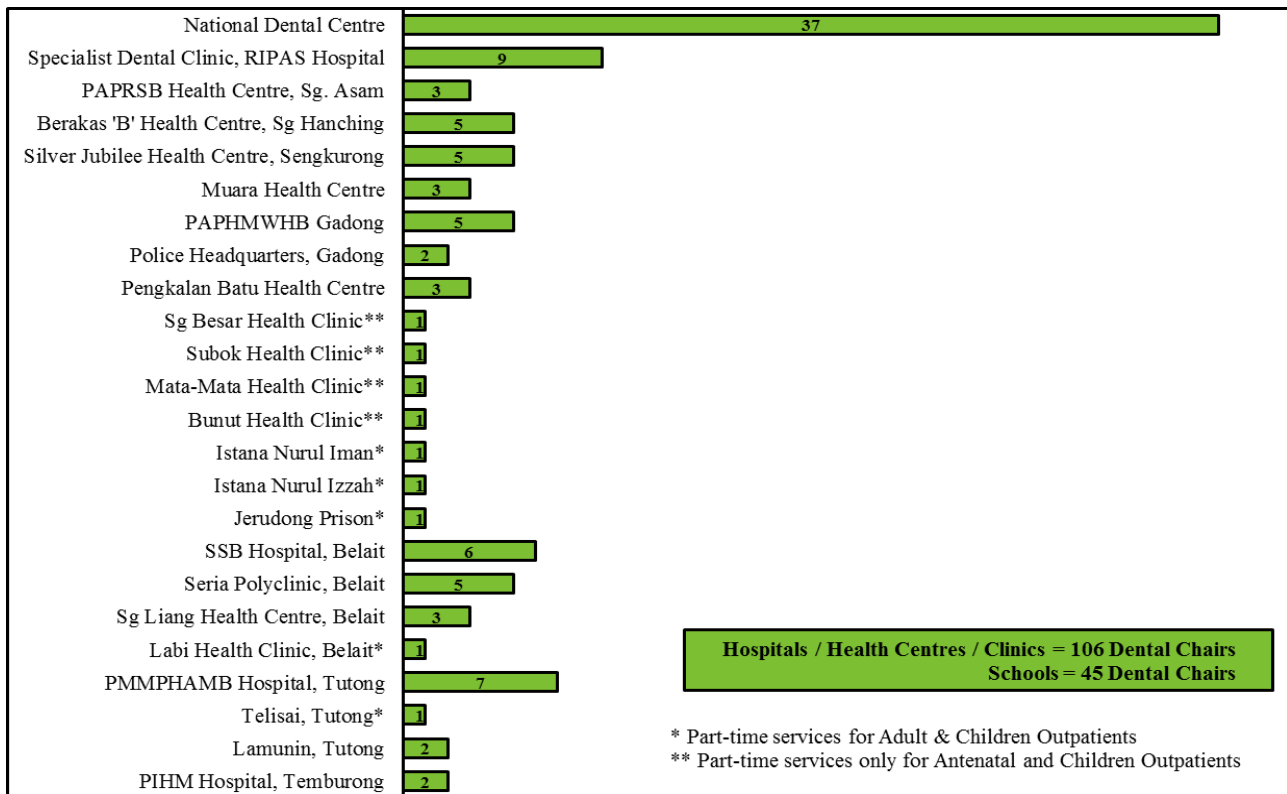


Figure 1.6 Distribution of dental chairs at Hospitals/Health Centres/Clinics and schools (2013)

UTILISATION OF GOVERNMENT DENTAL SERVICES

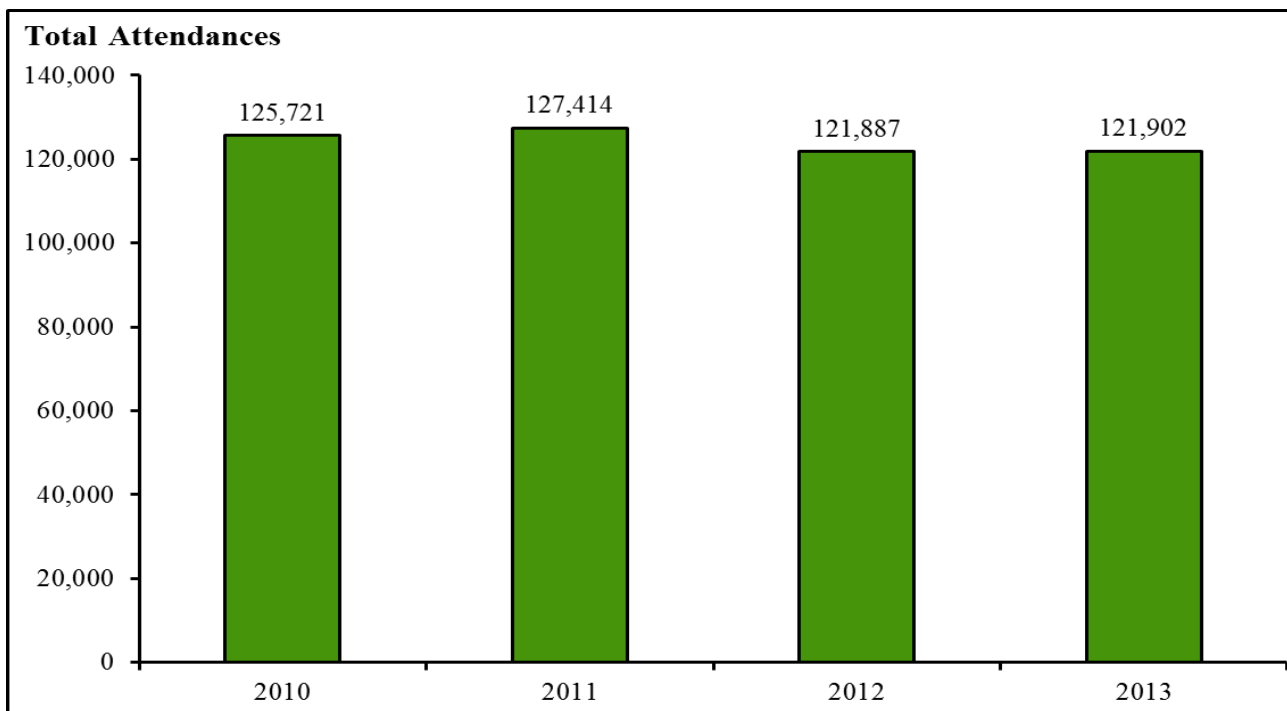


Figure 1.7 Total attendances in Hospitals/Health Centres/Health Clinics (2010-2013)

KEY PERFORMANCE INDICATORS

Table 1.8 Key Performance Indicators for the Department of Dental Services

Goal (FDI, WHO, IADR)	Key Performance Indicators	Baseline	Measurement Indicators	
			2020	2035
Dental Caries				
To increase the proportion of caries free 6-year olds by X%	Percentage caries-free 6-year olds	11.3% (1999)	40%	80%
To reduce the DMFT (Decayed, Missing, Filled Teeth) particularly the D (Decayed) component at age 12 years	DMFT score of 12 year olds	4.82 (1999)	2 or less	1 or less
Periodontal Disease				
To reduce the prevalence of active periodontal infection (with or without loss of attachment) in all ages by X%	Percentage prevalence of active periodontal disease of 10-12 year olds (BPE Code 1)	76.4% (1999)	50%	10%
	Percentage prevalence of active periodontal disease of 35-44 year olds (BPE Code 1)	43.4% (1999)	30%	10%
To increase the proportion of people in all ages with healthy periodontium (gums & supporting bone structure) by X%	Percentage prevalence of healthy periodontium of 10-12 year olds (BPE Code 0)	1.3% (1999)	30%	70%
	Percentage prevalence of healthy periodontium of 35-44 year olds (BPE Code 0)	0.0% (1999)	30%	70%
Health Care Services				
To establish evidence-based plans to create human resources that can provide care that are appropriate to the cultural, social, economic and morbidity profiles of all groups within the population	Dentist : Population ratio	1 : 7,960 (2008)	1 : 5,500	1 : 4,000
	Nurse : 0 -16 yr Population ratio	1 : 1,655 (2008)	1 : 1,200	1 : 800
	Dentist : Technician ratio	2 : 1.4 (2008)	2 : 1.8	2 : 2.5
	Dentist : Dental Assistant ratio	1 : 1.5 (2008)	1 : 1.8	1 : 2
To increase the proportion of the population with access to adequate oral health care	Percentage of Oral Health Care Coverage	21% (2008)	40%	80%

DMFT - Mean number of untreated Decayed, Missing and Filled permanent teeth

WHO - World Health Organization

FDI - Federation Dentaire Internationale (FDI) World Dental Federation

***UTILISATION OF GOVERNMENT
DENTAL SERVICES***

UTILISATION OF GOVERNMENT DENTAL SERVICES

COVERAGE

A measure of the extent to which the services rendered cover the potential need for these services in a community.

Formulae: $\frac{\text{Total New Patients}}{\text{Total Population}} \times 100$

OUTPATIENT

A patient who is a walk-in patient (not an inpatient).

APPOINTMENT

An arrangement to meet the doctor for consultation/treatment at a particular time and place.

CATCHMENT AREA

The area from which people are allocated to a particular Hospital or Health Centre.

PRODUCTIVITY

The rate at which dental services are produced especially output per year.

PATIENT COMPLETION

The degree or extent to which a patient follows or completes a prescribed diagnostic treatment of procedures.

Formulae: $\frac{\text{Total Completed Patients}}{\text{Total New Patients}} \times 100$

Table 2.1a Total attendances (outpatients and appointments) by Hospitals/Health Centres/Clinics for each age group in Brunei-Muara district (2013)

Treatment Centre	Age group																All combined							
	0-5				6-12				13-19				20-55								>55			
	OP		APPT		OP		APPT		OP		APPT		OP		APPT		OP		APPT		OP		APPT	
	DO	DN	DO	DN	DO	DN	DO	DN	DO	DN	DO	DN	DO	DN	DO	DN	DO	DN	DO	DN	DO	DN	DO	DN
National Dental Centre	126	196	71	58	328	832	804	466	1,005	478	2,726	449	9,807	35	9,997	1,776	1,488	9	2,208	222	12,754	1,550	15,806	2,971
Hospital-based																								
RIPAS	35	1	428	37	47	1	513	246	60	0	402	98	401	0	2,620	0	89	0	526	0	632	2	4,489	381
Health Centres																								
Sg Assam	6	138	2	2	40	476	6	18	519	166	88	22	2,729	0	503	0	428	0	156	0	3,722	780	755	42
Sg Hanching	35	441	0	11	130	1,342	7	19	496	457	36	56	5,043	21	398	125	1,034	10	201	5	6,738	2,271	642	216
Sengkurong	34	414	2	108	90	1,114	7	100	652	401	56	98	5,645	0	687	32	921	0	301	4	7,342	1,929	1,053	342
Gadong	19	211	0	13	35	500	1	10	228	232	30	12	1,668	7	330	18	202	0	77	0	2,152	950	438	53
Muara	19	118	0	0	44	399	3	14	329	153	28	29	3,190	4	485	30	584	0	186	0	4,166	674	702	73
Police	0	173	0	21	0	389	0	40	112	121	13	16	1,772	8	425	0	9	0	12	0	1,893	691	450	77
Pengkalan Batu	7	128	0	35	32	389	9	55	220	159	23	33	1,862	26	249	60	300	2	86	4	2,421	704	367	187
Health Clinics																								
Sg Besar	0	52	0	0	0	96	0	0	1	0	0	0	23	0	158	0	0	0	0	0	24	148	158	0
Subok	0	36	0	0	0	49	0	0	1	0	0	0	14	0	175	0	0	0	0	0	15	85	175	0
Mata-Mata	0	136	0	1	0	393	0	26	0	0	0	0	0	0	184	0	0	0	28	0	0	529	212	27
Bunut	0	144	0	0	0	536	0	18	0	291	1	19	1	0	260	0	0	0	0	0	1	971	261	37
Prison	0	0	0	0	0	0	0	0	0	0	0	0	90	0	0	0	2	0	0	0	92	0	0	0
CDC	3	17	27	343	1	19	17	247	0	2	5	58	0	0	0	0	0	0	0	0	4	38	49	648
All combined	284	2,205	530	629	747	6,535	1,367	1,259	3,623	2,460	3,408	890	32,245	101	16,471	2,041	5,057	21	3,781	235	41,955	11,322	25,557	5,054

Table 2.1b Total attendances (outpatients and appointments) by Hospitals/Health Centres/Clinics for each age group in Belait district (2013)

Treatment Centre	Age group																		All combined					
	0-5				6-12				13-19				20-55				>55							
	OP		APPT		OP		APPT		OP		APPT		OP		APPT		OP		APPT		OP		APPT	
	DO	DN	DO	DN	DO	DN	DO	DN	DO	DN	DO	DN	DO	DN	DO	DN	DO	DN	DO	DN	DO	DN	DO	DN
Hospital-based																								
SSB Hospital	51	350	115	52	80	834	130	131	529	266	199	81	4,115	7	1,498	79	968	3	371	26	5,261	1,460	2,313	1,829
Health Centres																								
Seria	9	110	0	25	59	265	136	32	229	122	873	29	2,115	0	1,272	0	709	0	320	0	2,883	497	2,601	86
Sg Liang	18	177	0	44	33	313	5	68	179	113	28	37	1,722	0	271	0	410	0	163	0	2,361	603	467	149
Health Clinics																								
Labi ^a	0	0	0	0	9	0	0	0	7	0	0	0	56	0	5	0	12	0	4	0	84	0	9	0
All combined	78	637	115	121	181	1,412	271	231	944	501	1,100	147	8,008	7	3,046	79	2,099	3	858	26	10,589	2,560	5,390	2,064

^aLabi – Thursday morning only

Table 2.1c Total attendances (outpatients and appointments) by Hospitals/Health Centres/Clinics for each age group in Tutong district (2013)

Treatment Centre	Age group														All combined									
	0-5		6-12		13-19		20-55		>55															
	OP		APPT		OP		APPT		OP		APPT		OP		APPT									
	DO	DN	DO	DN	DO	DN	DO	DN	DO	DN	DO	DN	DO	DN	DO	DN								
Hospital-based																								
PMMPMHAMB Hospital	31	266	12	38	92	1,146	75	99	892	266	374	98	4,442	0	1,284	0	809	0	370	0	5,613	1,678	1,912	235
Health Centres																								
Telisai	0	33	0	0	0	68	0	0	0	7	0	0	8	0	0	0	0	0	0	0	8	108	0	0
Lamunin	0	211	0	0	3	469	3	2	180	91	24	4	1,430	0	167	0	374	0	13	0	1,987	771	207	6
All combined	31	510	12	38	95	1,683	78	101	1,072	364	398	102	5,880	0	1,451	0	1,183	0	383	0	7,608	2,557	2,119	241

Table 2.1d Total attendances (outpatients and appointments) by Hospitals/Health Centres/Clinics for each age group in Temburong district (2013)

Treatment Centre	Age group														All combined									
	0-5		6-12		13-19		20-55		>55															
	OP		APPT		OP		APPT		OP		APPT		OP		APPT									
	DO	DN	DO	DN	DO	DN	DO	DN	DO	DN	DO	DN	DO	DN	DO	DN								
Hospital-based																								
PIHM Hospital	0	191	0	18	10	384	1	45	164	152	21	17	1,389	33	268	17	323	0	49	0	1,886	760	339	97
All combined	0	191	0	18	10	384	1	45	164	152	21	17	1,389	33	268	17	323	0	49	0	1,886	760	339	97

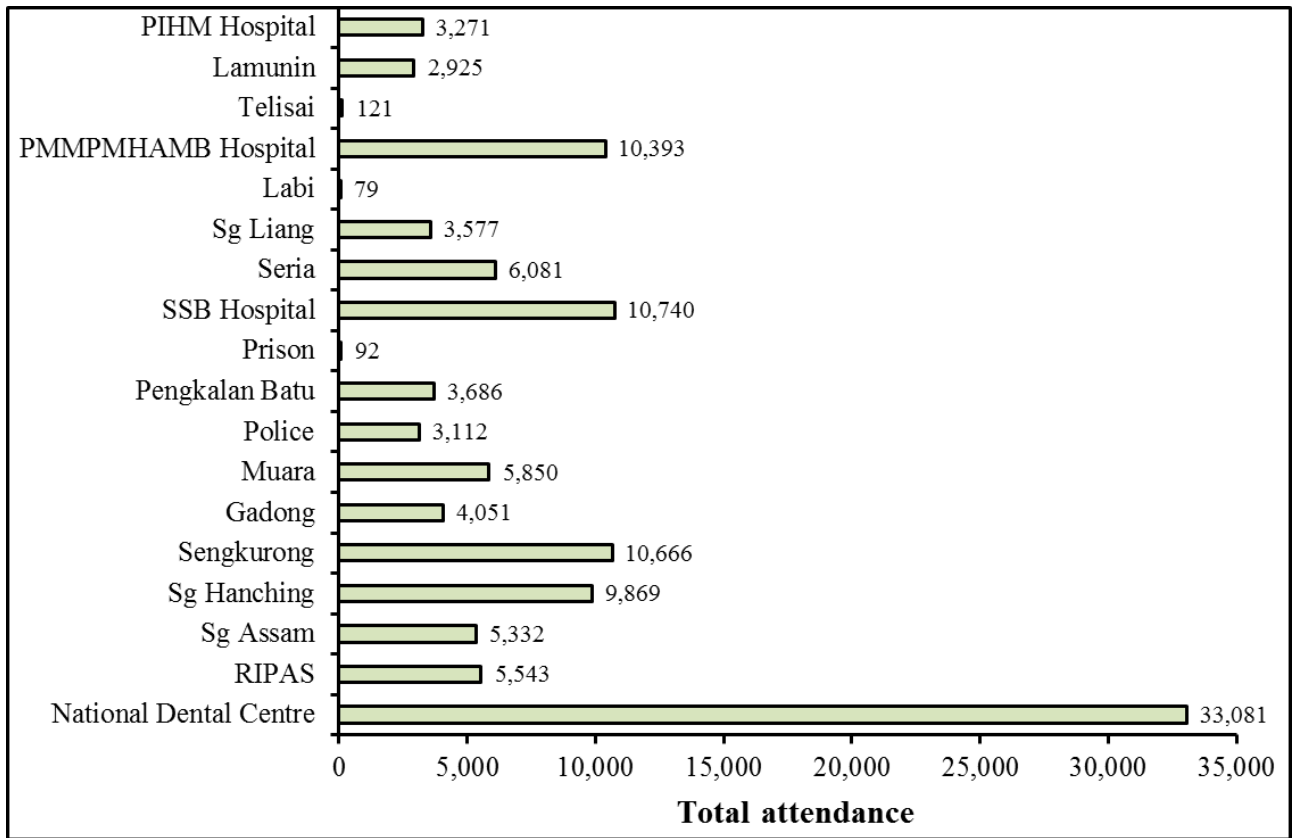


Figure 2.1a Total attendances by Hospitals/Health Centres/Clinics (2013)

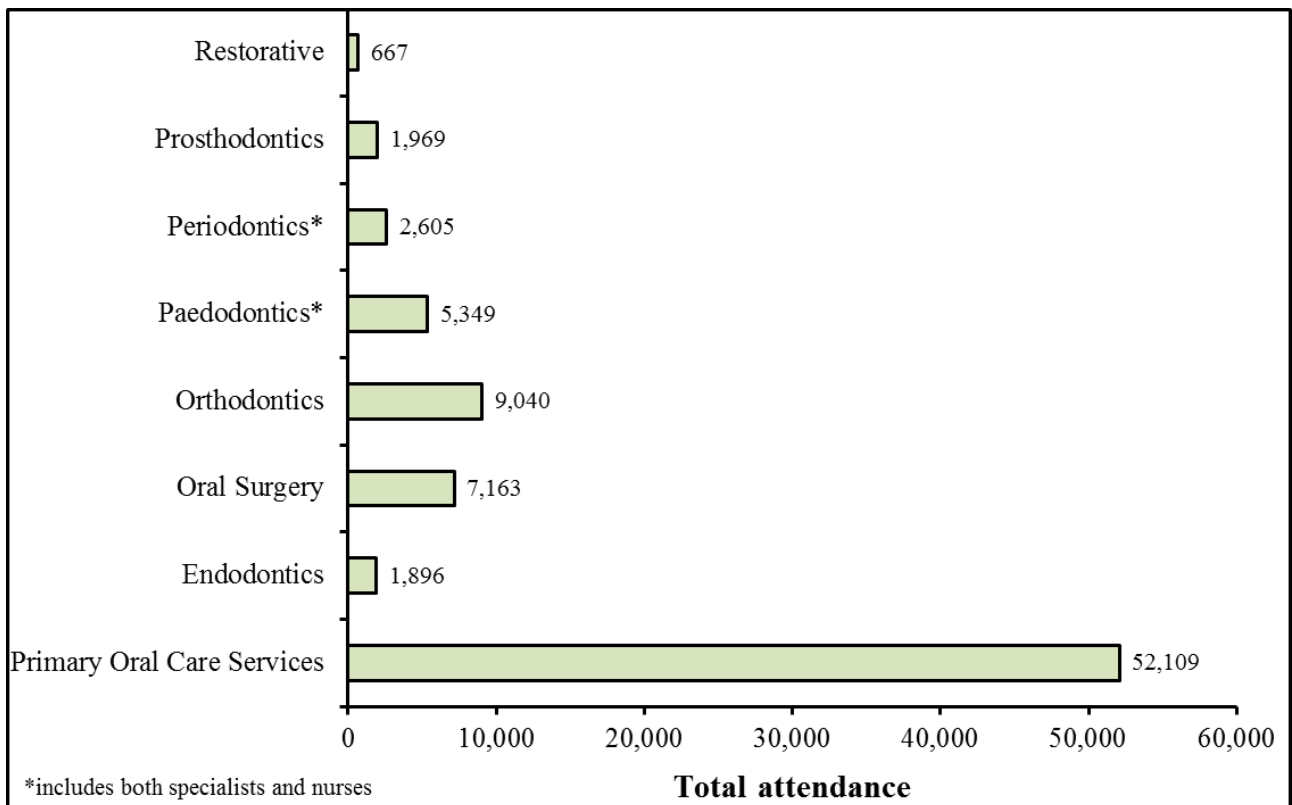


Figure 2.1b Total attendances by specialty (2013)

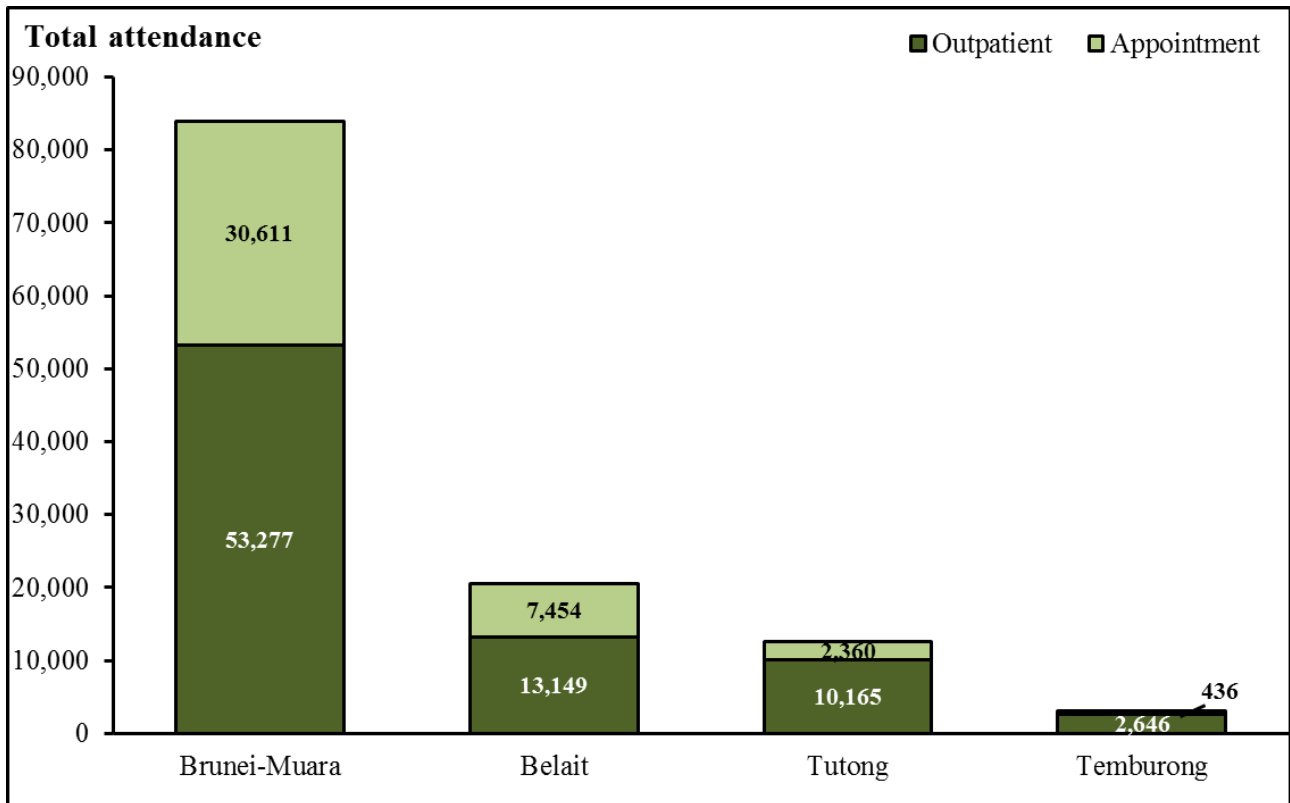


Figure 2.1c Total attendances by district (2013)

