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ANNEXURES

ANNEXURE 1: PER CAPITA COST, COST-EFFECTIVENESS AND COST-BENEFIT OF THE IMPLEMENTATION OF WATER FLUORIDATION FOR THE CITY OF TSHWANE METROPOLITAN MUNICIPALITY (PRETORIA)

Category A: >700 MI/day	Note: Data is needed for all shaded fields	
Category B: <700; >100 MI/day	City	Category
Category C: <100 MI/day	Tshwane (Pretoria)	Category A
Chemical name	Fluorosilicic acid	
Chemical formula	H ₂ SiF ₆	
Molecular mass	144.08	
[a] Available fluoride	79.1%	
[b] Purity	40.0%	

Variable	Formula	Value
(A) CHEMICAL COST:		
[1] Daily water purification rate (litre per day)		722,000,000
[2] Natural fluoride content of water (mg F/litre)		0.20
[3] Adjustment of fluoride level to (mg F/litre)		0.7
[4] Fluoride needed per day (metric tonne)	$[1] \times ([3] - [2]) / (1 \times 10^9)$	0.36
[5] Fluoride needed per year (metric tonne)	$[4] \times 365$	131.77
[6] Chemical needed per year (metric tonne)	$[5] / ([a] \times [b])$	416.45
[7] Cost of chemical (Rand per metric tonne)		R7,044.00
[8] Percentage handling fee by agent		12.5
[9] Delivery cost (metric tonne)		R180.00
[10] Total delivery cost of chemical	$[7] + ([7] \times [8] / 100) + [9]$	R8,104.50
(A) Cost of chemical per year	$[6] \times [10]$	R3,375,124.66
(B) LABOUR COST:		
[11] Average operator salary		R255,162.87
[12] Number of operators needed		6
[13] Annual operator salary for number of operators needed	$[11] \times [12]$	R1,561,596.77
[14] Number of hours needed per operator per day		1
(B) Annual labour cost for number of hours needed per day	$[13] / 8 \times [14]$	R195,199.60
(C) MAINTENANCE COST:		
[15] Capital cost per Mega litre of water processed		R8,750.00
[16] Percentage cost of buildings and storage		21
[17] Cost of buildings and storage	$[1] / 1,000,000 \times [15] \times [16] / 100$	R1,326,675.00
[18] Percentage cost of mechanical and electrical plant		79
[19] Cost of mechanical and electrical plant	$[1] / 1,000,000 \times [15] \times [18] / 100$	R4,990,825.00
[20] Total capital cost	$[17] + [19]$	R6,317,500.00
[21] Percentage		2.4
(C) Maintenance cost: % of total capital cost	$[20] \times [21] / 100$	R151,620.00



Variable	Formula	Value
(D) OPPORTUNITY COST:		
[22] Prime Overdraft Rate of Banks		11.5
(D) Opportunity cost: % of total capital cost	$[20] \times [22] / 100$	R726,512.50
(E) CAPITAL DEPRECIATION:		
[23] Years for building and storage		15
[24] Capital depreciation of buildings and storage	$[17] / [23]$	R88,445.00
[25] Years for mechanical and electrical plant		8
[26] Capital depreciation of mechanical and electrical plant	$[19] / [25]$	R623,853.13
(E) Total capital depreciation per annum	$[24] + [26]$	R712,298.13
(F) OPERATING COST:		
Chemical cost + Labour cost + Maintenance cost	$(A) + (B) + (C)$	R3,721,944.26
(G) TOTAL COST:		
Opportunity cost + Capital depreciation + Operating cost	$(D) + (E) + (F)$	R5,160,754.88
(H) PER CAPITA COST:		
[27] Population served by water provider		2,100,000
[28] Per capita cost for total population	$(G) / [27]$	R2.46
[29] Percentage of population younger than 15 years		26.46
[30] Population served by water scheme younger than 15 years	$[27] \times [29] / 100$	555,660
[31] Per capita cost younger than 15 years	$(G) / [30]$	R9.29
(I) CARIES DATA		
[32] DMFT		1.81
[33] Age for DMFT score		15
[34] DMFT increment per year	$[32] / ([33] - 6)$	0.20

Variable	Formula	Value		
(J) COST-EFFECTIVENESS (the cost per person per year to save 1 DMFT)				
[35] Decrease in caries incidence (%)		10	30	50
[36] Decrease in DMFT per child per year	$[35] / 100 \times [34]$	0.02	0.06	0.10
(J) Cost-effectiveness for total population	$[28] / [36]$	R122.20	R40.73	R24.44
(J) Cost-effectiveness for population younger than 15 years	$[31] / [36]$	R461.81	R153.94	R92.36
(K) COST-BENEFIT RATIO (the cost of implementation of water fluoridation divided by savings in cost of treatment)				
[37] Cost of a 2 surface amalgam restoration		R155.90		
[38] Cost of a 2 surface anterior resin restoration		R174.60		
[39] Cost of a 2 surface posterior resin restoration		R186.20		
[40] Average cost of a 2 surface restoration	$([37] + [38] + [39]) / 3$	R172.23		
(K) Cost-benefit ratio for total population	$[28] / ([36] \times [40])$	0.71	0.24	0.14
(K) Cost-benefit ratio for population younger than 15 years	$[31] / ([36] \times [40])$	2.68	0.89	0.54