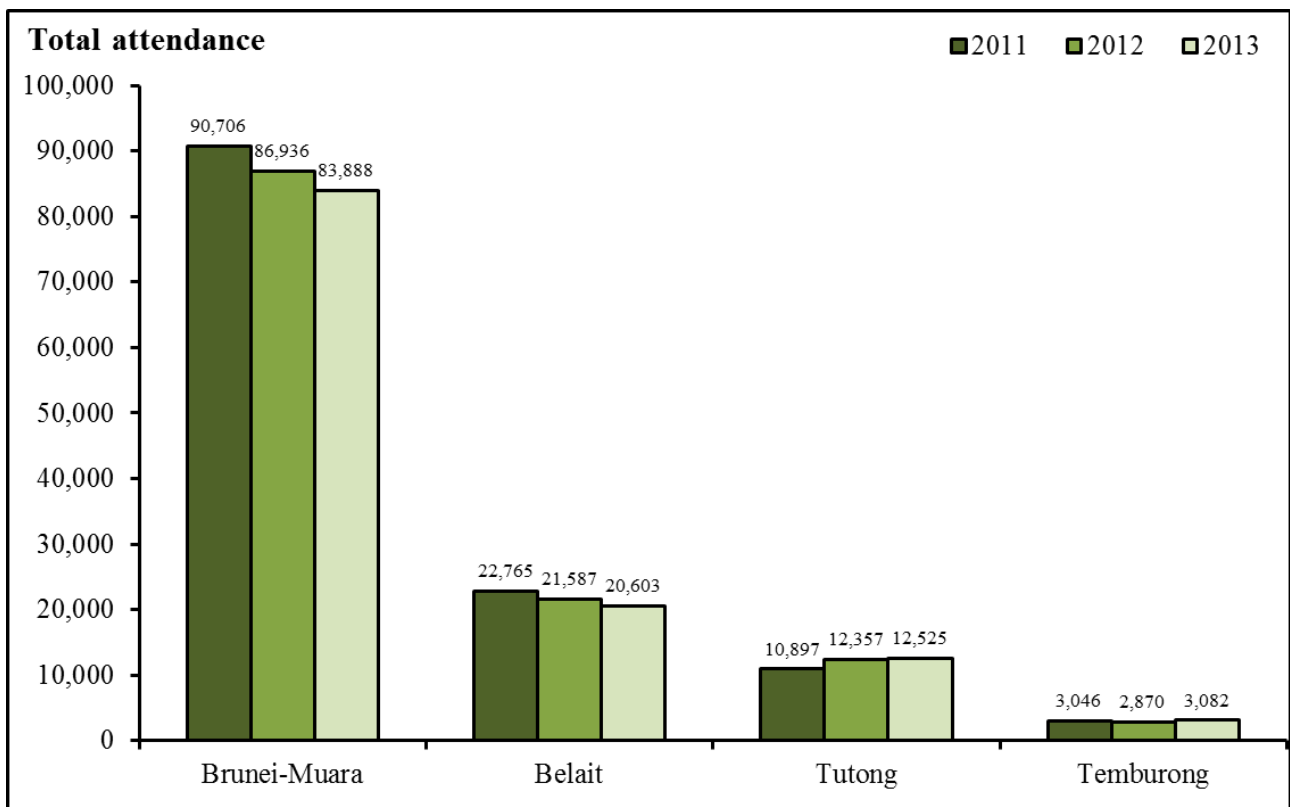


Figure 2.1d Total attendances by district (2011-2013)

SCHOOL DENTAL SERVICES

SCHOOL DENTAL SERVICES

School Dental Services provide oral health care services to the schoolchildren of Brunei Darussalam, in such a way as to improve and maintain their oral health at an optimal level, through various preventive and promotive means, and by ensuring that the oral health care delivered is appropriate and of the highest quality possible.

These include:

1. Providing appropriate preventive, curative, restorative and rehabilitative oral health care to these children.
2. Referral of those children who require oral health care that is beyond the competency of the dental nurses, to dental officers and specialists.
3. Promoting the children's oral health through various oral health promotion programmes and activities to these children and in collaboration with the School Authorities, communities and parents/guardians.
4. Collaborating with the Ministry of Education in the Health Promoting School Programme to promote oral health in schools.

Since 2007, mobile dental squads consisting of 2-4 school dental nurses from each team, using portable equipment to treat schoolchildren in schools without a static school dental clinic. Instead of having target groups, the teams now aim to complete at least 80% of all the students (Pra to Y6) before moving onto another school. They also concurrently treat students in their designated static dental clinics throughout the year.

Table 3.1a Mobile squad teams in Brunei-Muara district (2013)

XCAV8'S (4 Nurses)	K 9 (4 Nurses)	PEARL (4 Nurses)	NASA (4 Nurses)	OMEGA (4 Nurses)
1. SR PPSDSB Mata-Mata	1. SR SUAS Muara	1. SR Amar Pahlawan	1. SR Pular Ulak	1. SR Delima Satu
2. St. Andrew's School	2. SR PAPB Peramu*	2. SR PDJ Kg Setia	2. SR Jerudong	2. SR Serasa
3. SR Dato Marsal	3. SR Sg Kebun	3. SR Anggerek Desa	3. SR BS Bunut	3. SM Chung Hwa
4. SR Kiarong*	4. SR Lumapas	4. SR Pulaie*	4. SR Mentiri	4. SR Raja Isteri Fatimah
5. SR DMW Lambak	5. SR Pengkalan Batu	5. SR Yayasan SHHB	5. SR Mabohai	5. SR Katok*
6. SR Masin*	6. SR PB Limau Manis	6. SR Sg Siamas*	6. SR Beribi Telanai*	6. SR HMS Sg Hanching*
7. SR Batu Marang*	7. SR Saba Darat*	7. SR Dato Othman*	7. SR Rimba Satu*	7. SR OKBI Subok*
8. SR Tanah Jambu*	8. SR Pintu Malim*	8. SR SAB Sg Besar*	8. SR AHMY Katimahar*	8. SR Kg Mata-Mata*
9. SR NAR Menunggul*	9. SR Junjungan*	9. SR HMJM Kiulap*	9. SR Bebuluh*	9. SR Dato Godam*
10. SR Kapok*	10. SR Kasat*	10. SR Hj Tarif Tamoi*	10. SR Bendahara Lama*	10. SR TK Sg Bunga*
11. SR Dato Basir*	11. SR Dato Ahmad*			11. SR Jln 49 Lambak Kanan*
12. SR Mulaut*	12. SR Sengkurong			

*Non-Static Schools (Schools without a static dental clinic)

Table 3.1b Mobile squad teams in other districts (2013)

TUTONG			BELAIT		TEMBURONG	
TOPAZ (3 Nurses)	PRIMAROSA (4 Nurses)	ESMERALDE (2 Nurses)	HEBAT (4 Nurses)	TLC (4 Nurses)	DENTEM A (4 Nurses)	DENTEM B (4 Nurses)
1. SR Telisai	1. SR Kiudang	1. SR Muda Hashim	1. SR Muhd Alam	1. SR Kuala Belait	1. SR Puni	1. SR Selangan*
2. SR OKAWSD Kupang	2. SR Penapar*	2. SR Penanjong	2. SRPSNPMY Lorong 3	2. SR Ahmad Tajudin	2. SR SH Bangar	2. SR Semabat*
3. SR Bukit Beruang	3. SR Birau*	3. SR Bukit Udal*	3. SR Panaga	3. SR PSJPAM Pandan	3. SR Kenua*	3. SR Selapon*
4. SR Bakiau*	4. SR AR Tg Maya*	4. SR Lamunin*	4. SR Sg Liang	4. SR Sg Teraban	4. SR Batu Apoi*	4. SR Negalang*
5. SR Sinaut*	5. SR Sengkarai*	5. SR PM Mahkota*	5. SR Lumut	5. Sekolah Chung Hwa	5. SR Piasau-Piasau*	5. SR Amo
6. SR PK Bukit Beruang II*	6. SR Bt Penggal*	6. SR Ukong*	6. Sekolah Chung Ching	6. SR PSB SOAS	6. SR Labu Estate*	
7. SR Danau*		7. SR Lubok Pulau*	7. SR Sg Tali II*	7. SR Labi*		
8. SR Keriam						

*Non-Static Schools (Schools without a static dental clinic)

Table 3.2 Percentage coverage (number of new patients) by districts for each age group (2013)

District	School population	Consented	Age group			All combined	% Coverage
			0-5	6-12	13-19		
Brunei-Muara	43,130	13,222	672	8,695	0	9,367	21.7
Belait	9,705	3,633	123	3,140	0	3,263	33.6
Tutong	5,392	2,781	386	2,916	0	3,302	61.2
Temburong	1,167	704	70	717	0	787	67.4
All combined	59,394	20,340	1,251	15,468	0	16,719	28.1

Note: All treatments in Schools are done by Dental Nurses/Therapists

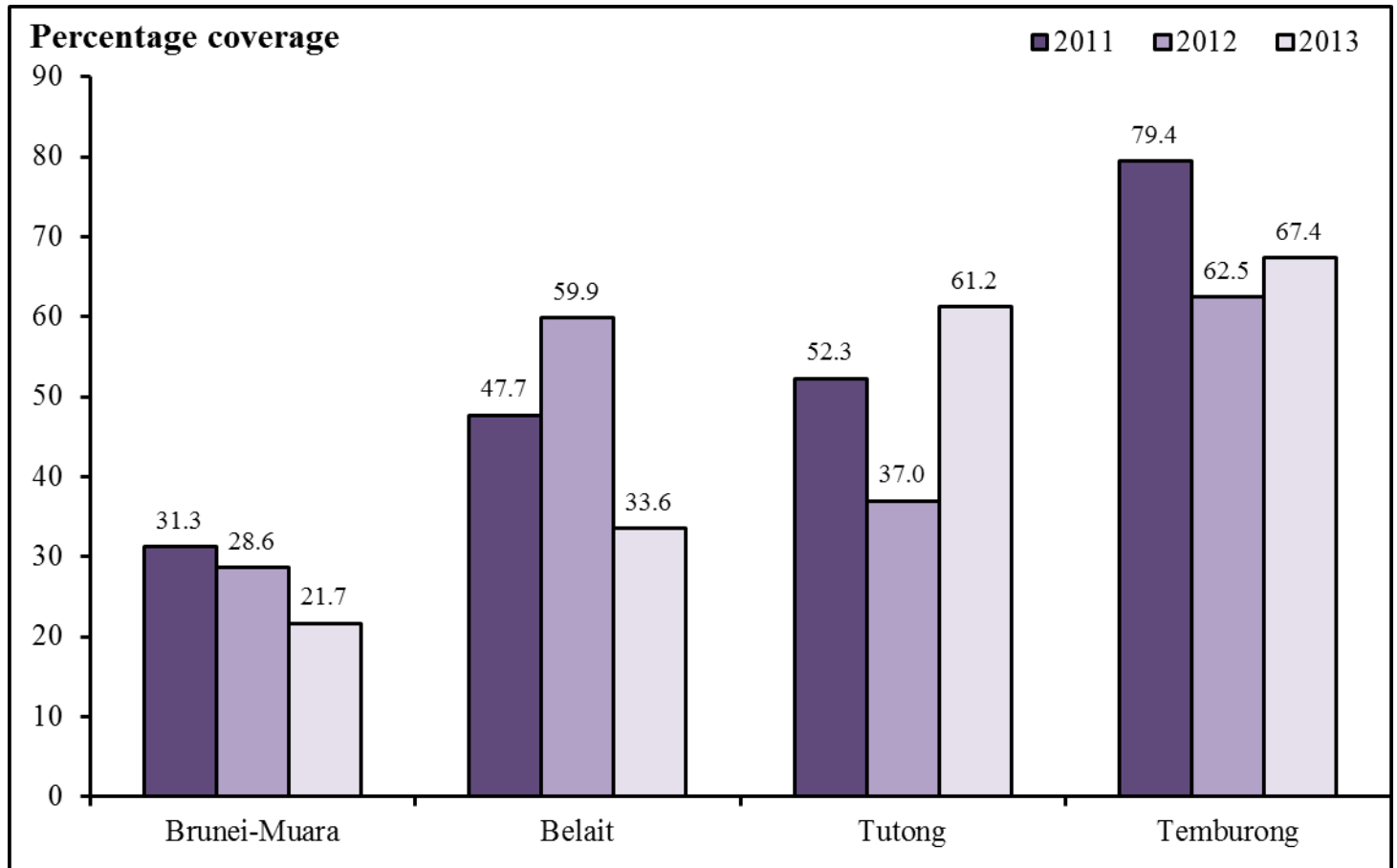


Figure 3.3 Total attendances by district (2011-2013)

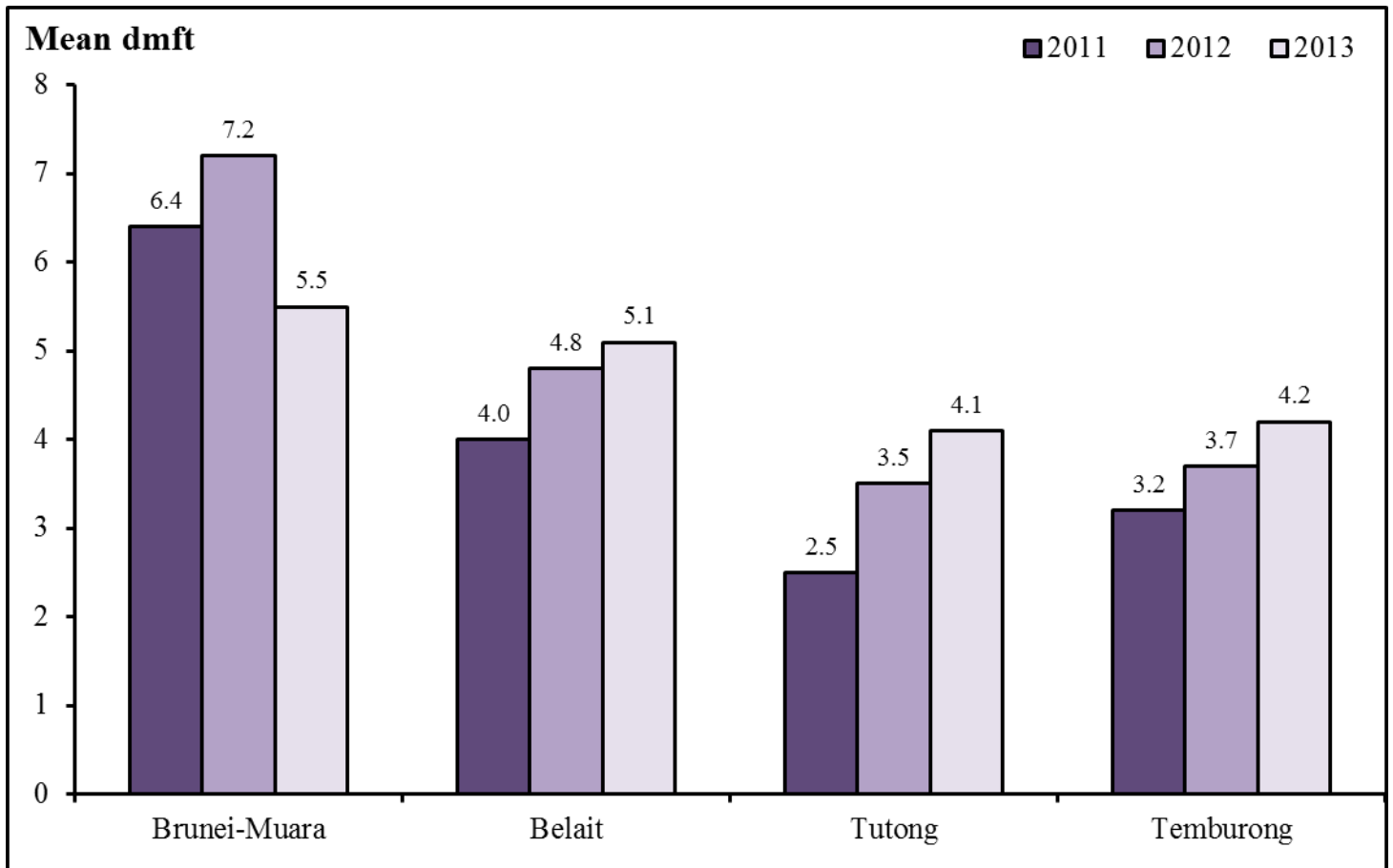


Figure 3.4a Deciduous dentition dental caries experience for 5-year-old school children (2011-2013)

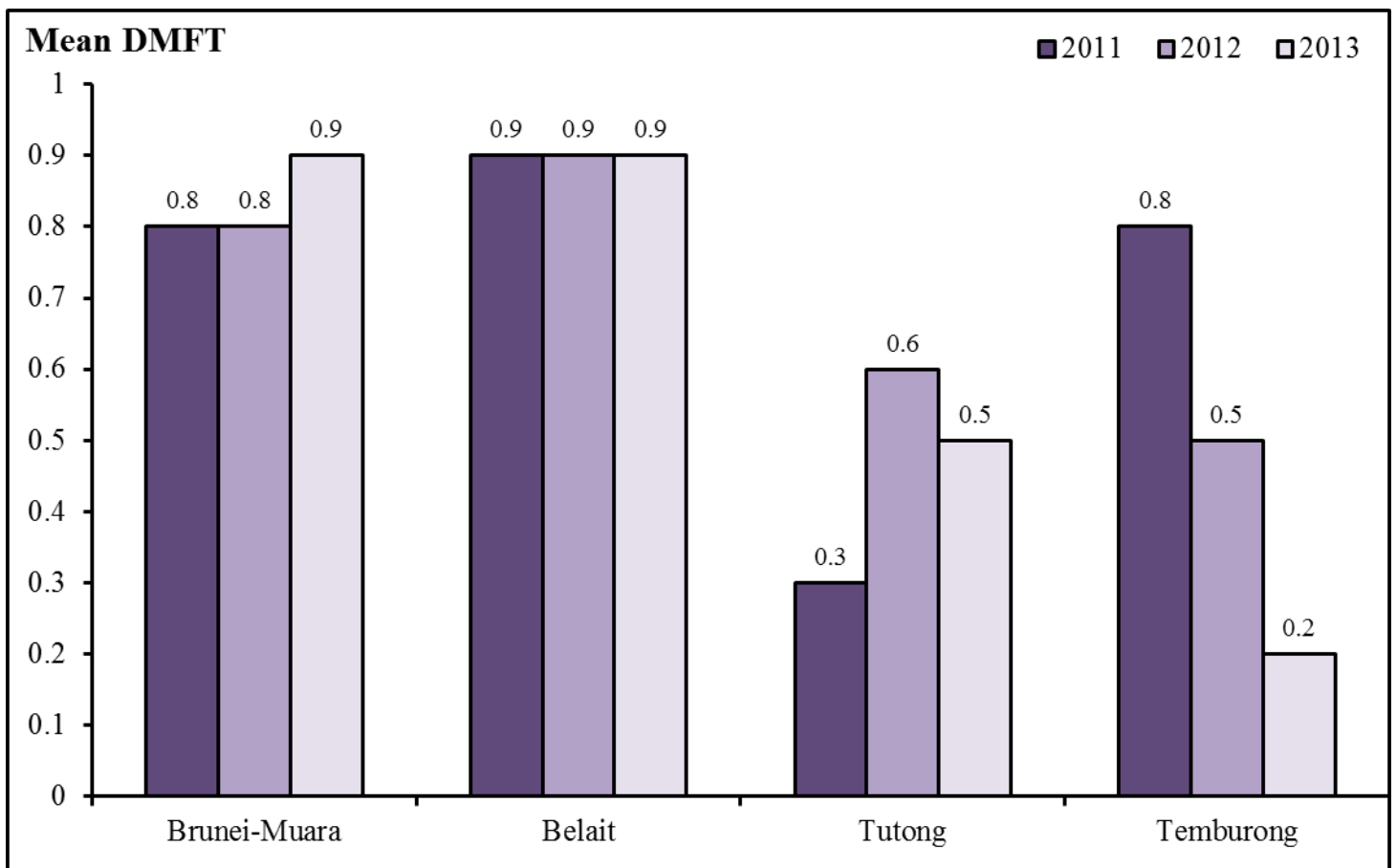


Figure 3.4b Permanent dentition dental caries experience for 12-year-old school children (2011-2013)

PRODUCTIVITY

PRIMARY ORAL CARE SERVICES

Primary Oral Care services provide basic curative, corrective and rehabilitative services to render the patient orally fit, control all active diseases and restore acceptable oral function. It is the first line of oral health care, delivering dental education and basic treatment to achieve better oral health.

Services provided include:

- The emergency relief of pain and discomfort and the control of infection of oro-facial origin
- Routine dental check-up
- Dental extractions under local anaesthetic
- Dental scaling and prophylaxis
- Dental fillings
- Simple root canal treatment
- Plastic dentures (Full and partial dentures)
- Chairside Oral Health Education
- Assess complex cases for specialist referrals

Overview of Primary Oral Care Services

Manpower

5 (4 local and 1 expatriate) Senior Dental Officers

39 (22 local and 17 expatriate) Dental Officers

Table 4.1a Number of conservative and prosthetic procedures done in the Primary Oral Care Division (2013)

Age group	Primary care attendance	CONSERVATIVE							PROSTHETIC									
		Amalgam		Tooth-coloured		Dressing		Recontour-ing of restoration (patient)	Procedure (patient)	Full Denture	Partial Denture	Immediate	Interim	Metal-based partial denture (no of units)	Repairs	Relines	Rebase	Addition
		No. of teeth	surfaces	No. of teeth	surfaces	No. of teeth	surfaces											
Brunei-Muara																		
0-5	77	4	9	15	20	4	4	0	1	0	0	0	0	0	0	0	0	0
6-12	210	5	7	25	42	15	15	0	0	0	0	0	0	0	0	0	0	4
13-19	2,616	482	680	945	1,324	326	413	1	35	1	5	2	0	0	3	0	0	5
20-55	25,056	4,007	6,225	9,122	13,573	2,405	3,270	44	1,127	130	469	25	16	5	133	4	2	23
>55	4,170	273	496	1,365	2,073	178	228	45	1,048	324	235	2	23	6	191	6	2	20
Belait																		
0-5	66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-12	165	6	10	21	24	18	15	9	12	0	0	0	0	0	0	0	0	0
13-19	985	67	100	314	455	147	184	0	12	0	7	2	0	0	2	0	0	5
20-55	7,153	335	528	2,274	3,516	920	1,168	0	364	34	83	12	0	0	79	12	1	12
>55	2,265	46	84	513	774	111	130	0	583	134	115	3	0	0	140	15	1	17
Tutong																		
0-5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-12	22	0	0	13	23	0	0	0	0	0	0	0	0	0	0	0	0	0
13-19	704	74	113	194	226	22	26	0	14	5	7	0	0	0	2	0	0	0
20-55	5,363	417	653	1,620	2,076	184	200	9	244	28	92	2	7	1	18	0	0	3
>55	1,222	37	53	309	368	8	8	15	240	48	61	2	11	0	20	0	0	2
Temburong																		
0-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-12	13	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
13-19	157	18	30	46	61	28	34	0	0	0	0	0	0	0	0	0	0	0
20-55	1,516	214	346	393	579	119	159	1	6	1	5	0	0	0	1	0	0	0
>55	347	22	30	47	66	14	20	0	15	1	2	0	1	0	2	0	0	0
All combined	52,109	6,008	9,365	17,217	25,201	4,499	5,874	124	3,701	706	1,081	50	58	12	591	37	6	91

Table 4.1b Number of oral surgical procedures done in the Primary Oral Care Division (2013)

Age group	ORAL SURGERY														ORAL MEDICINE (PT)			
	Infection/ Abscess (Pt)	Others (Pt)	Trauma				LA/TA/SEDATION								Soft Tissue Lesion (Pt)	Hard Tissue Lesion (Pt)	Other Oral Lesion	Medical Condition
			No of Teeth	Hard Tissue (Pt)	Soft Tissue (Pt)	Splinting	Patients	Minor Oral Surgery				3 rd Molar	Other Teeth					
								No of teeth extracted										
								Non-surgical		Surgical (permanent)								
D	P	D	P	p	n	p	n											
Brunei-Muara																		
0-5	59	1	1	1	1	0	6	6	0	5	0	0	0	0	0	19	0	
6-12	101	11	0	0	0	0	70	10	1	62	6	0	0	0	0	42	0	
13-19	165	78	0	1	0	1	593	26	2	607	47	0	2	2	1	70	0	
20-55	1,475	340	1	11	5	0	7,738	0	0	8,401	644	9	7	15	7	794	21	
>55	153	69	1	1	1	0	1,766	0	0	2,102	167	0	1	0	0	152	1	
Belait																		
0-5	30	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	5	
6-12	64	4	0	0	1	0	7	9	0	3	0	0	0	0	0	0	34	
13-19	67	3	0	0	0	0	106	4	0	121	8	0	3	0	0	0	37	
20-55	583	16	0	2	2	3	1,332	0	0	1,447	6	4	10	2	3	0	502	
>55	106	3	1	1	0	0	448	0	0	528	0	0	3	0	0	1	59	
Tutong																		
0-5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6-12	6	2	0	0	0	0	7	1	0	5	1	0	0	0	0	0	0	
13-19	35	14	0	0	0	0	170	5	0	84	8	0	0	0	0	0	0	
20-55	243	75	5	0	0	0	1,907	0	0	1,375	81	0	0	0	3	0	0	
>55	32	8	0	0	0	0	572	0	0	437	41	0	0	0	0	0	0	
Temburong																		
0-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6-12	1	10	0	0	0	0	4	1	0	3	0	0	0	0	0	0	0	
13-19	0	68	0	0	0	0	44	0	0	43	0	0	1	0	0	0	0	
20-55	0	607	0	0	0	0	494	0	0	520	0	0	1	0	0	0	0	
>55	1	200	0	0	0	0	184	0	0	199	0	0	3	0	0	0	0	
All combined	3,122	1,512	9	17	10	4	15,448	62	3	15,942	1,009	13	31	20	14	1,078	659	

D - Deciduous teeth, P - Permanent teeth, p - pathological, n - non-pathological

Table 4.1c Number of Periodontics and Preventive procedures done in the Primary Oral Care Division (2013)

Age group	PERIODONTICS (NON-SURGICAL)											PREVENTIVE			REFERRAL OF PATIENTS TO:		PATIENT COMPLETION
	OHI/ demonstration	Diet analysis	Review	Scaling & prophylaxis	Root planning (quadrant)	Post RP charting	Removal sutures	Fluoride desensitization	Pocket charting	Infection/ Abscess	Others/Misc.	individual			Dental	Medical	
												Fissure sealant		Fluoride (prevention) Patient			
												Patient	Surfaces				
Brunei-Muara																	
0-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	0
6-12	6	0	0	6	0	0	0	0	0	0	28	0	0	0	33	4	3
13-19	810	5	15	932	2	2	0	5	9	4	68	8	13	13	151	0	388
20-55	6,840	377	113	8,149	2	0	17	79	357	104	420	77	25	102	867	40	2,818
>55	516	6	24	697	3	0	7	13	7	11	87	11	4	18	92	23	250
Belait																	
0-5	7	0	1	0	0	0	0	0	0	0	0	0	0	0	5	0	5
6-12	19	0	0	2	0	0	0	0	0	0	1	0	0	0	18	1	8
13-19	261	0	68	374	0	0	0	0	0	3	4	1	1	0	30	2	186
20-55	1,538	1	154	1,820	0	0	17	52	0	46	21	0	0	2	149	36	874
>55	250	0	18	187	0	0	7	0	0	3	3	0	0	0	24	24	138
Tutong																	
0-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6-12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	1
13-19	168	1	10	219	0	0	0	2	0	1	4	3	3	0	36	1	85
20-55	982	0	46	1,366	0	0	5	30	0	3	6	6	15	2	78	11	481
>55	97	0	3	124	1	1	1	14	0	2	2	1	1	0	5	9	36
Temburong																	
0-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13-19	25	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	5
20-55	223	0	0	223	0	0	4	6	0	0	0	0	0	0	1	0	82
>55	30	0	0	30	0	0	1	1	0	0	0	0	0	0	0	0	3
All combined	11,772	390	452	14,154	8	3	59	202	373	177	644	107	62	137	1,513	152	5,364

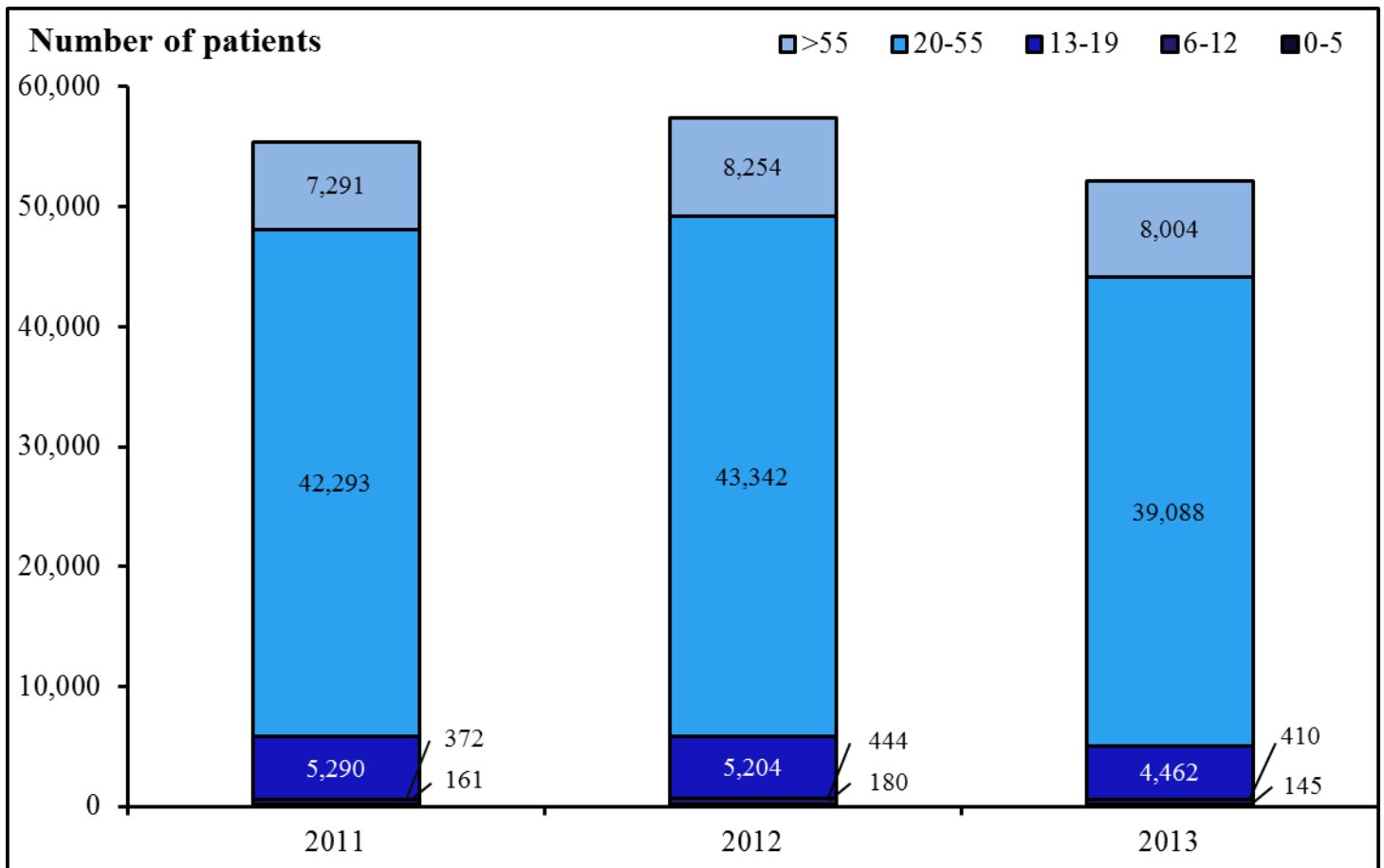


Figure 4.1a Total attendances in Primary Oral Care Division (2011-2013)

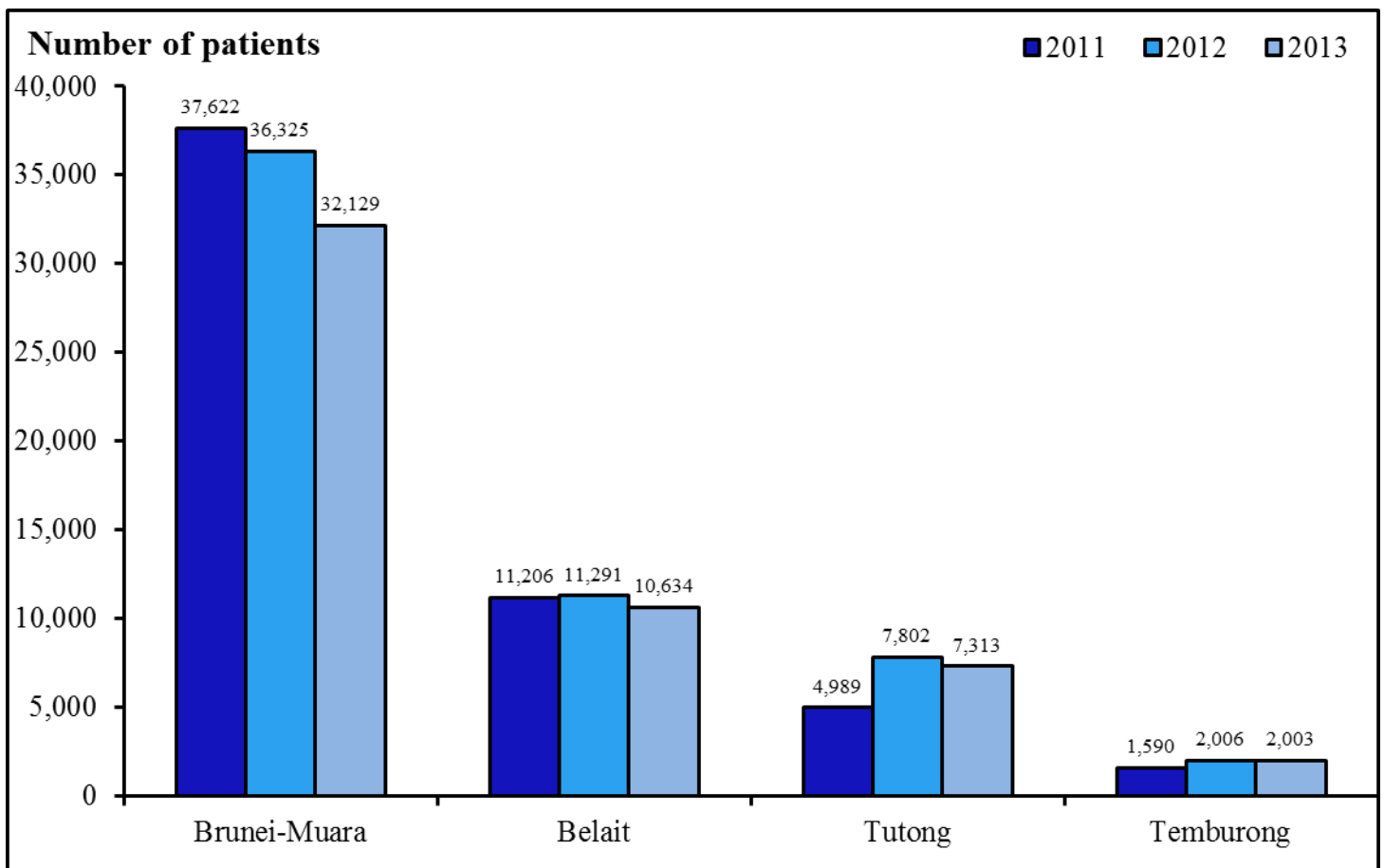


Figure 4.1b Total attendances in Primary Oral Care Division by district (2011-2013)

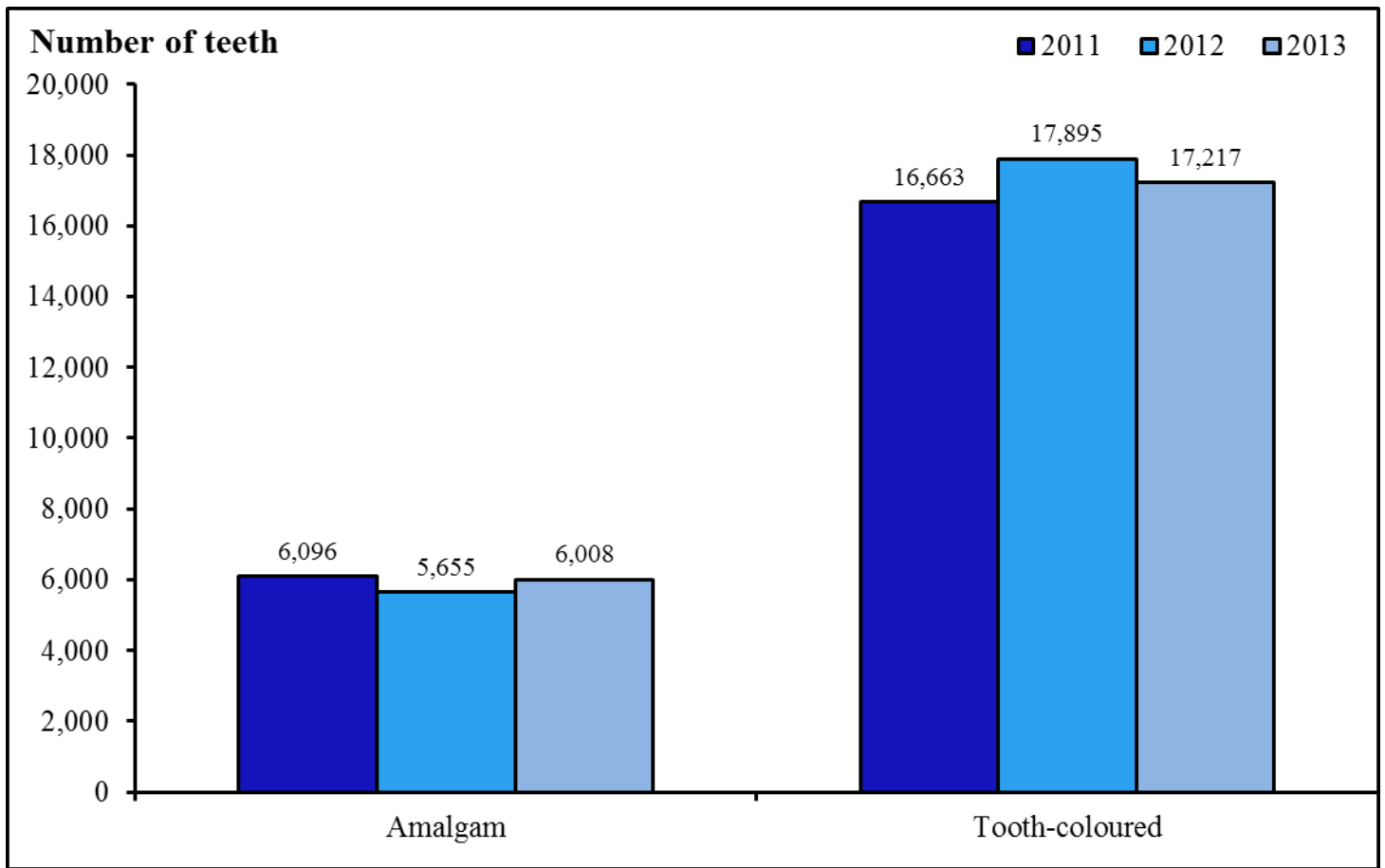


Figure 4.1c Number of teeth permanently filled done by Primary Oral Care Division (2011-2013)

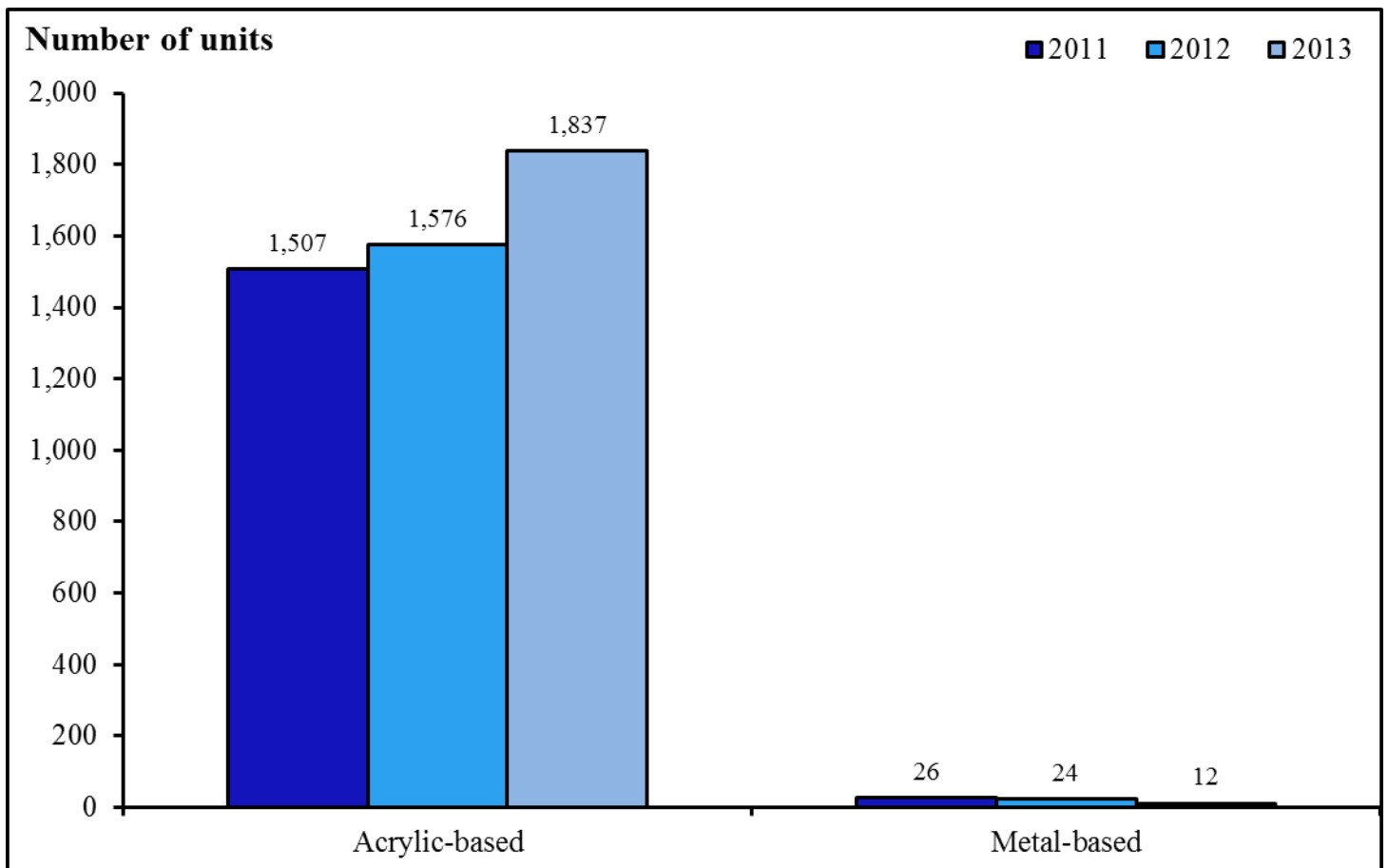


Figure 4.1d Number of acrylic and metal based dentures issued by Primary Oral Care Division (2011-2013)

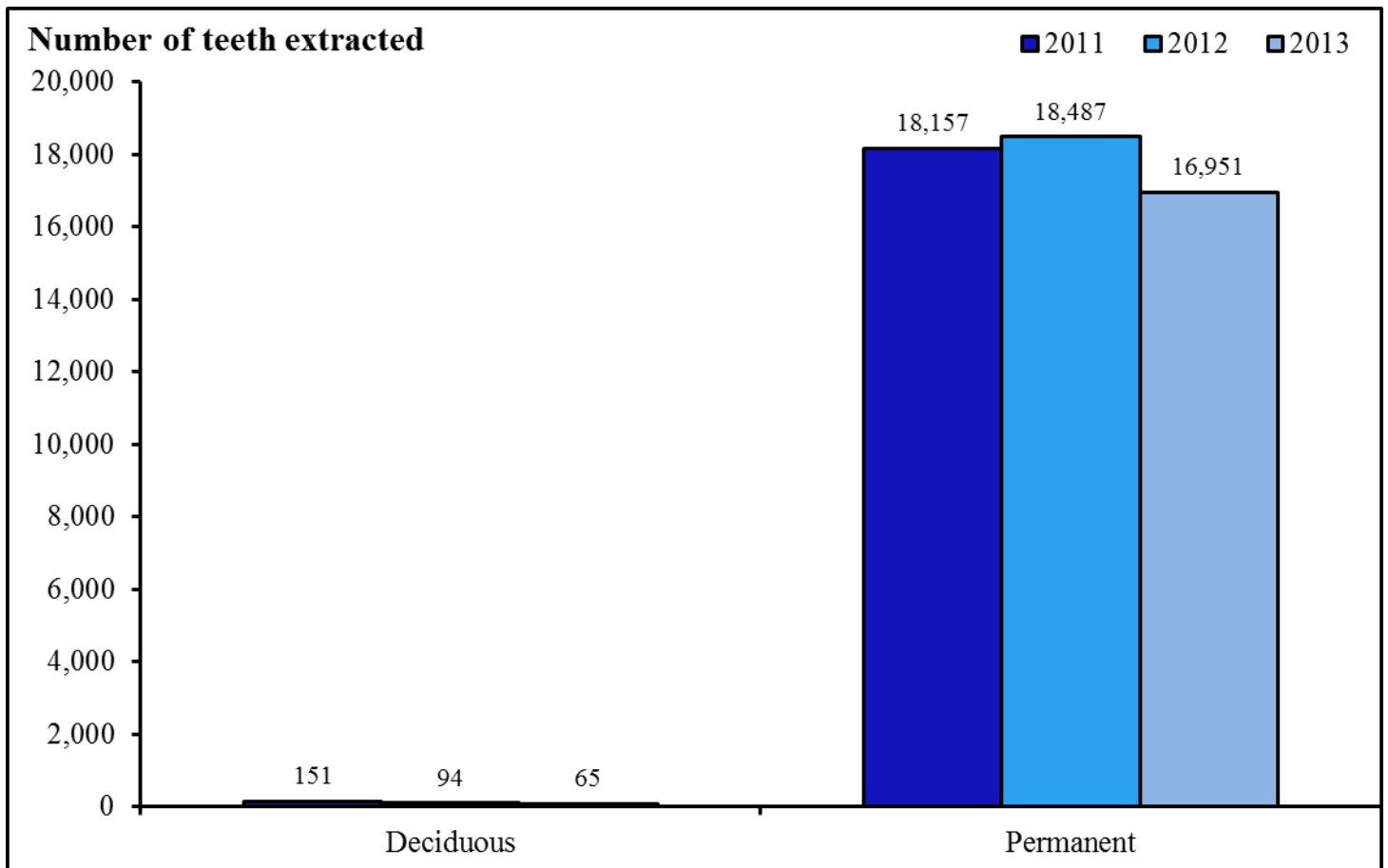


Figure 4.1e Number of non-surgical teeth extraction done by Primary Oral Care Division (2011-2013)

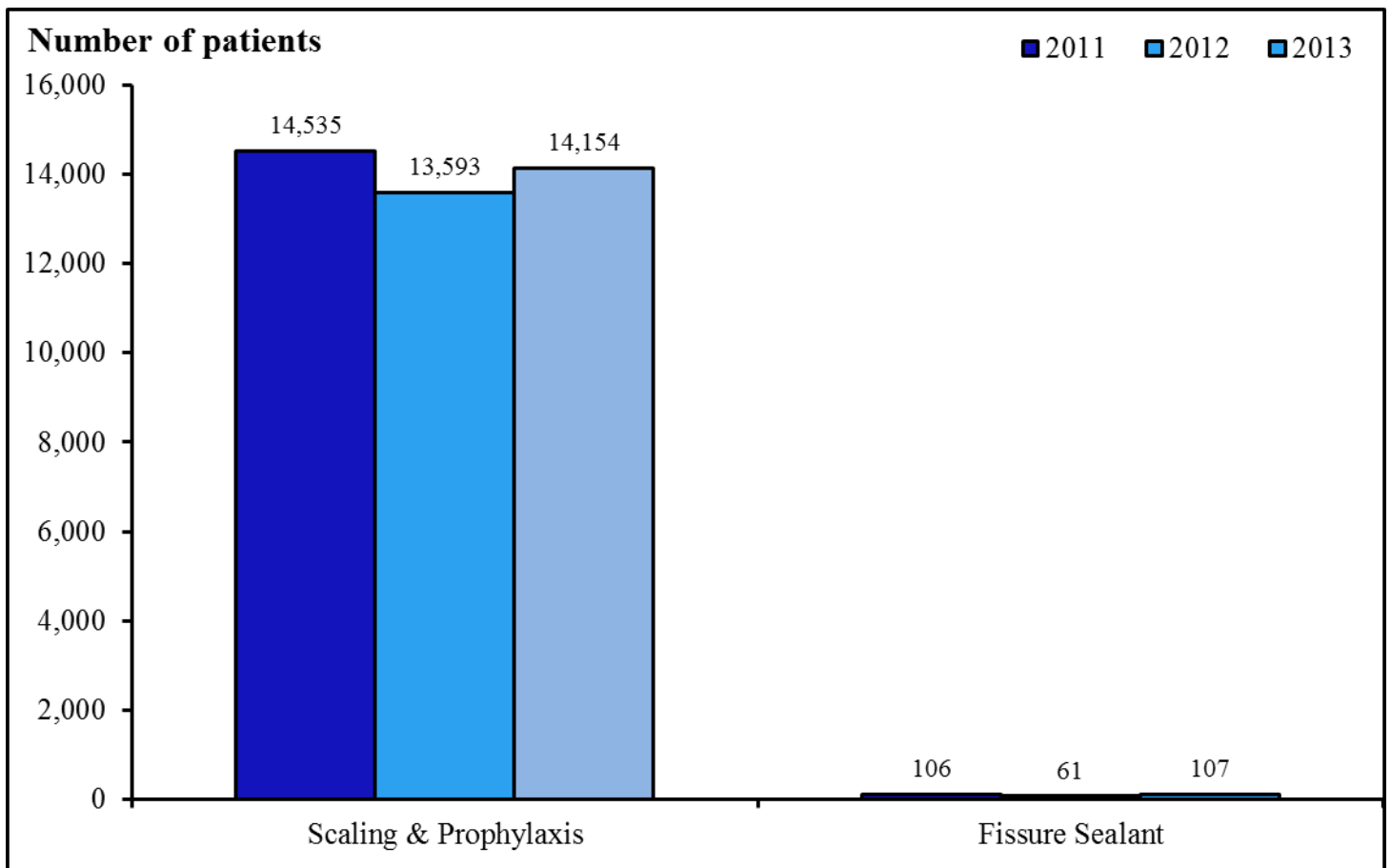


Figure 4.1f Number of scaling and fissure sealant done by Primary Oral Care Division (2011-2013)

ENDODONTICS

The aim of endodontic treatment is to preserve functional teeth without prejudice to the patient's health. The Endodontic Unit deals with treatment involving the roots of teeth.

Services provided include, but is not limited to:

- The differential diagnosis and treatment of oro-facial pain of pulpal and periradicular origin
- Prevention of pulp disease and vital pulp therapy
- Pulp extirpation and root canal treatment
- Root canal treatment in cases of apical periodontitis
- Root canal retreatment in case of post-treatment apical periodontitis
- Surgical endodontics
- Bleaching of endodontically treated teeth
- Treatment procedures related to coronal restoration by means of a core and/or post involving the root canal space

Overview of Endodontic Specialty Services

Manpower

2 (1 local and 1 expatriate) Specialist

1 (expatriate) Senior Dental Officer

The Endodontic Unit is based at the National Dental Centre, Brunei-Muara and accepts referrals from government and private dental clinics throughout Brunei Darussalam.

Table 4.2.1a Number of patients and treatment done in the Endodontic Unit (2013)

Age group	ENDODONTICS (includes pulpotomy)			FIXED PROSTHODONTICS											
	Procedures (Patient)	Teeth		Procedures (Patient)	Recementation of crowns/bridge (units)	Temporary crowns/ Bridge (units)	Posts (units)	Crown				Total Units Issued		Bridge	
		New	Repeat					Anterior		Posterior		New	Repeat	Bridge	Units
								FPC	PBC	PBC	FPC				
6-12	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
13-19	104	31	68	3	0	1	0	0	0	0	1	1	0	0	0
20-55	575	170	402	97	9	60	19	3	9	31	5	43	6	3	8
>55	90	41	59	20	8	19	8	1	4	20	0	15	0	1	2
All combined	770	243	529	120	17	80	27	4	13	51	6	59	6	4	10

Table 4.2.1b Number of patients and treatment done in the Endodontic Unit (2013)

Age group	PROSTHETIC							CONSERVATIVE			ORAL SURGERY	PERIODONTICS
	Acrylic-based (number of units issued)			Metal-based	Repairs	Relines		Total number of Teeth & Surfaces Permanently Filled			No. of Teeth Extracted (Surgical)	No. of Scaling & Prophylaxis (Non-Surgical)
	Full denture	Partial denture	Immediate			1 st treatment	Retreatment	Teeth	Surfaces			
									New	Repeat		
6-12	0	0	0	0	0	0	0	0	0	1		
13-19	0	0	0	0	0	0	0	33	87	153	0	60
20-55	3	9	3	10	2	4	0	467	141	400	5	300
>55	4	4	0	7	6	0	0	33	113	103	4	104
All combined	7	13	3	17	8	4	0	533	341	656	10	464

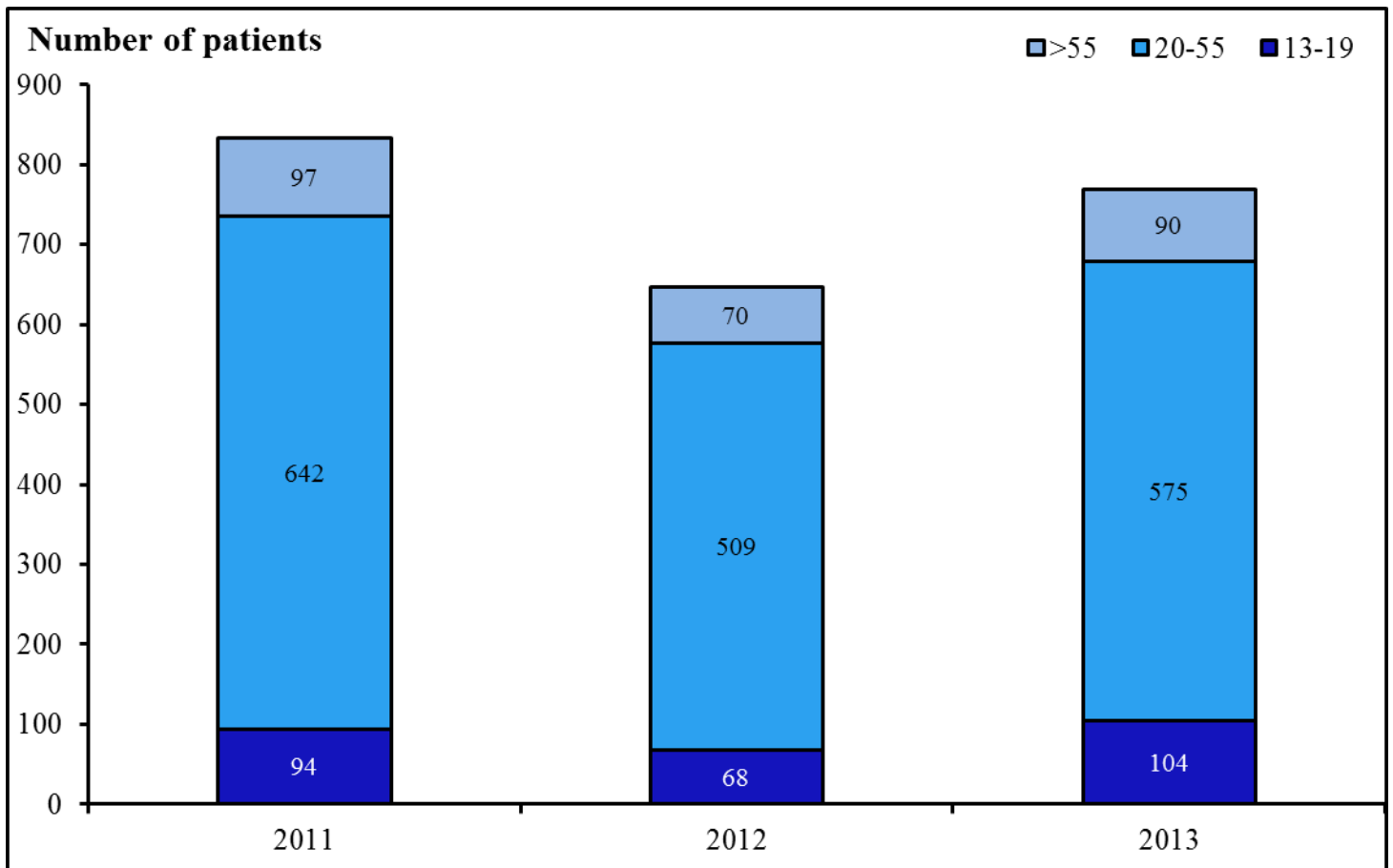


Figure 4.2.1a Total attendances in Endodontic Unit (2011-2013)

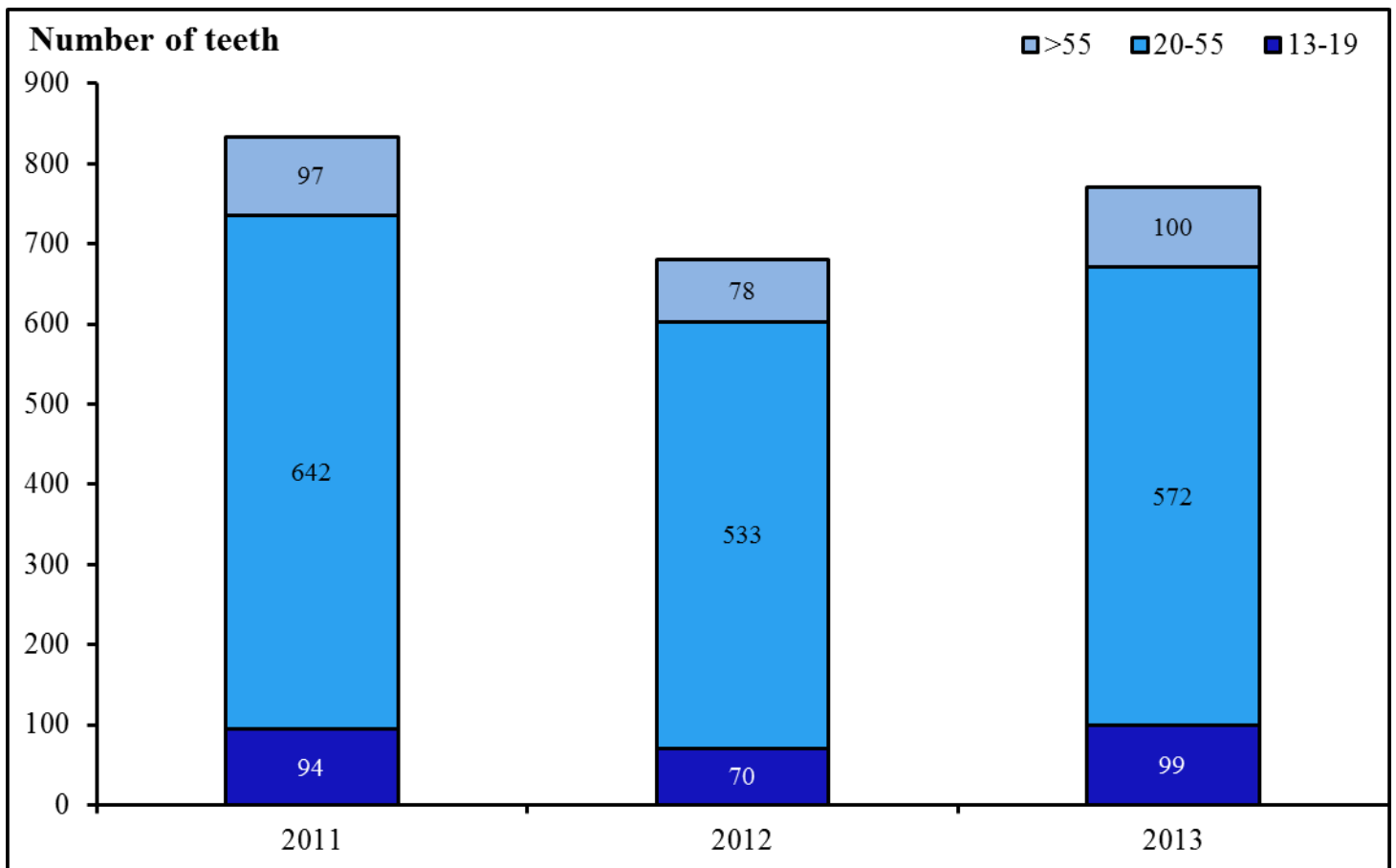


Figure 4.2.1b Number of endodontic treatment done by Endodontic Unit (2011-2013)

ORAL SURGERY

Oral surgery is a branch of medicine, dealing with diagnostics and the surgical treatment of oral diseases.

ORGANISATION

The Specialist Dental Clinic (SDC) was established on 1st December 2000. It is housed on the 3rd floor of the Specialist Block at RIPAS Hospital. It is equipped with 6 dental chairs and operates as a specialist referral clinic. It accepts referrals from dental and medical practitioners from the public sector, private sector and armed services from throughout Brunei Darussalam and in-patients from within the hospital.

Since its inception, the department has attained a reputation as the leading tertiary referral center for hospital dentistry in Brunei. This has been further reinforced by the recognition accorded to it by the Royal College of Surgeons of England as a recognised center for Membership of the Faculty of Dental Surgery (MFDS) training in May 2004. This has been made possible through the efforts and commitment of the pioneer staff towards providing a quality service and a high standard of hospital dentistry.

SERVICES

Services provided include:

- Specialist services in the disciplines of oral surgery, periodontology, oral medicine, and implantology
- Dental management of the medically compromised including children
- Dental management of in-patients
- Hospital Dentistry requiring general anaesthetic and sedation facilities
- Support services for the Oral & Maxillo-facial and Plastic Surgical Unit in the areas of maxillo-facial trauma, cleft lip and palate management and orthognathic surgery
- Support services for the Brunei Cancer Centre for patients undergoing radiotherapy and chemotherapy
- Support services for patients undergoing open heart surgery
- Emergency dental services for hospital personnel

Oral Surgery Procedures performed include:

- Surgical extractions
- Wisdom teeth removal
- Management of complications due to tooth extractions including OAF closure
- Management of dento-alveolar trauma injuries
- Surgical exposure of un-erupted teeth
- Removal of retained roots
- Bone grafting implant sites
- Management of cystic lesions
- Management of acute facial infections
- Biopsy of soft tissue lesions
- Pre-prosthetic surgery e.g. frenectomy, alveolectomy & alveoplasty

Achievements

Since 2001, Day Care Surgery has been introduced for all minor oral surgical procedures. This has made it more convenient for patients, lowered inpatient hospital costs and also freed hospital beds.

MANPOWER

	2000	2011	2012	2013
Specialist	1	1	4* (1 LDP/1 NPL)	4* (1 LDP/1 NPL)
Senior Dental Officer	1	3	0	0
Dental Officer	0	1	1	1
Hygienist	1	0	0	0
Senior Dental Assistant	1	3	3	3
Dental Assistant	3	4	4	4
Amah	1	2	2	2
Attendant	0	1	1	1
Clerical Assistant	0	1	1	1
Receptionist	0	1	1	1
Total	8	17	17	17

Table 4.2.2a Number of patients and types of treatment in the Oral Surgery Unit for the whole state (2013)

Month	Patient Attendance			ORAL SURGERY PROCEDURES																	
				Soft Tissue							Hard Tissue										
	New Patients (1st Visit)	Review (Repeat Visit)	Total Attendances	Incision + Drainage	Excision Biopsy	Incision Biopsy	Soft tissue excision	Frenectomy	Gingivectomy	Total	Enucleation + Apicectomy	Apicectomy	Alveolectomy	Alveoplasty	Exploration + Curettage	Bone excision	Enucleation	Marsupialisation	Surgical Exposure	Coronectomy	Total
January	252	342	594	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	2
February	235	337	572	1	1	1	0	0	0	3	0	0	0	0	0	0	1	0	0	0	1
March	257	393	650	0	0	0	1	1	0	2	0	1	0	0	1	0	0	0	2	0	4
April	212	406	618	1	1	2	0	0	0	4	0	0	0	0	0	0	1	0	0	0	1
May	190	445	635	0	2	2	1	0	0	5	0	0	0	0	0	0	0	0	0	0	0
June	206	359	565	2	1	0	2	2	2	9	0	1	0	0	0	0	1	1	0	0	3
July	209	365	574	0	2	0	1	0	0	3	0	1	0	1	1	0	2	0	0	0	5
August	184	319	503	2	2	0	1	0	0	5	1	0	0	0	0	0	0	0	1	0	2
September	260	463	723	1	0	3	1	0	0	5	1	1	0	0	1	1	0	0	0	0	4
October	194	414	608	1	2	1	0	0	0	4	0	1	0	0	3	0	0	0	0	0	4
November	225	411	636	1	0	3	0	0	0	4	0	1	0	0	0	0	1	0	2	0	4
December	152	333	485	1	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0
All combined	2,576	4,587	7,163	11	11	12	7	4	2	47	2	6	0	2	6	1	6	1	6	0	30

Table 4.2.2b Number of patients and types of treatment in the Oral Surgery Unit for the whole state (2013)

Month	ORAL SURGERY PROCEDURES																								
	Surgical Removal						Extraction			Dento-alveolar Trauma					Bleeding			Miscellaneous				GA cases	I/V sedation	Case Completion (Discharge)	
	S/R retained roots	S/R Supernumerary	S/R Odontomes	S/R Impacted tooth	S/R 3rd molar	Total	Deciduous	Permanent	Total	Composite splint	Arch Bar Splint	Eyelet splint	Pulpectomy	L / W closure	Total	Bleeding socket arrest	Gingival bleed arrest	Total	Scaling	Sub-gingival scaling	TMJ Disorder				SM Impression
January	2	0	1	8	64	75	23	226	249	0	0	0	0	0	0	0	0	0	12	16	23				0
February	11	0	0	16	67	94	31	178	209	0	0	0	0	0	0	0	0	0	23	8	15	0	25	0	65
March	1	2	1	6	89	99	4	461	465	1	0	0	1	0	2	0	0	0	15	3	16	0	23	0	97
April	14	1	0	7	78	100	2	222	224	0	0	0	0	0	0	0	0	0	40	14	23	0	19	0	62
May	9	0	1	3	94	107	2	238	240	0	0	0	0	0	0	0	0	0	21	6	33	0	31	0	66
June	7	3	0	7	72	89	5	214	219	1	0	0	0	0	1	1	0	1	21	10	13	0	23	0	63
July	7	0	0	4	86	97	11	196	207	2	0	1	0	0	3	0	0	0	13	6	25	0	22	0	62
August	11	1	1	15	62	90	5	200	205	0	0	0	0	0	0	0	0	0	16	8	21	0	19	0	56
September	22	1	1	2	102	128	11	313	324	0	0	0	0	0	0	0	0	0	18	16	22	0	17	0	81
October	8	2	0	2	81	93	22	257	279	5	0	0	0	0	5	0	0	0	20	3	20	0	21	0	76
November	9	1	0	11	68	89	26	255	281	0	0	0	0	0	0	0	0	0	26	5	20	0	22	0	58
December	7	0	0	3	62	72	32	131	163	0	0	0	0	0	0	0	0	0	17	3	24	0	15	0	58
All combined	108	11	5	84	925	1,133	174	2,891	3,065	9	0	1	1	0	11	1	0	1	242	98	255	0	251	0	808

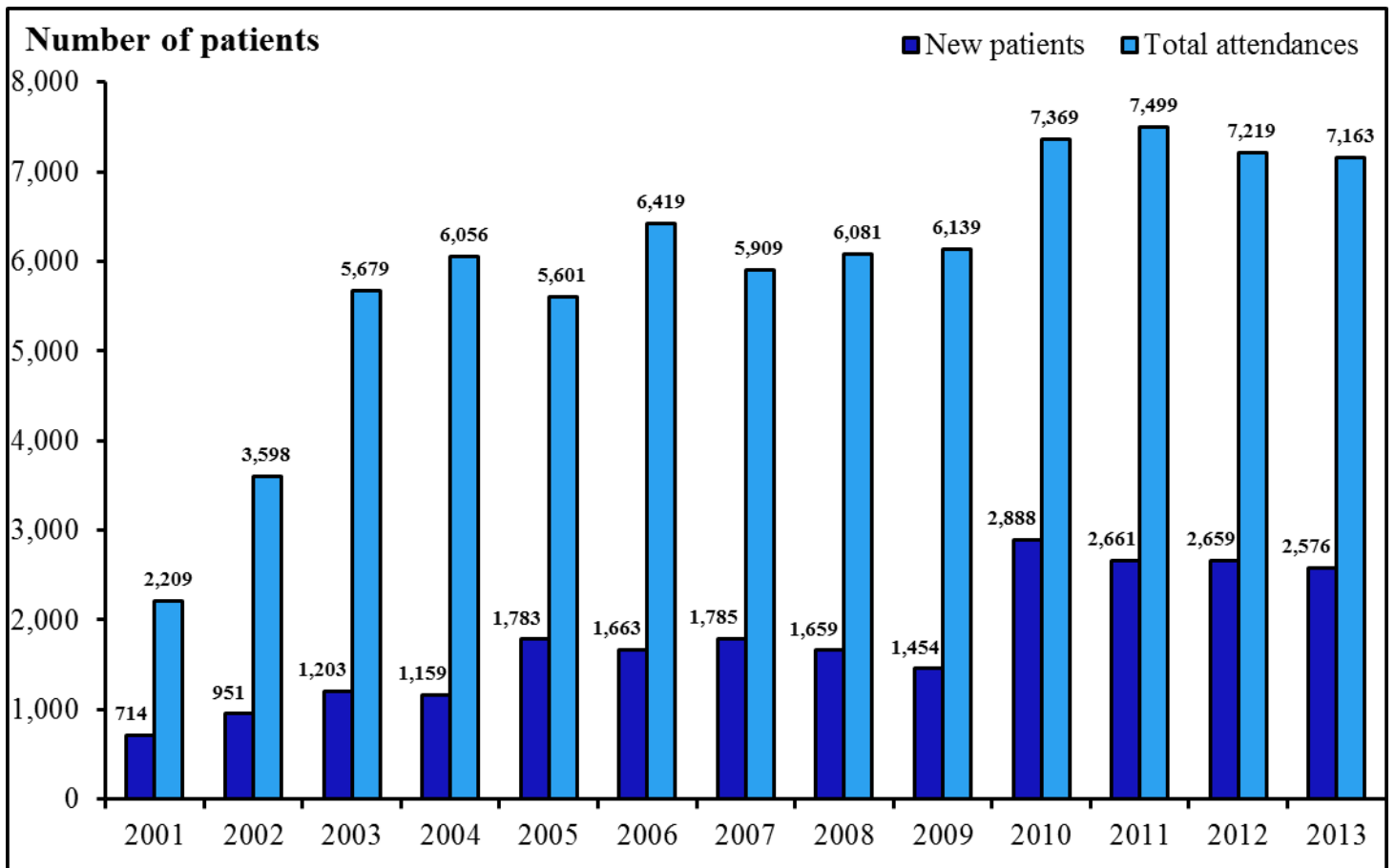


Figure 4.2.2a Annual attendances of Oral Surgery Unit at RIPAS Hospital (2001-2013)

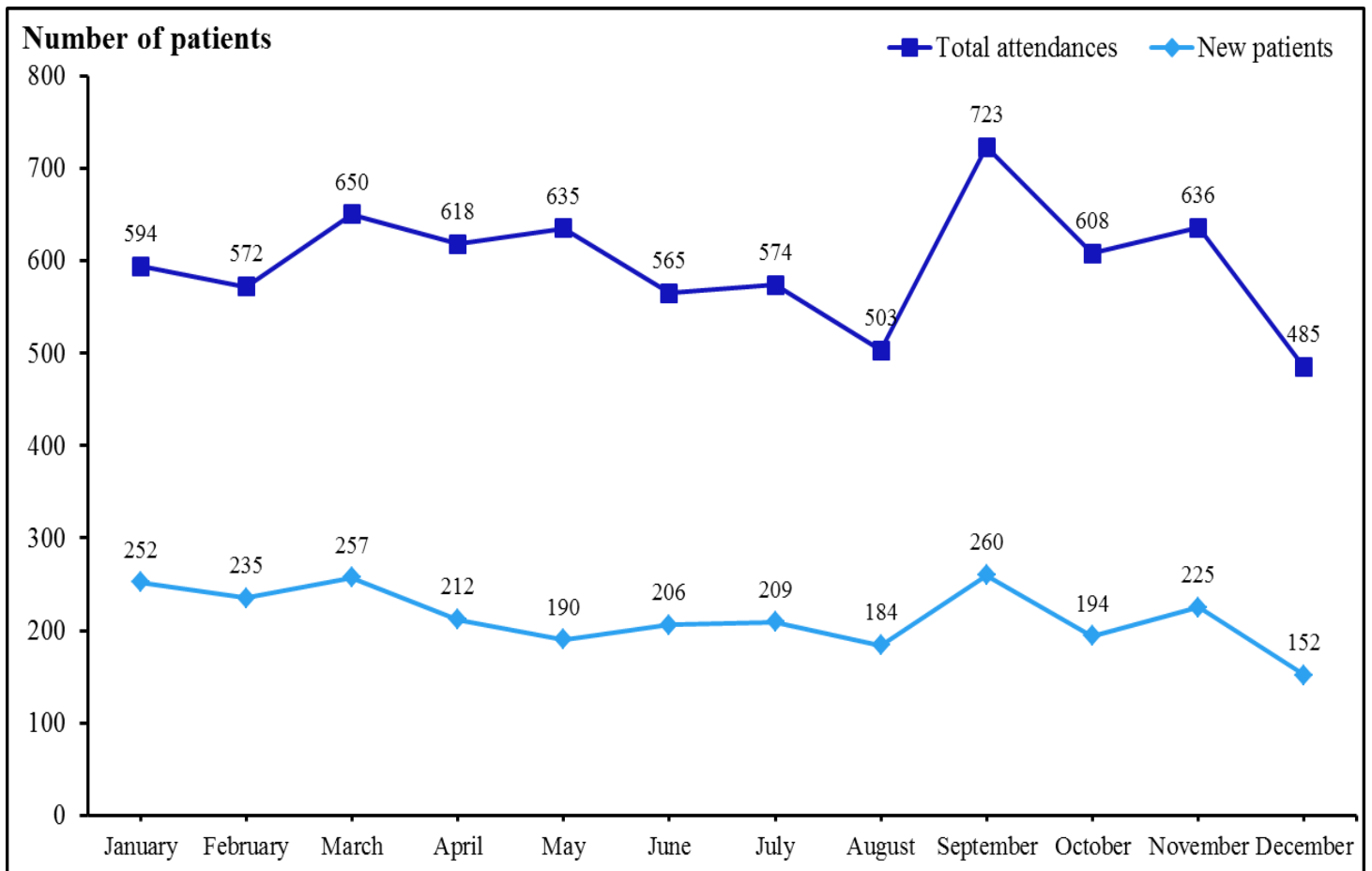


Figure 4.2.2b Number of patients attending Oral Surgery Unit for the whole state by month (2013)

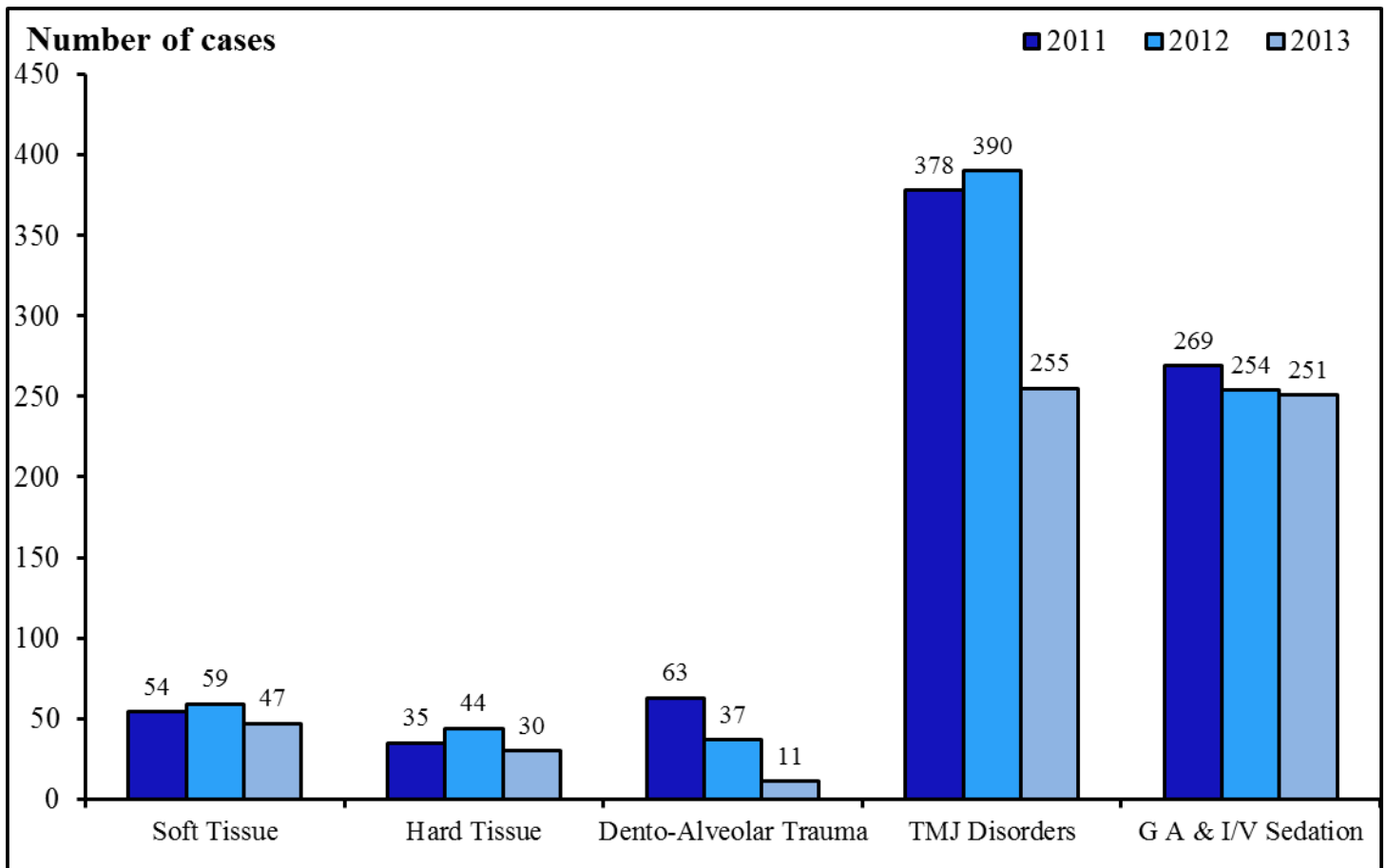


Figure 4.2.2c Surgical procedures done for the whole state (2011-2013)

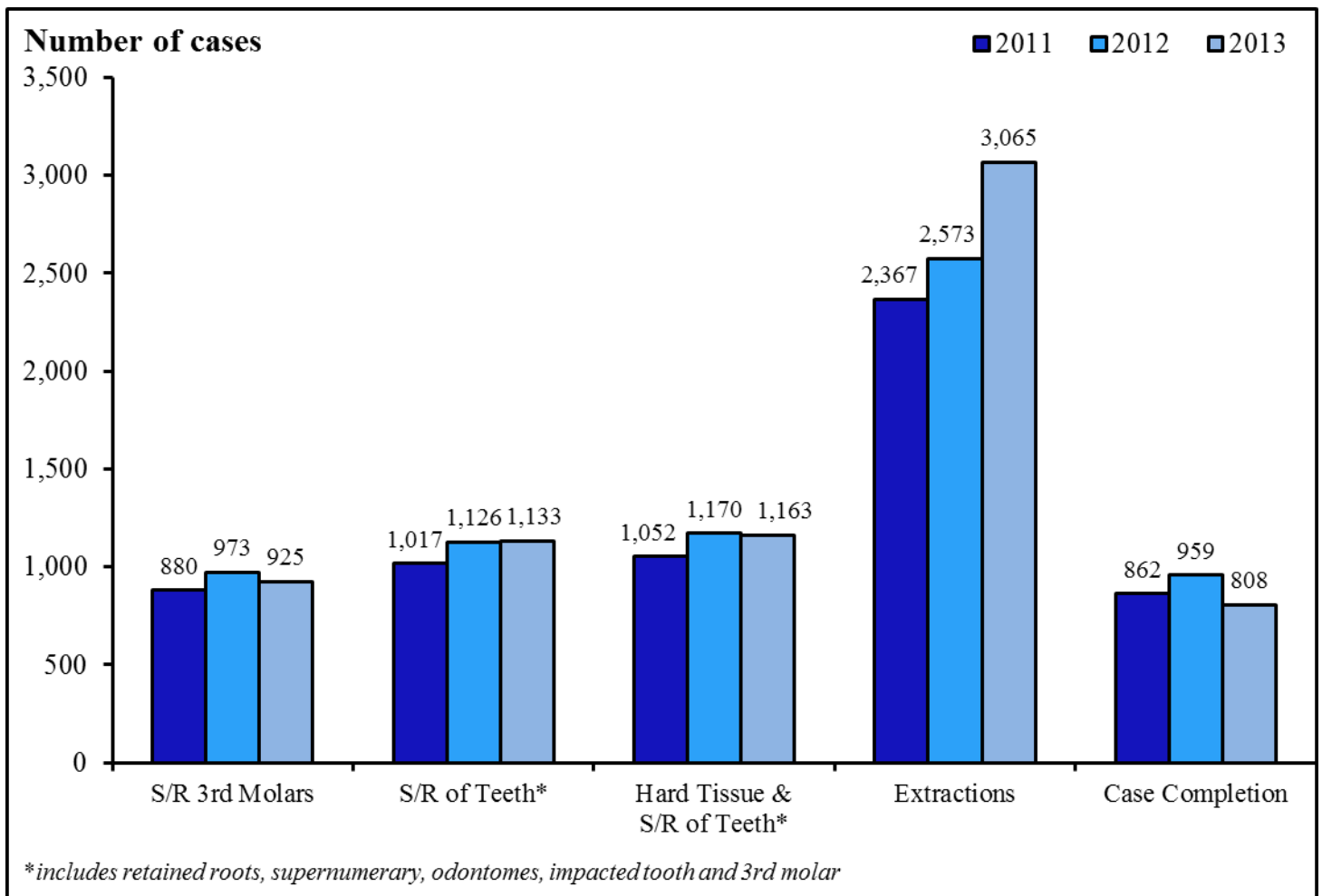


Figure 4.2.2d Surgical procedures done for the whole state (2011-2013)

ORTHODONTICS

Orthodontics is the branch of dentistry that corrects teeth and jaws that are positioned improperly. The benefits of orthodontic treatment include a healthier mouth, a more pleasing appearance, and teeth that are more likely to last a lifetime.

Overview of Orthodontic Specialty Services

Manpower

3 (2 local and 1 expatriate) Specialists

3 (local) Acting Specialists

1 (local) Senior Dental Officer

Distribution of ‘Specialist Orthodontists’ in the districts

Brunei-Muara

5 full-time orthodontists (latest senior dental officer in orthodontics reported in March 2011).

Belait

1 full-time orthodontist

Tutong

1 full-time Senior Dental officer

2 travelling orthodontists (4 days a month i.e. once a week)

Temburong

Travelling services are not currently undertaken at present due to the fact that there are not many ‘orthodontic referrals’ from the district.

Orthodontic Waiting lists

Last updated in May 2014:

Brunei-Muara	-	1,700 (April 2010)
Belait	-	411 (November 2010)
Tutong	-	212 (August 2010)

(dates in brackets is the current stage in the waiting list)

Table 4.2.3a Orthodontic patients ‘Attendance statistics’ for 3 districts (2011-2013)

Districts	Patient attendance ^a			Percentage distribution of patient attendance		
	2011	2012	2013	2011	2012	2013
Brunei-Muara	6,557	7,459	6,495	68.7	70.3	71.8
Belait	2,470	2,286	1,600	25.9	21.6	17.7
Tutong	518	860	945	5.4	8.1	10.5
All combined	9,545	10,605	9,040	100.0	100.0	100.0

^aPatient attendance includes patient seen for any orthodontic procedure or review

Discussion

Total patient attendance has reduced in 2013 compared to 2012 due to:

- Fire incident in early February 2013 affecting Block B (where all orthodontic clinics are). Clinical duties were unable to fully resume till April 2013.
- 3 Acting Specialists (2 in Brunei-Muara and 1 in Belait district) went on 105 days maternity leave.

Table 4.2.3b Patients ‘Failed to Attend’ (FTA) Orthodontic appointments for 3 districts (2011-2013)

Districts	Total number of appointments given			Total number of ‘Failed To Attend’ (FTA)			% of FTAs to number of appointments given		
	2011	2012	2013	2011	2012	2013	2011	2012	2013
Brunei-Muara	7,362	8,435	7,336	805	976	841	10.9	11.6	11.5
Belait	2,554	2,514	1,791	84	229	191	3.3	9.1	10.7
Tutong	557	928	1,035	39	68	90	7.0	7.3	8.7
All combined	10,473	11,877	10,162	928	1,273	1,122	8.9	10.7	11.0

Discussion

The percentage of failed appointments has remained consistently within acceptable range over 2012 and 2013.

Table 4.2.3c Orthodontic referrals for 3 districts (2011-2013)

Districts	ORTHODONTIC REFERRALS											
	No orthodontic treatment indicated ^a			Too early for definitive orthodontic treatment			Enter waiting list for fixed appliances treatment			Interceptive treatment ^b		
	2011	2012	2013	2011	2012	2013	2011	2012	2013	2011	2012	2013
Brunei-Muara	72	72	49	33	36	29	413	338	311	77	102	100
Belait	17	4	4	7	5	4	96	117	97	18	4	1
Tutong	6	6	15	8	4	7	46	84	53	7	2	14
All combined	95	82	68	48	45	40	555	539	461	102	108	115

^aNo orthodontic treatment is indicated if patient is found to have (i) very mild irregularity of teeth and is aesthetically pleasing (ii) the risks outweigh the benefit of orthodontic treatment in cases of patients having poor oral hygiene and/or mutilated dentition (multiple missing teeth, teeth with poor prognosis, heavily filled teeth etc)

^brefers to treatment provided to young patients having problems with the development and position of jaws

Table 4.2.3d Orthodontic treatment planning for 3 districts (2011-2013)

Districts	TREATMENT PLANNING					
	Fixed appliance treatment for cleft patients			Patients taken off waiting list for fixed appliances treatment ^c		
	2011	2012	2013	2011	2012	2013
Brunei-Muara	1	12	7	184	336	186
Belait	0	0	1	9	12	34
Tutong	0	0	0	16	45	9
All combined	1	12	8	209	393	229

^cfrom the number of patients taken off from the waiting list for fixed appliance treatment, some opt for delaying treatment till after exams/opt to start treatment after returning to Brunei for good (if studying abroad) or decide not to have treatment as they are not keen to have orthognathic surgery etc.

Discussion

The reduction observed in the number of patients requiring (1) No Orthodontic Treatment, (2) Too Early for Definitive Orthodontic Treatment, (3) Entering Waiting List for Fixed Appliance Treatment, and (4) Taken off Waiting List for Fixed Appliances, was proportional to the reduction in the overall patient attendance for the year. This could be attributed to the renovation works in Block B following the fire incident (early February 2013) which reduced the number of clinical sessions for all orthodontists. In addition to this, 3 orthodontists were on maternity leave (105 days). In general, the number of patients entering the waiting list still far outweighs the number taken off waiting list by an average of 200 patients.

Table 4.2.3e Summary of various orthodontic procedures for 3 districts (2011-2013)

Districts	Number of appliances fitted ^a @per arch/per unit			Number of appliance adjustments ^b @per arch/ per unit			Number of appliance Repairs ^c @per arch/per unit			Debond of fixed appliances ^d @per arch/per unit		
	2011	2012	2013	2011	2012	2013	2011	2012	2013	2011	2012	2013
Brunei-Muara	616	986	928	7,913	8,643	7,664	446	479	353	216	371	364
Belait	143	128	163	2,806	3,014	1,682	105	51	20	42	116	139
Tutong	71	111	70	536	826	1,248	59	45	47	18	24	41
All combined	830	1,225	1,161	11,255	12,483	10,594	610	575	420	276	511	544

^afitting of orthodontic appliances such as fixed, removable, functional appliances and others

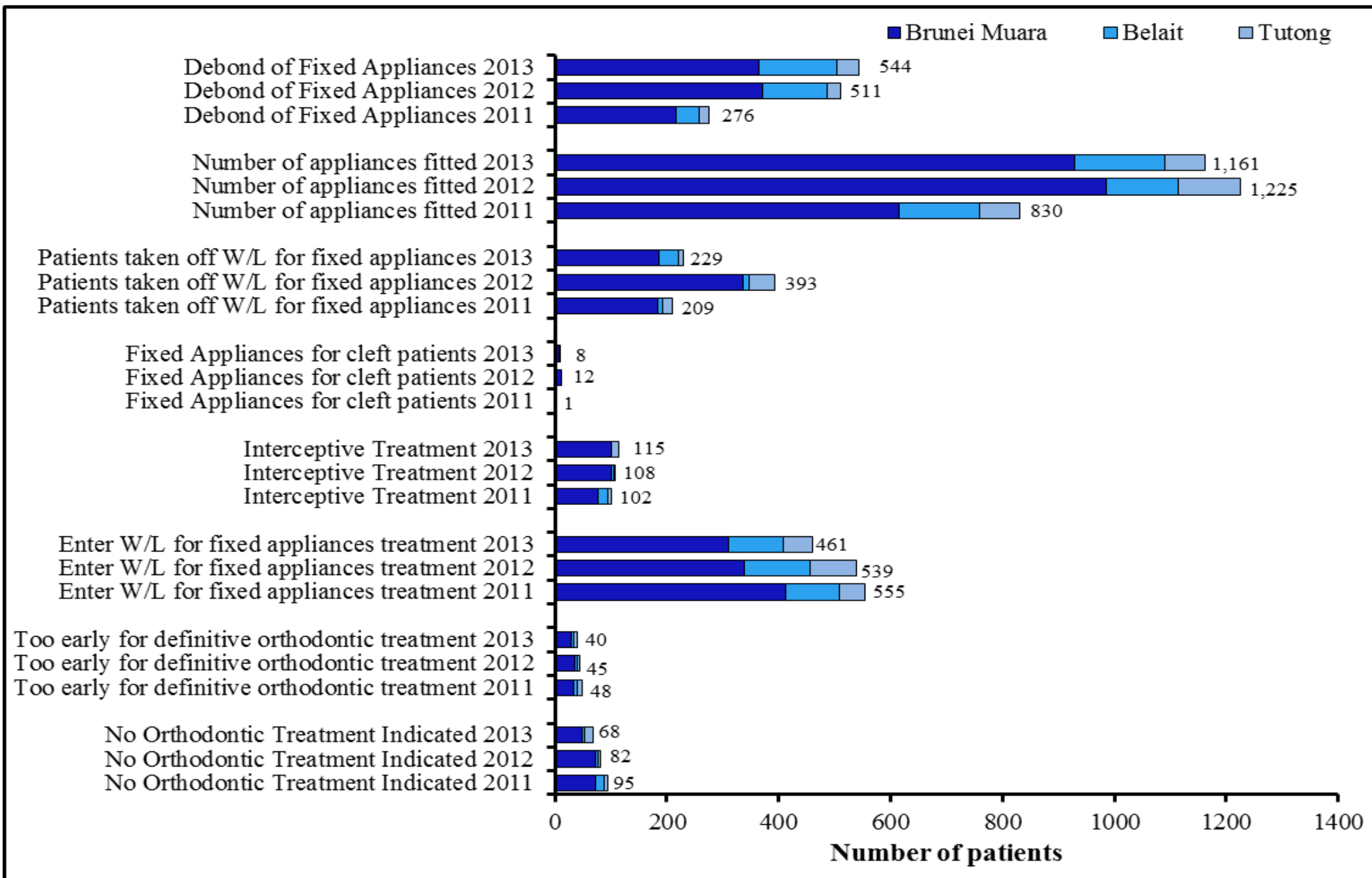
^bincludes adjustments of fixed, removable, functional appliances and others

^cincludes repairs of broken orthodontic appliances such as fixed, removable, functional appliances and others

^dDebond of fixed appliances by arch– removal of fixed appliances from upper/ lower/both arches where each arch is recorded as ‘a unit’

Discussion

In Brunei-Muara, in spite of the reduced clinical sessions, the service still managed to maintain the levels from previous years with regard to the number of appliances issued, adjustments and repairs. Debond of fixed appliances in all districts generally increased. This is in line with the cyclical nature of orthodontic treatment. We expect a reduction in debonds but an increase in number of appliances fitted in 2014.



4.2.3 Comparative summary of orthodontic patient data for 2011-2013

PAEDODONTICS

Paediatric Dentistry specialises in provision of oral health care (preventive- and treatment-oriented) to children that are referred to the unit and the management of children with special needs.

Services provided include the dental management of:

- Children with acute dental pain and/or intraoral infections and swellings requiring immediate in-patient management
- Children with medical, physical, emotional, behavioural and intellectual/learning challenges
- Children with oro-dental trauma
- Children requiring complex dental treatment such as pulpotomy, root canal treatment, veneers, crowns and bridges and the management of rampant caries
- Children with genetic and developmental disorders of teeth e.g.
 - Hypodontia or missing teeth
 - Tooth structure anomalies
 - Supernumerary teeth
- Children with delayed eruption of teeth
- Children requiring minor oral surgical procedures
- Children requiring multiple extractions or comprehensive treatment under general anaesthesia
- Adolescents and young adults with special needs requiring comprehensive dental treatment under general anaesthesia
- Support primary oral care provided by dental officers and dental nurses/therapists

Overview of Paediatric Dental Specialty Services

Manpower

2 (local) Consultants

1 (expatriate) Specialist

2 (local) Acting Specialists

1 (expatriate) Senior Dental Officer

5 (local) Paediatric Dental Nurse

Distribution of 'Paediatric Dental Specialist' in the districts

Brunei-Muara

- National Dental Centre- 1 Paediatric Dental Consultant, 1 Acting Specialist, 1 Senior Dental Officer and 1 Dental Nurse (moved to CDC in April 2013)
- RIPAS Hospital- 1 Paediatric Dental Consultant, 1 Specialist and 1 Dental Nurse
- Child Development Centre, Kiarong- 1 Paediatric Dental Consultant (travelling 2 days a month) and 2 Dental Nurses

Belait

1 Acting Dental Specialist (2 days a week) and 1 Dental Nurse (3 days a week).

Tutong

1 Paediatric Senior Dental Officer (travelling services 2 days a week) and 1 Dental Nurse.

Temburong

Services provided by Paediatric Dental Nurse- once a month. Cases are referred to Paediatric Dental Specialist in Hospital RIPAS when needed.

Table 4.2.4a Number of patients and preventive procedures done in the Paedodontics Unit (2013)

Age group	Attendances		Patient Consultation		PREVENTIVE						
	1st	Repeat	Self	Referred	PV Attendances	OHI	Scaling & Prophylaxis	Diet Counseling	Fluoride Varnish	Fissure Sealant	
										Patient	Teeth
Brunei-Muara											
0-5	462	766	26	178	830	762	541	539	118	163	552
6-12	747	1,238	69	237	1,350	1,267	941	980	199	405	1,912
13-19	462	571	61	180	592	594	390	497	107	163	966
Belait											
0-5	77	161	0	44	226	226	139	204	64	31	81
6-12	158	250	1	38	405	401	302	361	82	34	86
13-19	28	60	0	9	87	86	58	71	8	4	13
Tutong											
0-5	37	40	5	15	63	59	25	39	7	16	56
6-12	85	96	10	20	170	148	79	96	5	71	342
13-19	33	56	3	4	80	68	54	24	10	44	215
Temburong											
0-5	1	0	0	0	1	1	1	0	0	0	0
6-12	3	0	0	0	3	3	3	0	0	1	1
13-19	2	0	0	0	2	2	2	0	0	0	0
All combined	2,095	3,238	175	725	3,809	3,617	2,535	2,811	600	932	4,224

Table 4.2.4b Number of restorative procedures done in the Paedodontics Unit (2013)

Age group	CONSERVATIVE										ENDODONTICS				PROS- THETIC	
	Amalgam		Tooth-coloured				Teeth Permanently Filled		Dressing		Procedure (Patient)	Anterior Completion (Teeth)		Posterior Completion (Teeth)		Completion (Patients)
			GIC		Composite							D	P	D	P	
Teeth	Surfaces	Teeth	Surfaces	Teeth	Surfaces	Teeth	Surfaces	Teeth	Surfaces	D		P	D	P		
Brunei-Muara																
0-5	5	8	398	500	61	85	464	593	53	63	8	1	2	1	0	0
6-12	5	7	786	1,154	151	220	942	1,381	81	98	27	1	7	7	0	3
13-19	11	22	343	464	230	360	584	846	80	84	62	0	2	1	4	6
Belait																
0-5	2	3	90	126	0	0	92	129	8	8	3	0	0	0	0	0
6-12	2	2	105	189	17	36	124	227	22	23	8	0	1	0	1	1
13-19	0	0	36	56	15	25	51	81	81	13	7	0	0	0	2	2
Tutong																
0-5	0	0	73	90	0	0	73	90	2	2	0	0	0	0	0	0
6-12	0	0	173	274	19	31	192	305	5	5	3	0	1	1	0	3
13-19	0	0	41	53	15	27	56	80	4	4	2	0	0	0	0	0
Temburong																
0-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All combined	25	42	2,045	2,906	508	784	2,578	3,732	336	300	120	2	13	10	7	15

D - Deciduous teeth, P - Permanent teeth

Table 4.2.4c Number of oral surgical procedures done in the Paedodontics Unit (2013)

Age group	ORAL SURGERY															REFERRAL PATIENTS TO:		CASE COMPLETION	
	Infection/Abscess (Pt)	TRAUMA				LA/TA/SEDATION				GA				Oral Mucosal Lesions	Other Dental Specialty	Medical			
		No. of Teeth	Hard Tissue (Pt)	Soft Tissue (Pt)	Splinting	Patients	No. of Teeth Extracted				Patients	No. of Teeth Extracted							
							D		P			D					P		
							pathological	non-pathological	pathological	non-pathological		pathological	non-pathological				pathological		non-pathological
Brunei-Muara																			
0-5	109	36	12	12	0	29	26	10	1	0	95	1,195	0	2	0	6	35	8	296
6-12	103	27	10	8	3	241	145	62	75	19	62	578	0	65	0	8	99	6	431
13-19	69	8	4	1	1	163	19	7	117	52	8	13	0	29	0	8	61	1	225
Belait																			
0-5	2	4	1	1	0	17	17	5	2	0	12	107	0	0	0	2	6	6	56
6-12	0	1	0	1	0	61	58	21	0	1	4	30	0	2	0	0	3	7	87
13-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	13
Tutong																			
0-5	1	2	1	1	0	5	4	1	0	0	0	0	0	0	0	0	9	0	35
6-12	3	0	0	1	0	36	36	9	3	2	0	0	0	0	0	2	12	0	72
13-19	2	1	1	0	0	4	4	1	0	0	0	0	0	0	0	3	4	0	29
Temburong																			
0-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
13-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All combined	289	79	29	25	4	556	309	116	198	74	181	1,923	0	128	0	29	230	28	1,247

D - Deciduous teeth, P - Permanent teeth

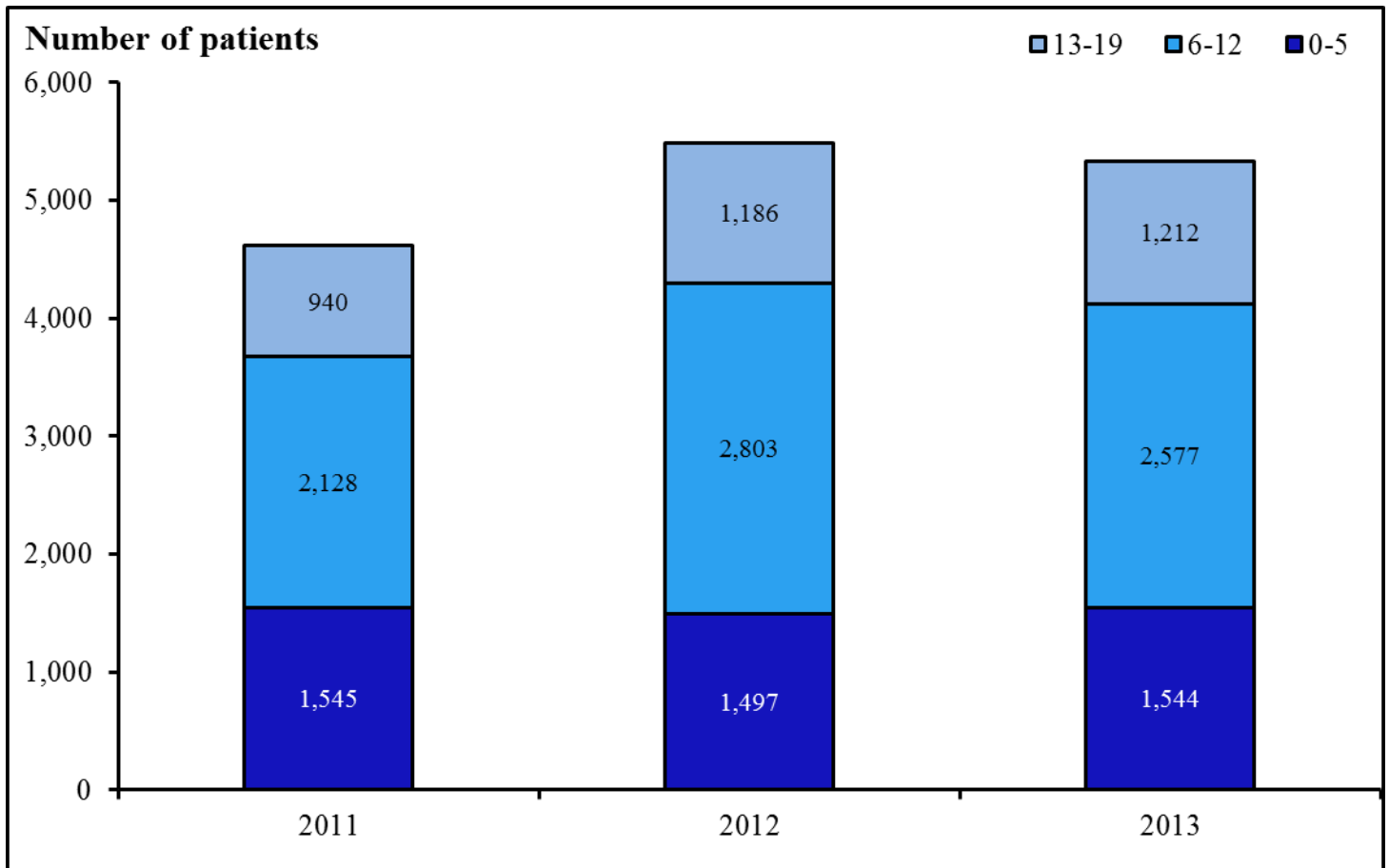


Figure 4.2.4a Total attendances in Paedodontic Unit (2011-2013)

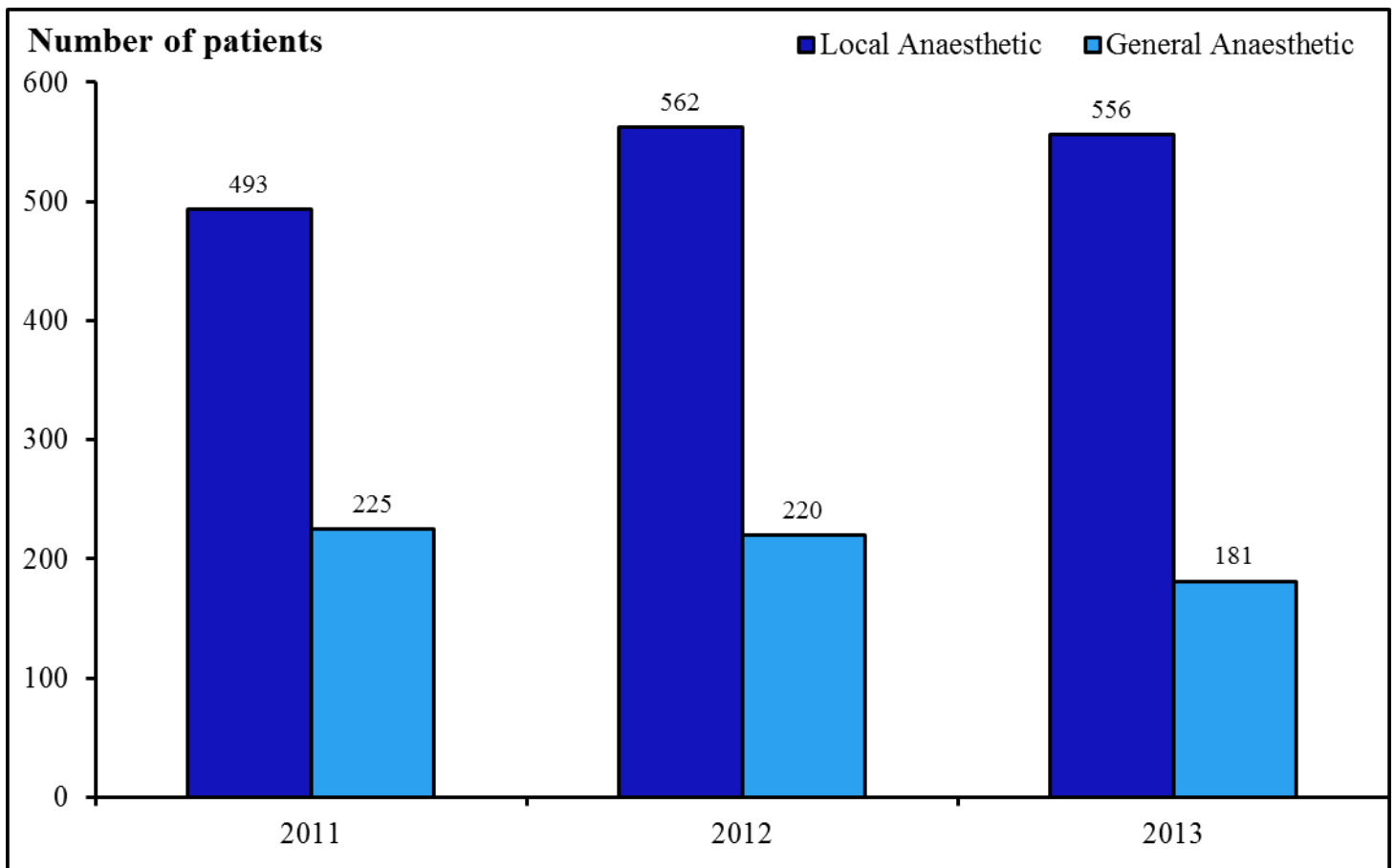


Figure 4.2.4b Number of extractions done under LA/GA by Paedodontic Unit (2011-2013)

PERIODONTICS

Periodontics is the branch of dentistry that is concerned with the management and care of the supporting structures of teeth and its substitutes (including implants).

Services provided include:

- Oral hygiene instructions
- Comprehensive periodontal management and care (which may include ‘non-surgical’ and ‘surgical’ treatment)
- Periodontal management and care of patients with dental implants (if required)

Overview of Periodontic Specialty Services

Manpower

2 (local) Specialist

3 part-time (local) Dental Nurses (Perio/Hygienists)- twice a week

22 part-time (local) Dental Hygienists/Therapists- once a week

Distribution of ‘Specialist Periodontist’ in the districts

Brunei-Muara

2 full-time Periodontists (based in the National Dental Centre, Berakas). One of the Periodontist is based in Rimba Health Centre once a week (except for school holidays).

Belait

Travelling services provided by the 2 Periodontists; once a week (4 days a month with the exception of the fasting month).

Tutong and Temburong

Referred cases are seen in the National Dental Centre, Berakas, as the number of referral cases is not sufficient in numbers to justify travelling Periodontic services to the 2 districts (very few referred cases especially from Temburong).

Table 4.2.5 Number of patients and treatment done in Periodontics Unit (2013)

Age group	Attendances			Patient Consultation (Exam & Charting)	Oral Hygiene & Demo	Non-surgical			Surgical	Extraction		Head & Neck Cancer Patients
	Newly Referred Specialist/DO/DN/DH/DT	No. of Patients with Appointments	Failed/Cancelled Appointment			Scaling	Root Planning (Quadrant)	Maintenance		Pathological	Non-pathological	Post Radiotherapy Maintenance
Brunei-Muara												
6-12	1	6	1	2	5	3	0	2	0	0	0	0
13-19	30	228	86	20	143	81	3	18	0	0	0	0
20-55	404	2,330	901	454	1,161	585	249	416	9	16	1	11
>55	58	359	123	83	178	62	40	134	0	0	0	2
Belait												
6-12	0	0	0	0	0	0	0	0	0	0	0	0
13-19	0	7	0	0	5	0	0	0	0	0	0	0
20-55	28	95	4	20	66	23	8	26	0	0	0	0
>55	6	27	1	2	16	4	5	17	0	0	0	0
Tutong												
6-12	5	6	1	0	5	3	0	0	0	0	0	0
13-19	4	22	2	4	13	8	2	1	0	0	0	0
20-55	63	117	24	11	91	82	38	10	0	0	0	0
>55	7	9	1	0	10	6	4	1	0	0	0	0
Temburong												
6-12	0	0	0	0	0	0	0	0	0	0	0	0
13-19	0	7	0	0	5	0	0	0	0	0	0	0
20-55	28	95	4	20	66	23	8	26	0	0	0	0
>55	6	27	1	2	16	4	5	17	0	0	0	0
All combined	640	3,335	1,149	618	1,780	884	362	668	9	16	1	13

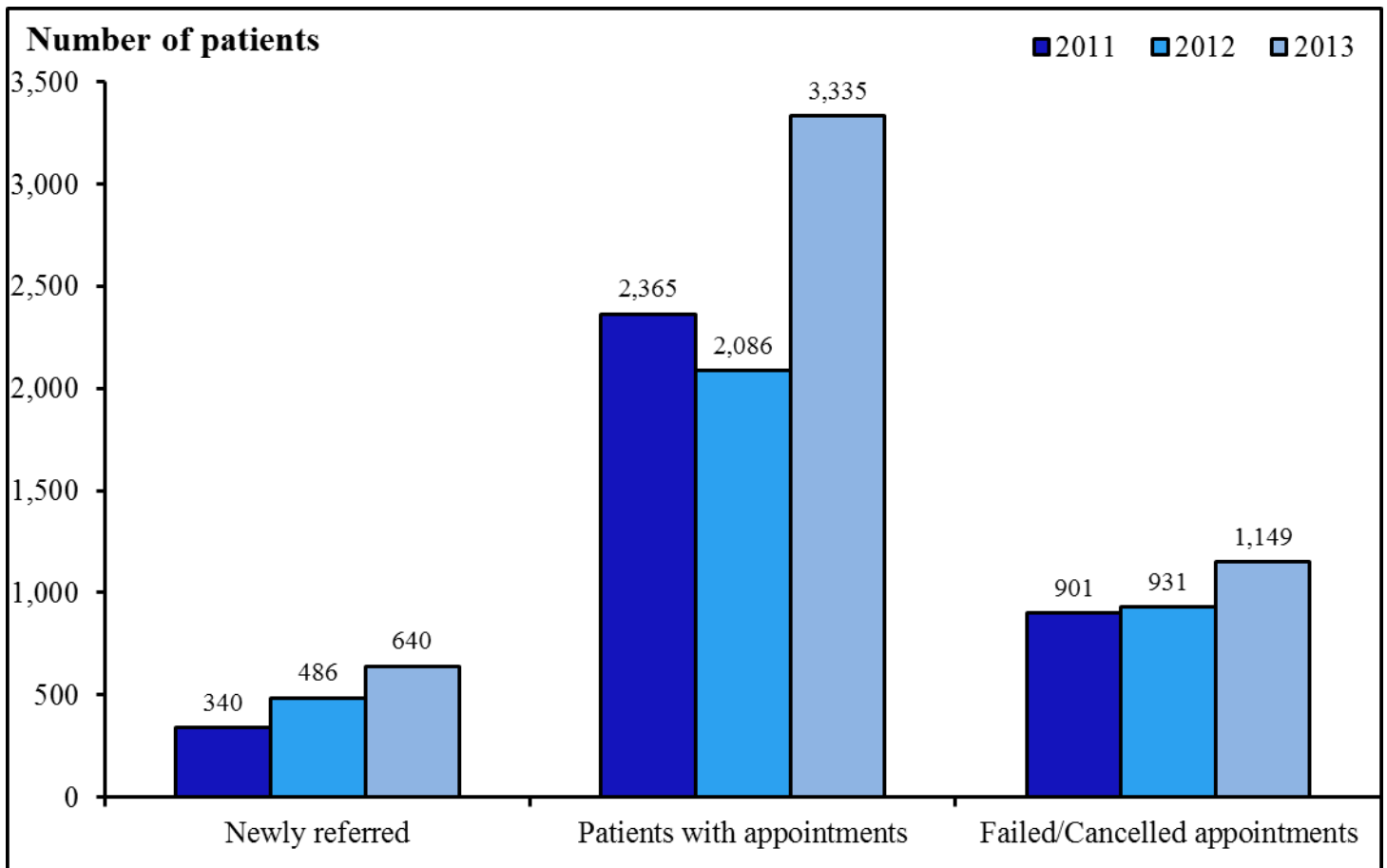


Figure 4.2.5a Number of different categories of attendances in Periodontic Unit (2011-2013)

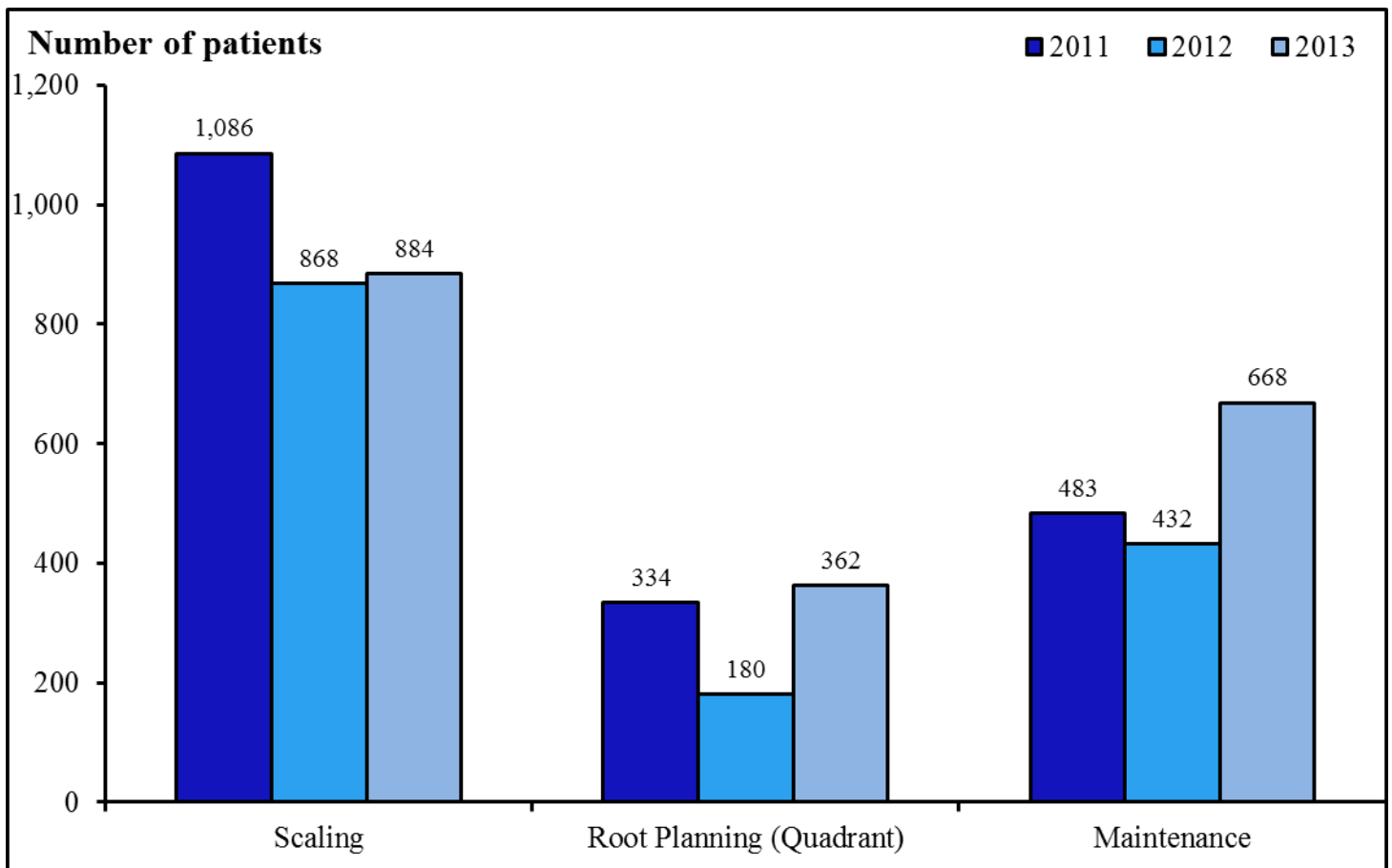


Figure 4.2.5b Number of non-surgical treatments done by Periodontic Unit (2011-2013)

PROSTHODONTICS

Prosthodontics is the branch of dentistry that specialises in the replacement of missing teeth or other structures of the oral cavity with prostheses in order to restore the patient's appearance, comfort, function and/or health.

Services provided include:

- Consultation and giving second opinions
- Providing comprehensive dental care
- Referral for stabilising treatment such as Dental Surgery, Endodontic, Periodontic and Orthodontic treatments according to patients' treatment needs
- Complex direct restorative treatments such as amalgam onlays and composite restorations to improve tooth morphology
- Indirect restorative treatment such as inlays, onlays, veneers or crowns
- Replacement of missing teeth with removable prostheses
- Replacement of missing teeth with fixed prostheses such as bridges
- Replacement of missing teeth with fixed or removable prostheses supported by dental implants
- Complex multidisciplinary restorative treatment
- Surgical crown-lengthening prior to provision of dental crowns or bridges
- Providing occlusal bite raising appliances to patients suffering from temporo-mandibular joint dysfunctions (TMJDs) or bruxism, for the relief of associated muscles and joint pain

Overview of Prosthodontics Specialty Services

Manpower

2 (local) Specialists

1 (expatriate) Senior Dental Officer

The Prosthodontic Unit is based at the National Dental Centre, Brunei-Muara. Travelling services to Belait are provided by 2 prosthodontists once a week; while patients from Tutong and Temburong are referred to the National Dental Centre.

Table 4.2.6a Number of patients and treatment done in the Prosthodontics Unit (2013)

Age group	FIXED PROSTHODONTICS											ENDODONTICS (includes pulpotomy)				
	Procedures (Patient)	Recementation of crowns/bridge (units)	Temporary crowns/ Bridge (units)	Posts (units)	Crown						Bridge (Total & Units)		Procedures (patients)	Teeth		
					Anterior			Posterior			Total Units Issued	Bridge		Units	New	Repeat
					Veneer	FPC	PBC	PBC	FPC							
13-19	2	0	0	0	0	0	0	1	0	1	0	0	1	1	0	
20-55	479	167	530	121	0	3	92	85	0	180	72	181	164	151	128	
>55	97	89	129	19	0	0	43	21	0	64	22	65	33	46	23	
All combined	578	256	659	140	0	3	135	107	0	245	94	246	198	198	151	

FPC – Full Porcelain Crown, PBC – Porcelain Bonded Crown

Table 4.2.6b Number of patients and treatment done in the Prosthodontics Unit (2013)

Age group	PROSTHETIC					CONSERVATIVE			ORAL SURGERY	PERIODONTICS
	Acrylic-based (number of units issued)		Metal-based	Repairs	Relines	Total number of Teeth & Surfaces Permanently Filled			No. of Teeth Extracted (Surgical)	No. of Scaling & Prophylaxis (Non-Surgical)
	Full denture	Partial denture				Teeth	Surfaces			
						New	Repeat			
13-19	0	0	0	0	0	1	1	0	0	8
20-55	1	25	6	32	1	313	369	35	59	22
>55	12	20	6	43	3	60	65	22	22	9
All combined	13	45	12	75	4	374	435	57	81	39

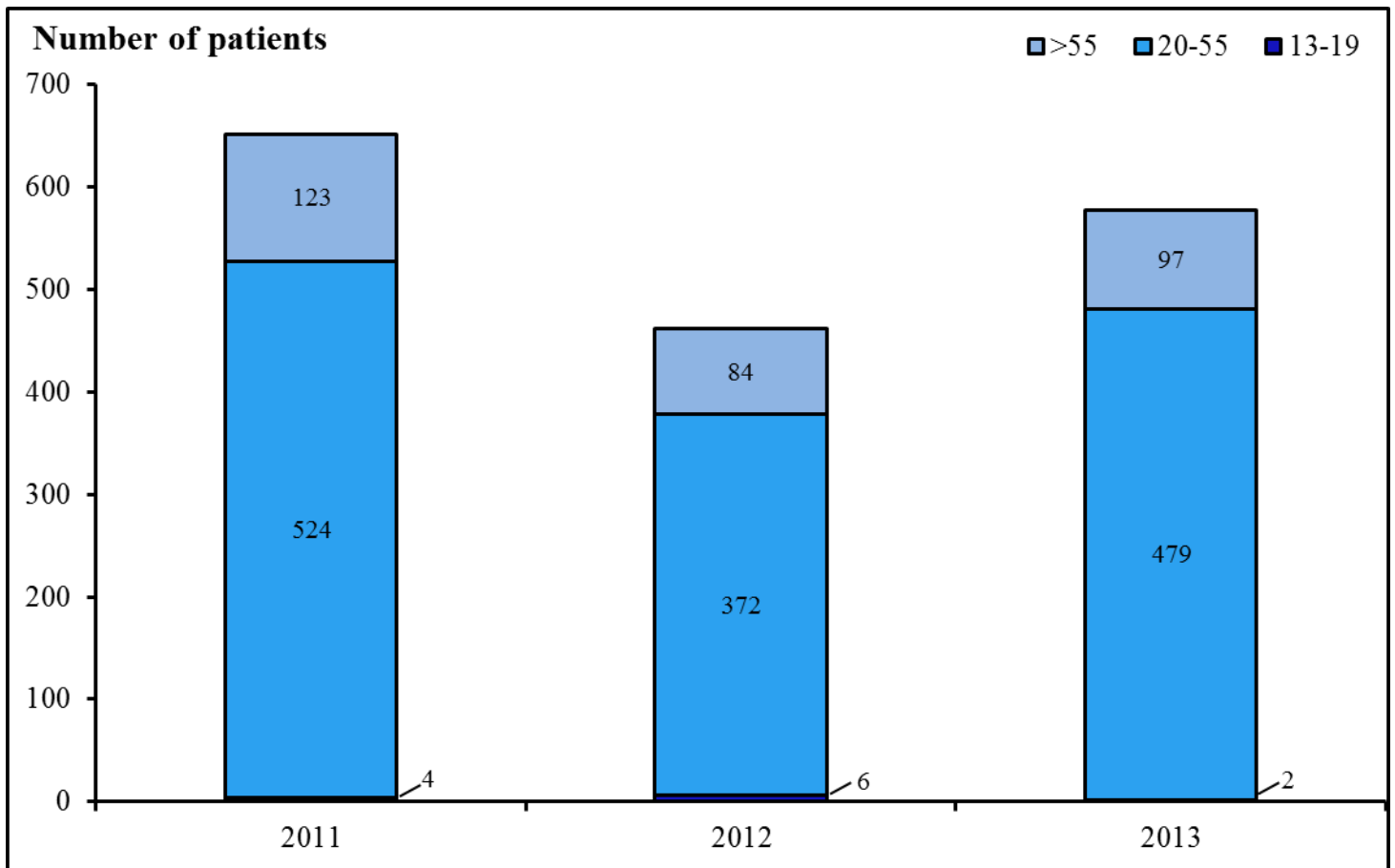


Figure 4.2.6a Total attendances in Prosthodontic Unit (2011-2013)

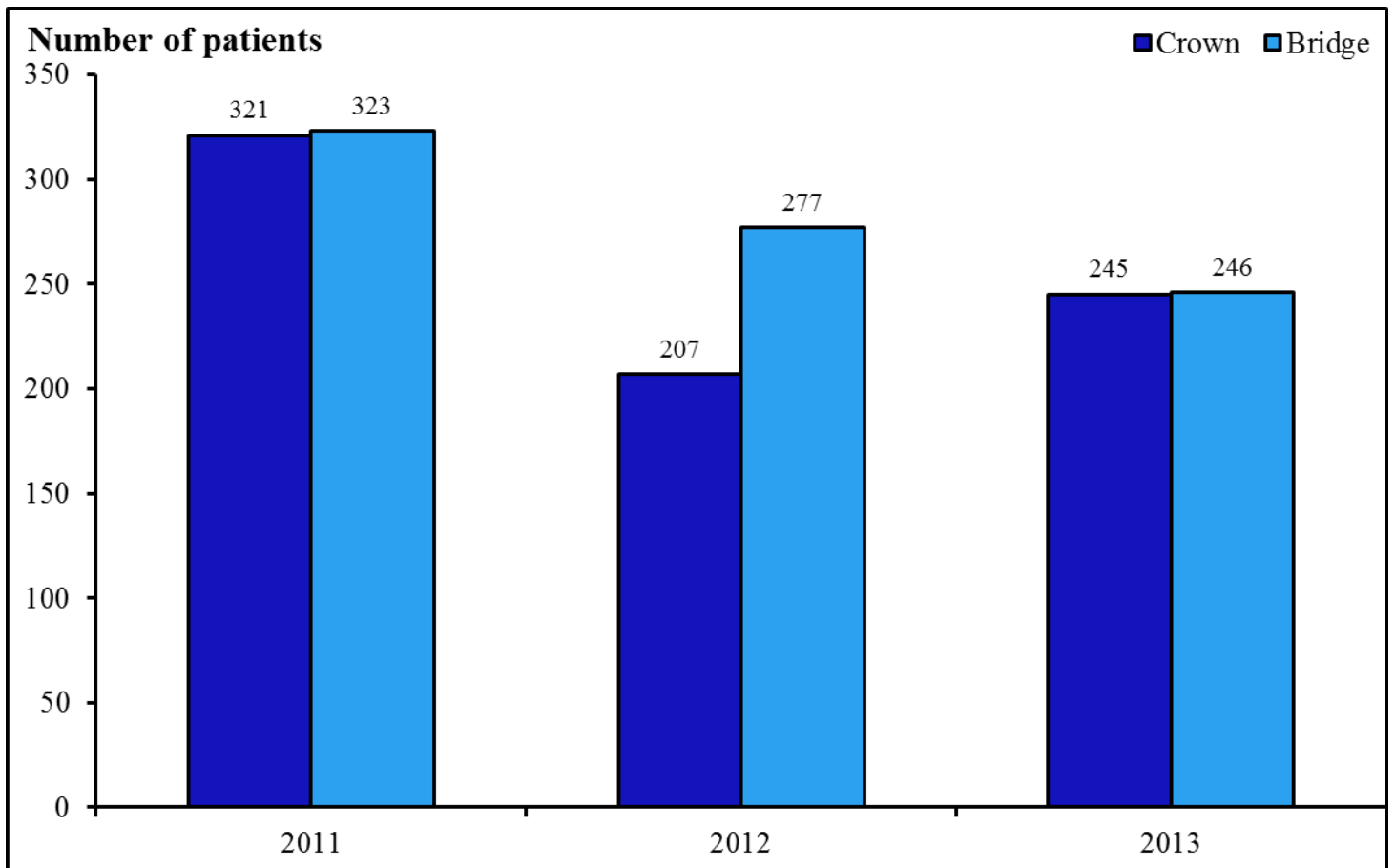


Figure 4.2.6b Number of crowns and bridges issued by Prosthodontic Unit (2011-2013)

RESTORATIVE

The Restorative Unit involves both surgical and restorative aspects of implant dentistry, with special attention to patient care under comprehensive treatment planning.

Services provided include:

- Consultation
- Investigations
- Diagnosis
- Treatment planning and referrals
- Surgery - Routine clinical procedures
- Replacement of missing teeth:
 - Single tooth gap
 - Multiple missing teeth
- Surgery - Advance clinical procedures
- Full mouth rehabilitation
- Ridge augmentation
- Sinus floor elevation

Overview of Restorative Specialty Services

Manpower

2 (local) Specialists

The Restorative Unit is based at the National Dental Centre, Brunei-Muara and accepts referrals from government and private dental clinics throughout Brunei Darussalam.

Table 4.2.7 Number of patients and treatment done in the Restorative Unit (2013)

Age group	Consultations		Implant Surgery		Total number of Implants, Crowns, Bridges and Dentures						
	Self	Referred	Procedure (Patients)	Units of Implant placed	Procedure (Patients)	Fixed (Units)			Removable (Units)		
						Implant	Abutment	Pontic	Implant	Upper Full Denture	Lower Full Denture
13-19	0	0	0	0	0	0	0	0	0	0	0
20-55	0	49	33	40	214	47	47	3	0	0	0
>55	3	11	21	39	220	54	56	10	4	1	0
All combined	3	60	54	79	434	101	103	13	4	1	0

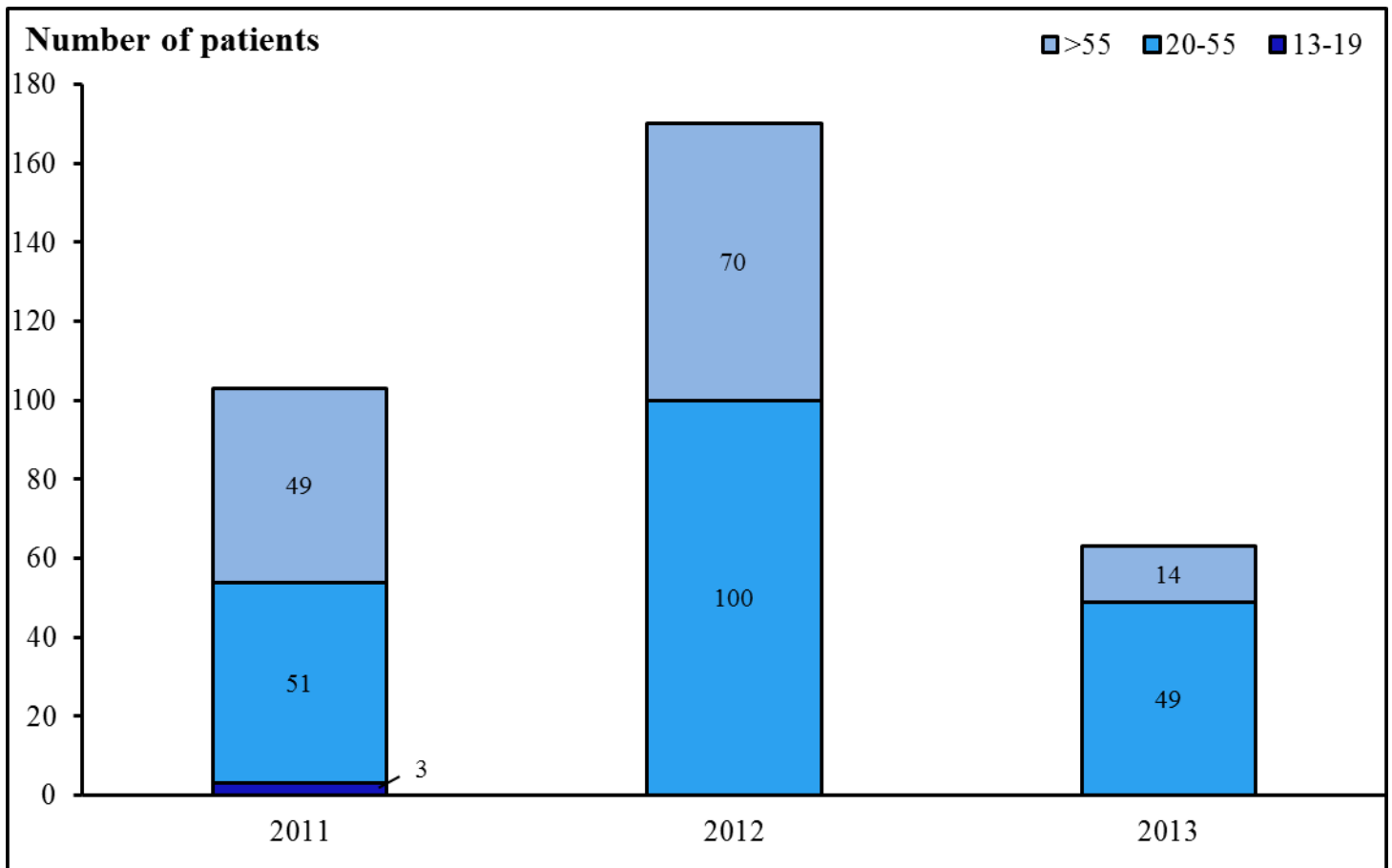


Figure 4.2.7a Total attendances in Restorative Unit (2011-2013)

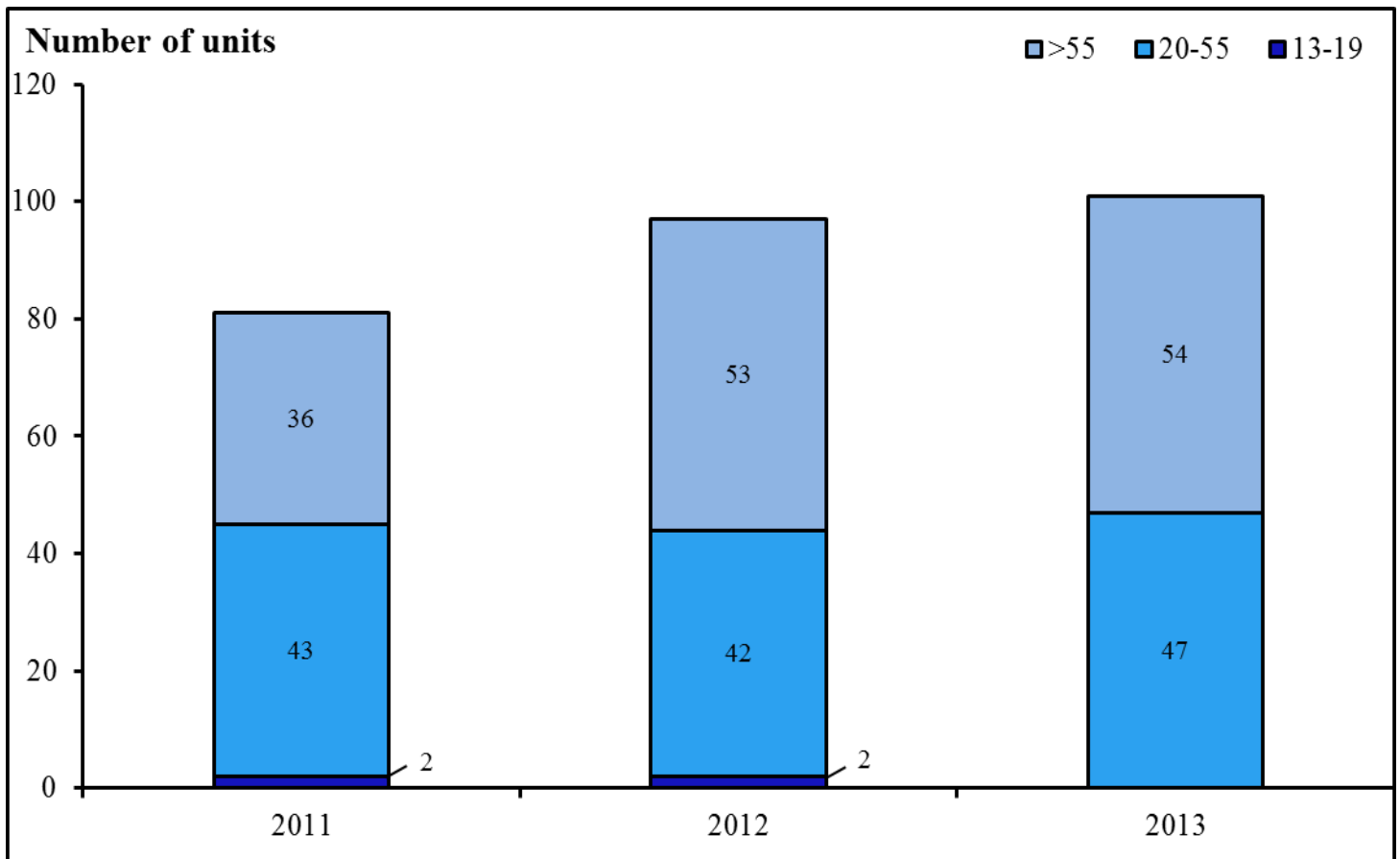


Figure 4.2.7b Number of fixed implants units done by Restorative Unit (2011-2013)

ORAL HEALTH PROMOTION

Oral Health Promotion is the branch of dentistry which is practiced in relation to population and group, which drives from epidemiology and awareness of service required to organise the application of these services for the benefit of the population.

Goals:

1. To reduce the prevalence of dental caries and periodontal disease in the population.
2. To strengthen the Oral Health Promotion Division to oversee all oral health promotion activities.
3. To target population that is at risks to oral diseases and to utilise proven interventions.

Overview of Oral Health Promotion (OHP) Division

Manpower

- 1 (local) Acting Specialist
- 1 (local) Dental Officer
- 2 (expatriate) Dental Officers – 1 full-time
- 1 (local) Senior Staff Dental Nurse
- 3 (local) Staff Dental Nurse
- 1 (local) Clerk

Services throughout the State

1. Antenatal Oral Health Care Programme

The main aim of the programme is to render comprehensive dental treatment and impart oral health education to ante-natal mothers with special emphasis on taking care of their infant's teeth and feeding practices. The programme aims to empower the expectant mother towards self-care; attaining good oral health for themselves, their infants and their families; thereby, improving their oral health status. It also aims at increasing the utilisation of oral health care services among antenatal mothers and provides them with systematic oral health care and dental health education.

The total number of antenatal mothers attending the antenatal clinics in MCH in 2013 is 6,153; and 1,514 (24.6% of antenatal mothers in 2013) attended dental clinics for their dental treatments.

A summary of antenatal attendances is presented in Figure 4.3.

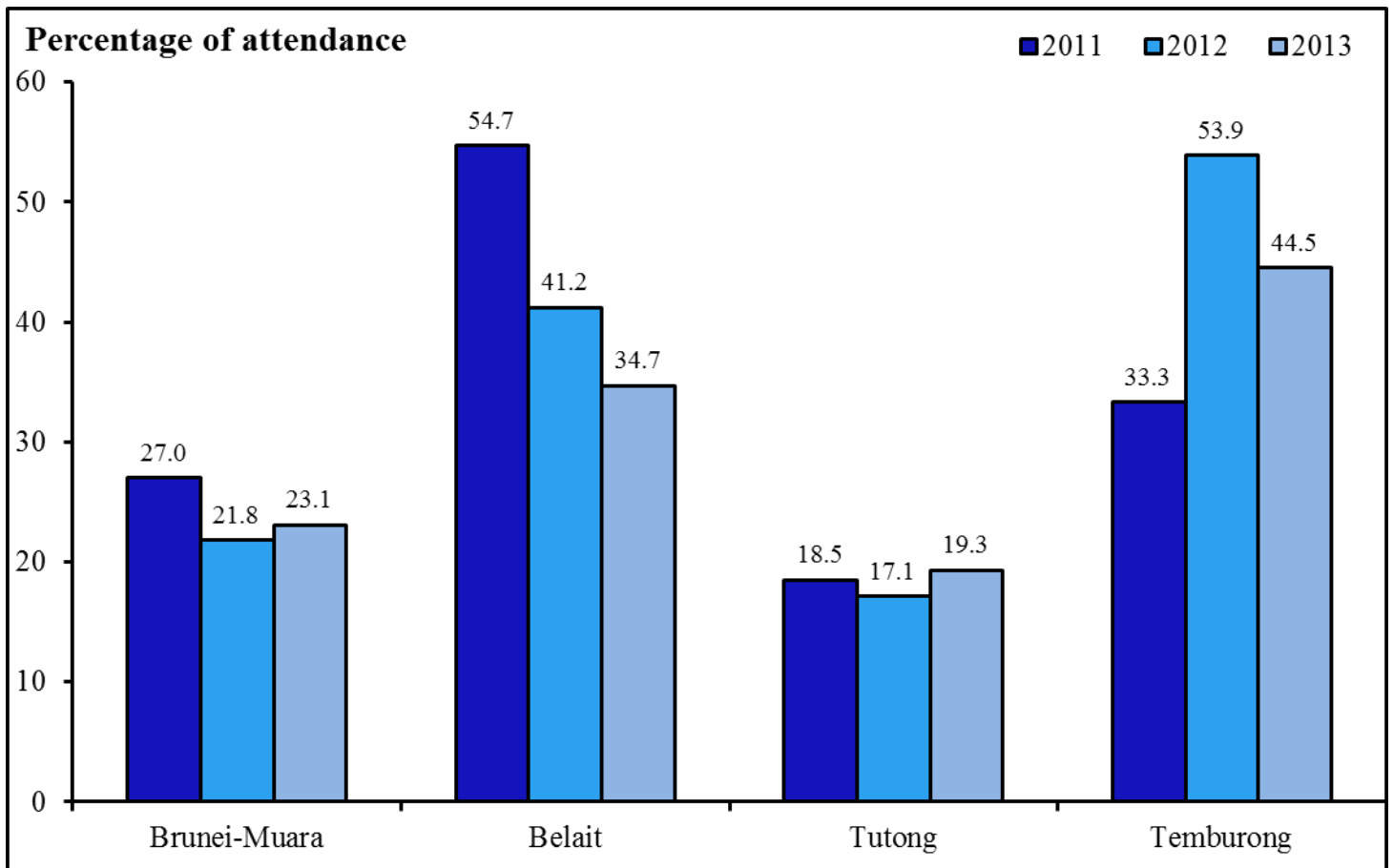


Figure 4.3a Percentage of antenatal patient attendances at dental clinics by districts (2011-2013)

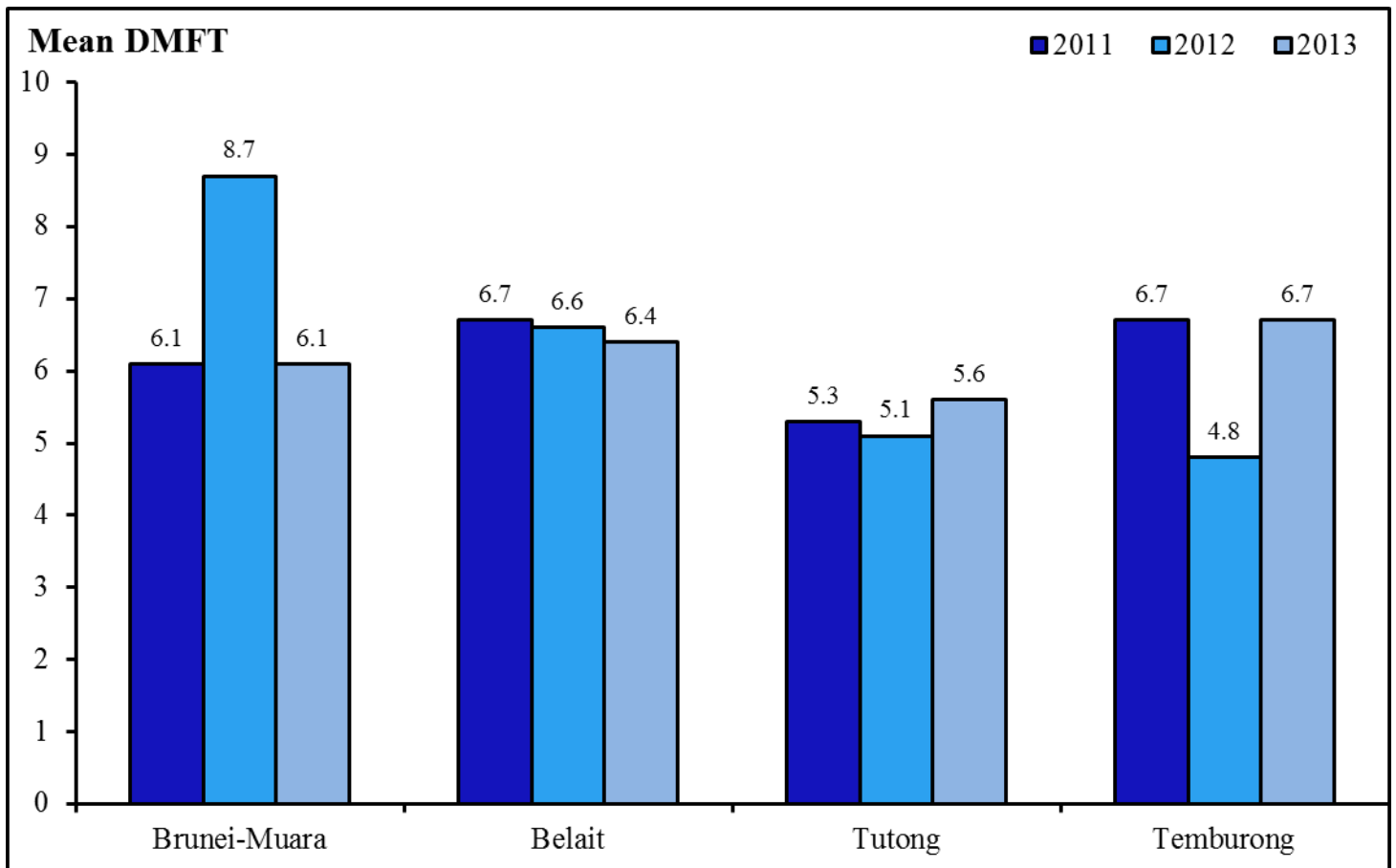


Figure 4.3b Mean DMFT for antenatal patients attending dental clinics by district (2011-2013)

2. Daily Fluoridated Toothbrushing Programme (DFTB) in Government Primary Schools

The goal of this programme is to reduce the prevalence of dental caries of primary school children through daily toothbrushing in schools using fluoride toothpaste (Polypaste, imported from Philippines, and tested the fluoride (1,450 ppm) in ACTA Netherlands Germany). 1 Polypaste bottle can be used for 8 students per year.

3. Health Promoting school activity (SMK-Sekolah Mempromosi Kesehatan)

A health promoting school is one that constantly strengthens its capacity as a healthy setting for living, learning and working. Children in Brunei Darussalam will be under either primary or secondary school communities which are dedicated to promoting lifelong learning, health and well-being.

4. Toddlers, Fluoride Varnish and Rolling Toothpaste Programme (TFRTP)

This is an 'early childhood oral health care programme'. The objective is to promote and maintain good oral health of toddlers, which can contribute to optimum growth and development. It targets post natal mothers and parents/carers of children under 5 years and below who are seen by the OHP staff under the Dental Services in Maternity and Child Health centres. This is a 3-in-1 programme which includes:-

1. Education- Toddlers programme - oral health counselling session for parents and children under 5 years old where breastfeeding is strongly encouraged instead of bottlefeeding. If the child is bottle feeding to strongly encourage weaning off and use a feeder cup from 1 year old onwards.

2. Clinical Intervention- Fluoride varnish applications to all dentate children at 6 months intervals until 5 years old for caries prevention.

3. Oral Health Promotion Intervention- The **Rolling Toothpaste Programme** is an interventive oral health promotion programme involving a complimentary bag containing a fluoridated toothpaste, toothbrush, leaflets, and a feeder cup being given as an incentive to parents of 9 months old babies to replace bottle feeding with feeder cups, at 1 year of age onwards and to encourage mothers/parents/caregivers to brush their children's teeth. A toothbrush and toothpaste are given to the child every 6 months until the child is 5 years old. According to the data from MOH, a total number of 5,906 children (0-5yrs) attended in MCH clinics in the year 2013. For TFRTP programme, a total number of 8,097 attended out of which 4,807 were new patients (81.3%). Out of these, 1,854 were 9 months old (31.3%) and 3,595 children received fluoride varnish application.

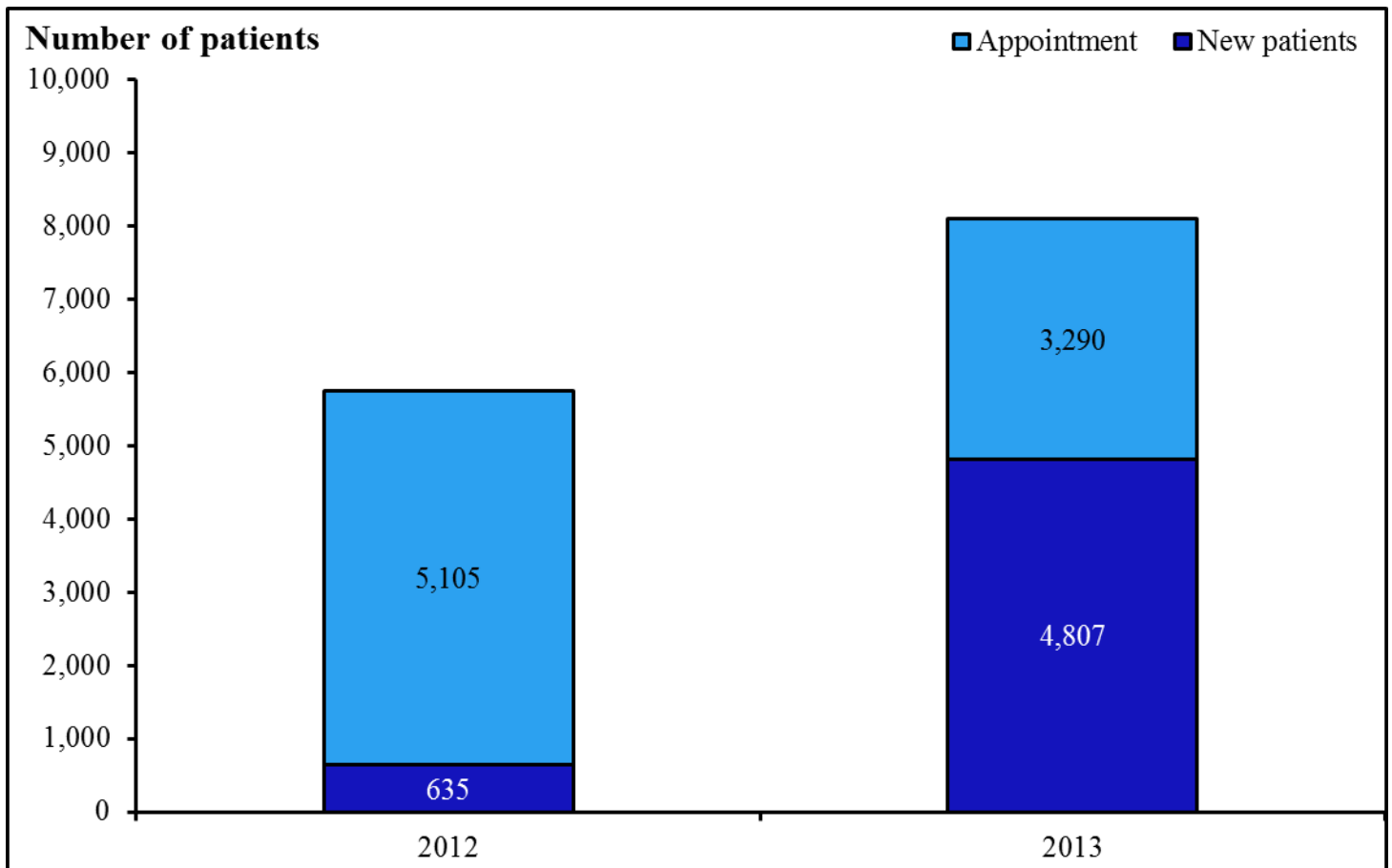


Figure 4.3c TF RTP total attendance (2012-2013)

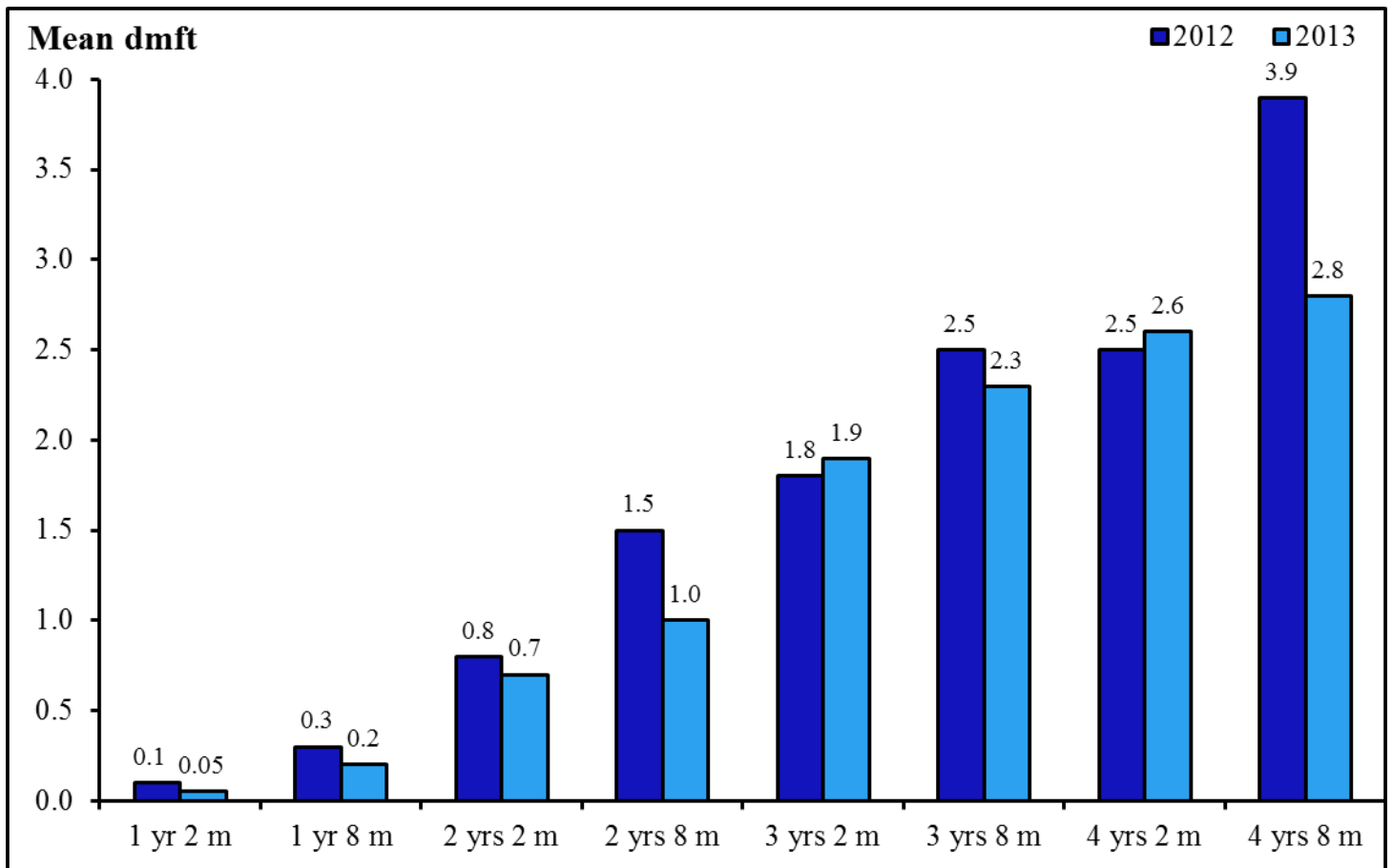


Figure 4.3d Deciduous dentition dental caries experience for 1 year 2 months to 4 years 8 months (2012-2013)

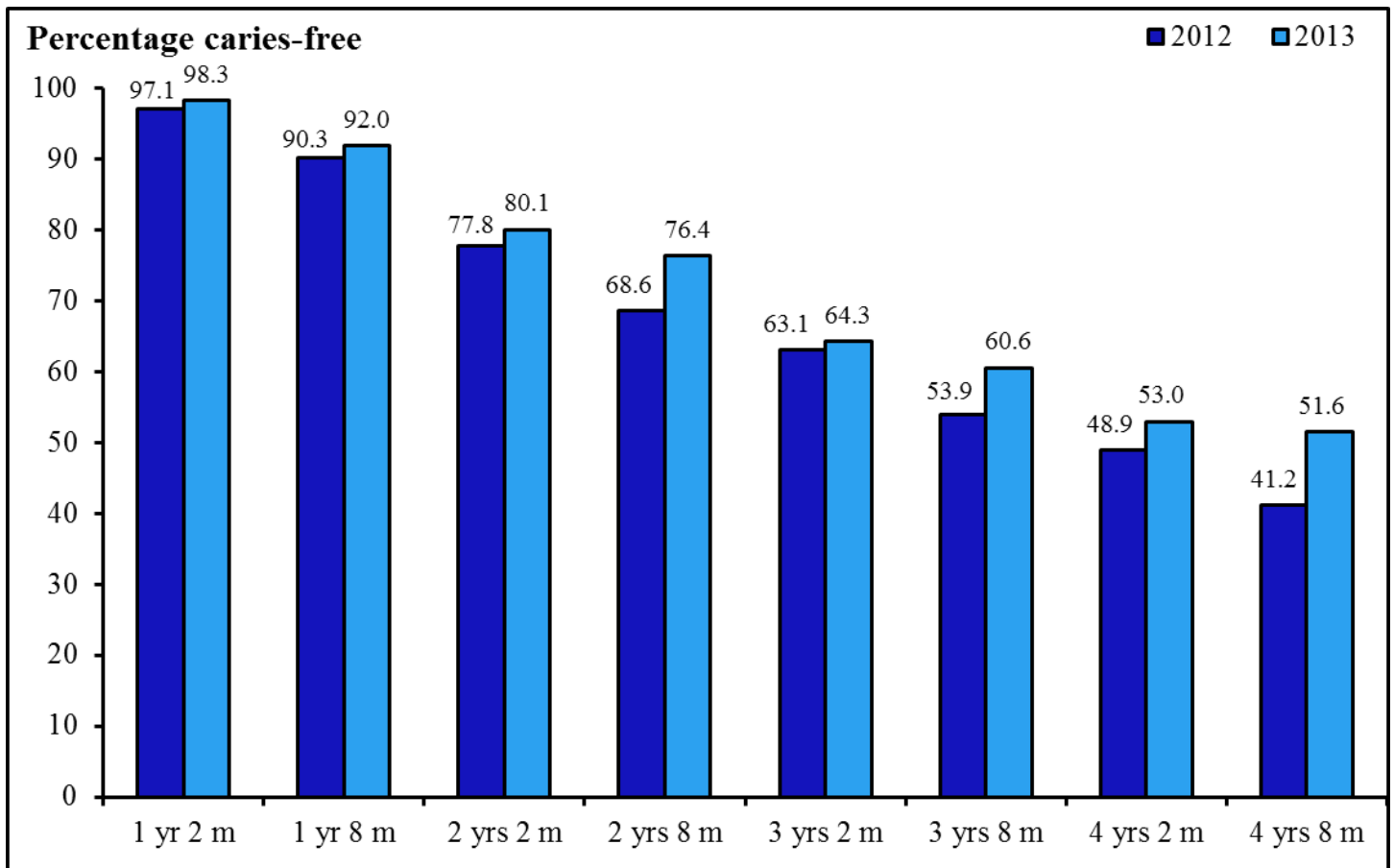


Figure 4.3e Percentage caries-free for 1 year 2 months to 4 years 8 months (2012-2013)

5. Oral Health Education Talks in Kindergarten, Primary and Secondary schools, Religious schools, Private schools and to Public

Oral health education aims to improve health by changing behaviour through information on oral health.

6. Exhibitions: International health conference in March, Gadong

Oral health promotion division has conducted an oral health exhibition, and information on oral health care for family has been compiled in the compilation of health leaflets in conjunction with the seminar.

7. Re-printing of OHP booklets banners and stickers

20,000 OHP booklets has been reprinted and distributed to Antenatal, TFRTP, Schools, and Health Centres/Clinics.

8. Water Fluoridation

The first water fluoridation plant was installed in the Layong water treatment plant at Tutong district in 1987. Since then, 4 more water fluoridation plants have been commissioned throughout the country.

Table 4.3a Water fluoridation plant in Brunei

Fluoridation plants	Year of commencement	Area supplied
Layong	1987	Most of Tutong district up to Jln Jerudong, Brunei-Muara district
Bukit Barun	1996	Most of Brunei-Muara district
Seria	2000	Most of Kuala Belait district except Labi
Mengkabau	2000	The whole of Muara area up to Kg. Kapok Kanan in Kota Batu area
Temburong (Sumbiling I & II)	2008	The whole of Temburong district

Table 4.3b Summary of Oral Health Promotion activities in 2013

Activities	Number
Schools receiving PollyPaste	Brunei-Muara (I)= 4 schools, Brunei-Muara (II)= 5 schools, Brunei-Muara (IIB)= 10 schools, Brunei-Muara (III)= 11 schools, Brunei-Muara (IV)= 12 schools, Tutong (I)= 11 schools, Tutong (II)= 11 schools, Belait= 9 schools, Temburong= 11 schools.
DFTB booklets given	70% of schools have received the DFTB booklets.
OHE talks in schools	Private schools kindergarten=13 schools (Brunei-Muara= 5, Tutong= 1, Belait= 7). Government primary schools= 78 schools (DFTB visits Brunei-Muara= 32, Tutong= 27, Belait=19, Temburong= 12).
OHE talks for adolescents	A-level students attachment programme. (15 students from 7 different schools on 04/12/2013, 16 students from Maktab Sains school on 11/12/13, and 15 students from 5 different schools on 18/12/13) Total number of students= 46.
Exhibitions	International Health Conference in Centrepoin Hotel in March. Information on oral health care for the family- has been compiled in the compilation of health leaflets (Ref. chapter 2 Oral health pg. 54 International health conference, Ministry of Health, Brunei Darussalam).
Health Promoting schools	Government schools= 7, Private schools= 2.
Banners re-printed	14x4 English & Malay banners have been reprinted.
Re-printing of OHP booklets	20,000 copies have been reprinted.

DENTAL LABORATORY

Dental Laboratory plays an important role in supplying a custom-made dentures, crowns and bridges, orthodontic appliances, splints and repair of dentures for individual patient's needs.

Services provided include:-

- *Prosthetics- This includes fabrication of acrylic dentures and chrome cobalt framework dentures, splints and repair of dentures.*
- *Conservatives- This includes fabrication of crown and bridgework, surgical stent, temporary crown, postcore, inlays and onlays.*
- *Orthodontics- This include fabrication of fixed and removable retainers, splints and study models.*

Overview of Dental Laboratory services

Manpower

8 (local) Senior Dental Technologists- 1 post borrowed by OMF

3 (local) Dental Technologists

3 (local) Chief Dental Technicians

5 (local) and 1 (expatriate) Senior Dental Technicians- 1 post borrowed by OMF

16 (local) Dental Technician Trainees- 1 post borrowed by OMF

Distribution of Dental Technologists/Dental Technicians in the Districts

Brunei-Muara

- 7 Dental Technologists and 8 Dental Technicians in National Dental Centre.
- 1 Dental Technologist and 1 Dental Technician in Muara Health Centre.
- 3 Dental Technicians in Sg Assam Health Centre.

Belait

- 1 Dental Technologist and 2 Dental Technicians in Suri Seri Begawan Hospital.
- 2 Dental Technicians in Seria Health Centre.

Tutong

- 1 Dental Technologist and 1 Dental Technician in PMMPMHAMB Hospital.

Distribution of cases received

Dental Laboratory receive cases from various Dental Clinics throughout the country. Cases from Temburong Dental Clinics are sent to Dental Laboratory in National Dental Centre.

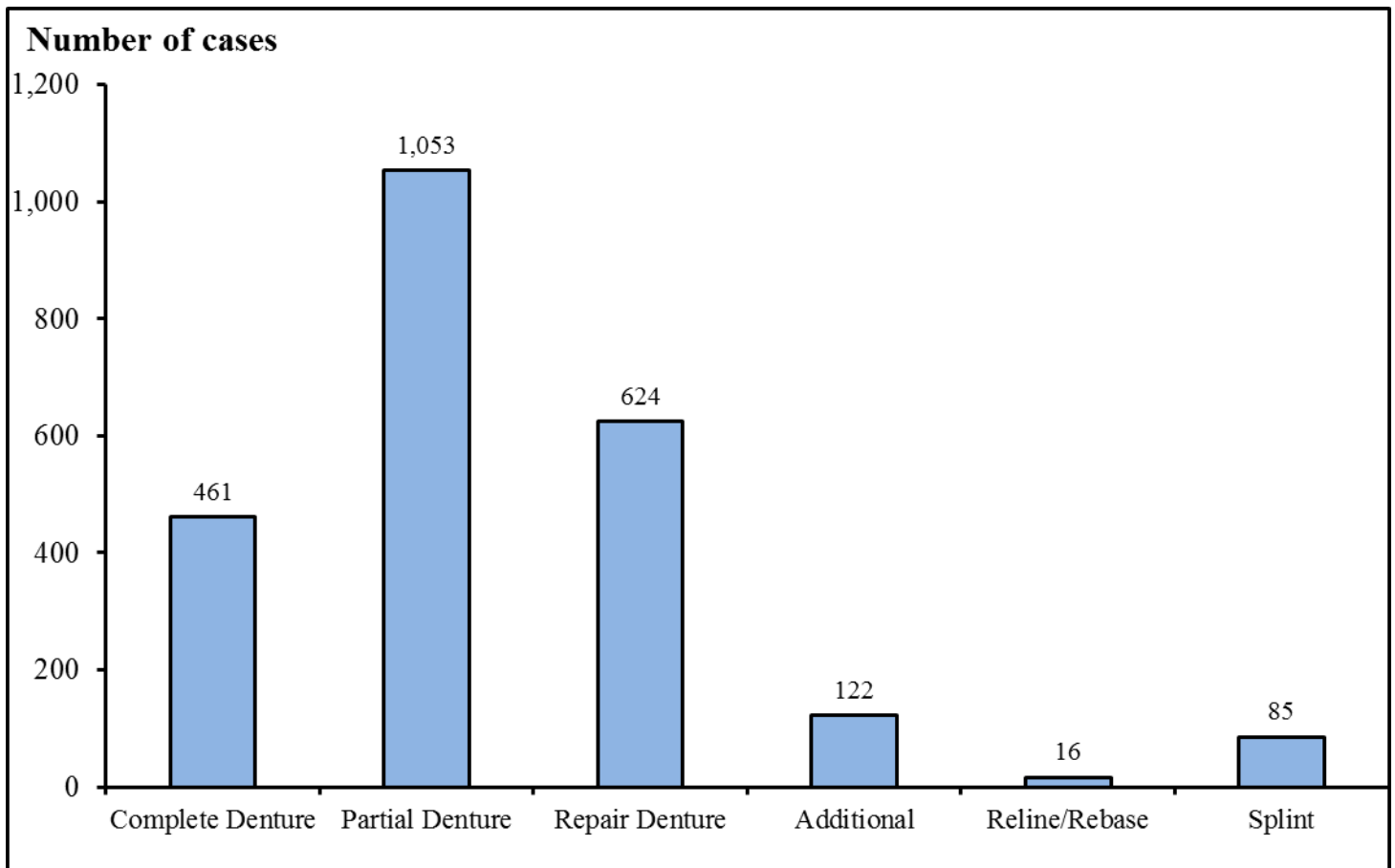


Figure 4.4a Number of prosthetic produced cases (2013)

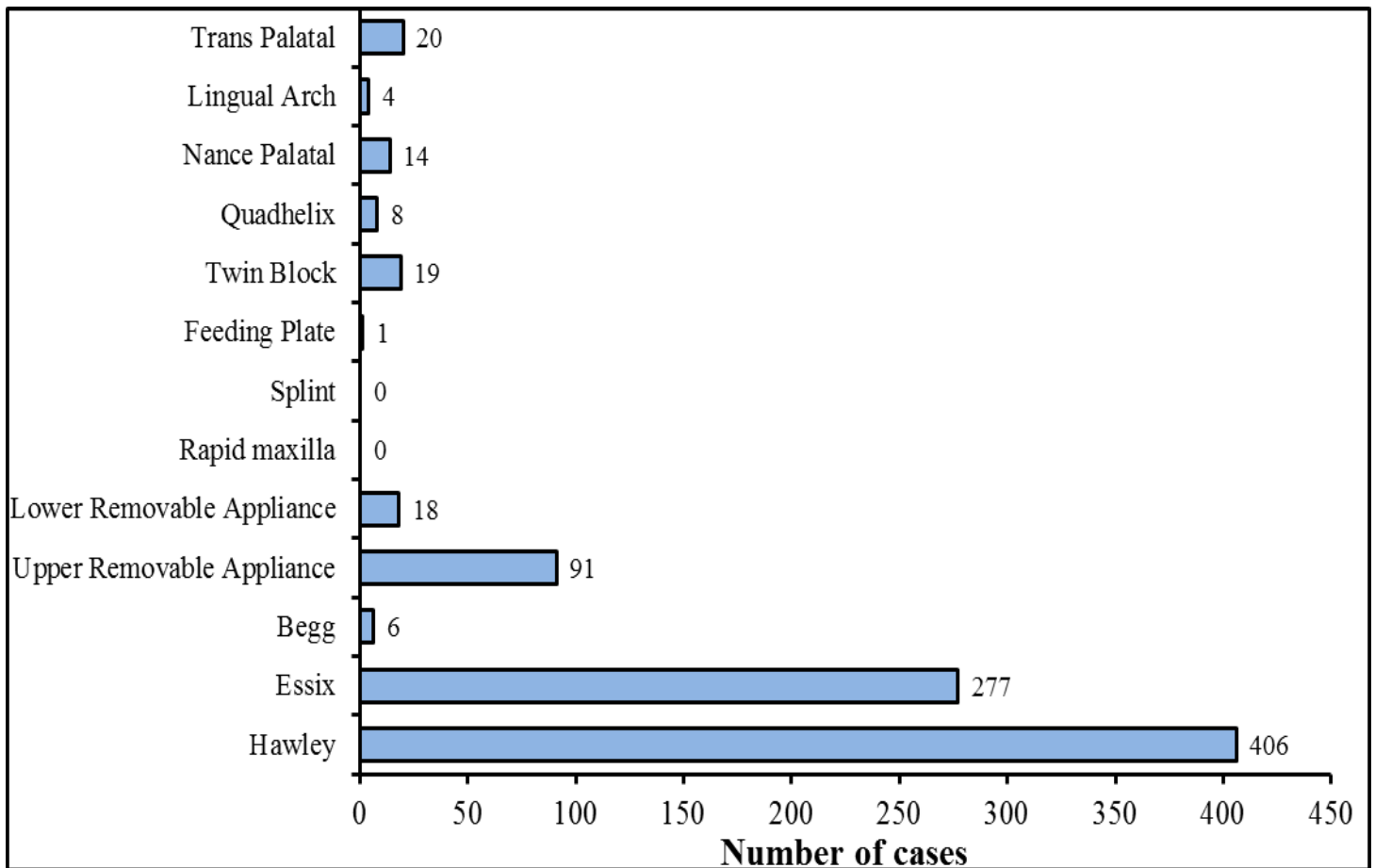


Figure 4.4b Number of orthodontic produced cases (2013)

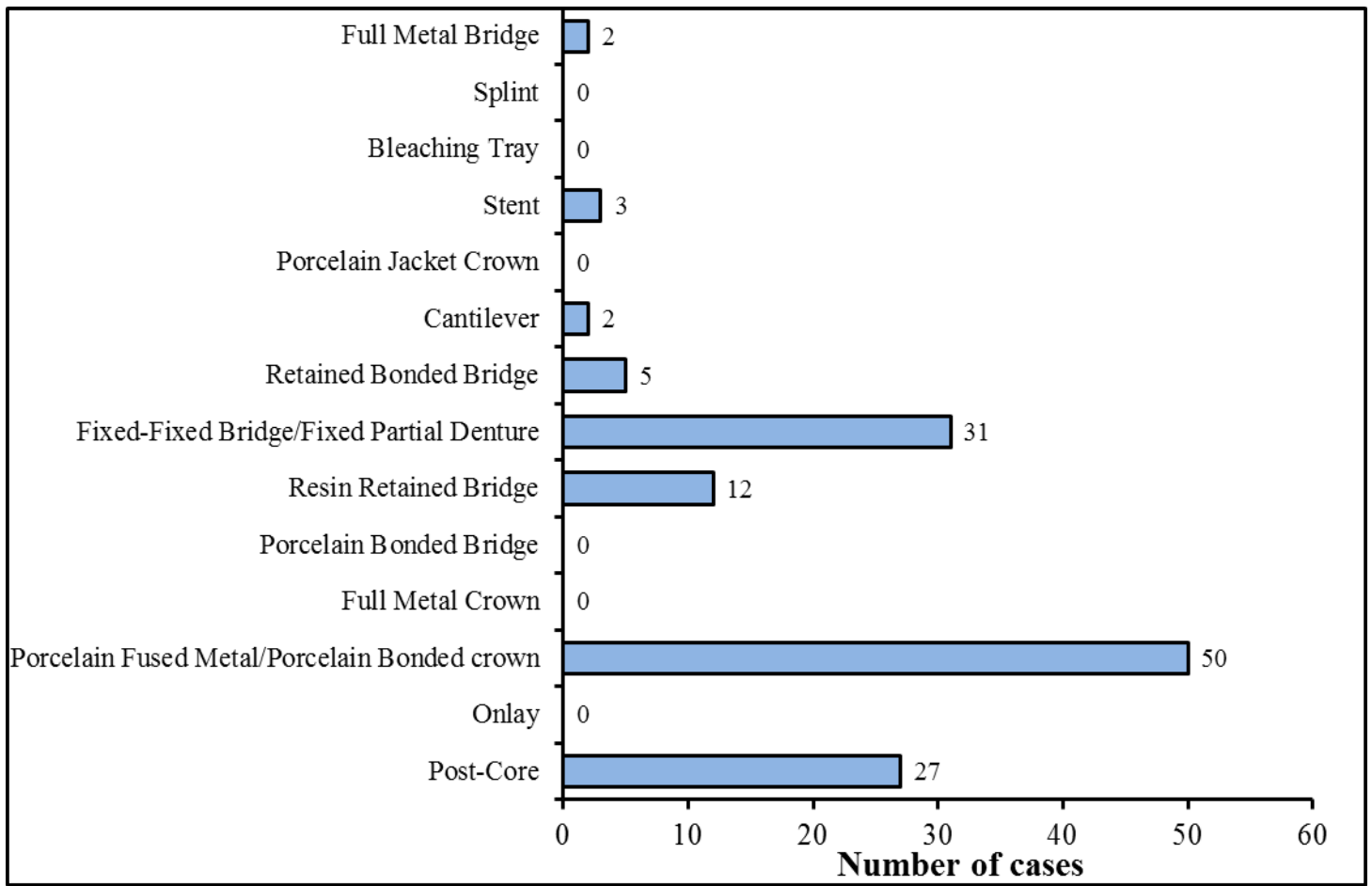


Figure 4.4c Number of crown and bridge produced cases (2013)

Contacts

Acknowledgements

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ACKNOWLEDGEMENTS

Statistics Unit
Research and Development Section
Department of Policy and Planning
Ministry of Health

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