ANNEXURE 2: DETAILED INFORMATION ON WATER PROVIDERS

Classification of water providers:

- **Category A:** Water purification rate of more than 700 Mega litre per day
- **Category B:** Water purification rate of less than 700 and more than 100 Mega litres per day
- **Category C:** Water purification rate of less than 100 Mega litres per day

Number of plant superintendents required:

- **Water purification rate of more than 250 Mega litre per day:** 4 plant superintendents
- **Water purification rate between 100 and 249 Mega litre per day:** 3 plant superintendents
- **Water purification rate between 50 and 99 Mega litre per day:** 2 plant superintendents
- **Water purification rate less than 50 Mega litre per day:** 1 plant superintendent
- **Water purification rate less than 1 Mega litre per day:** Assumed that superintendents from other plants service this plant

Salary adjustments:

Information on salaries of plant superintendents was supplied in 2004. Adjustments for 2005 and 2006 were based on the annual salary adjustments recommended by the Department of Public Service and Administration for post levels 1 to 12 (Department of Public Service and Administration, 2005; Department of Public Service and Administration, 2006):

- **2005:** 4.6% adjustment of 2004 salary rates
- **2006:** 5.3% adjustment of 2005 salary rates



Category A water providers:

• **Cape Town**

Plant	Current production (MI/day)	Population served	Plant superintendents	Salary (2006)
Faure	188.3		3	R558,237.42
Blackheath	190		3	R558,237.42
Wemmershoek	195.3		3	R558,237.42
Voëlvlei	154		3	R558,237.42
Steenbras	86.2		2	R372,158.28
Witzands	17.1		1	R186,079.14
Kloof Nek	12.4		1	R186,079.14
Somerset West	2.1		Same team as Faure	
Brooklands	2.7		1	R186,079.14
Albion Spring	1.1		Unmanned	
Constantia Nek	1.1		1	R186,079.14
Total	850.3	3,350,000	18	R3,349,424.49

• **Umgeni Water**

Plant	Current production (MI/day)	Population served	Plant superintendents	Salary (2006)
Midmar	250	800,000	4	R1,101,438.00
D.V. Harris	45	150,000	1	R275,359.50
Durban Heights	613	1,750,000	4	R1,101,438.00
Wiggins	120	500,000	3	R826,078.50
Hazelmere	30	40,000	1	R220,287.60
Amanzimtoti	25	75,000	1	R220,287.60
Mtwalumi	4	15,000	1	R220,287.60
Craigie Burn	4	15,000	1	R220,287.60
Umzinto	12	60,000	1	R220,287.60
Umbumbulu	2.5	10,000	1	R220,287.60
Ixopo	2	7,000	1	R220,287.60
Total	1,107.5	3,422,000	19	R4,846,327.20

• **Durban/Pietermaritzburg combined**

Plant	Current production (MI/day)	Population served	Plant superintendent	Salary (2006)
Midmar	250	800,000	4	R1,101,438.00
D.V. Harris	45	150,000	1	R275,359.50
Durban Heights	613	1,750,000	4	R1,101,438.00
Wiggins	120	500,000	3	R826,078.50
Hazelmere	30	40,000	1	R220,287.60
Amanzimtoti	25	75,000	1	R220,287.60
Total	1,083	3,315,000	14	R3,744,889.20



• **Durban**

Plant	Current production (MI/day)	Population served	Plant superintendent	Salary (2006)
Midmar (60%)	150		2.4	R660,862.80
D.V. Harris (60%)	27		0.6	R165,215.70
Durban Heights	613		4	R1,101,438.00
Wiggins	120		3	R826,078.50
Hazelmere	30		1	R220,287.60
Amanzimtoti	25		1	R220,287.60
Craigie Burn	4		1	R200,000.00
Umbumbulu	2.5		1	R200,000.00
Total	971.5	3,064,624	14	R3,594,170.20

Note: 60% of water processed by the Midmar and D.V. Harris plants (Umgeni Water) is supplied to Durban, therefore Durban is responsible for 60% of the cost of superintendents for these plants

• **Rand Water**

Plant	Current production (MI/day)	Population served	Plant superintendent	Salary (2006)
Vereeniging			4	R1,101,438.00
Zuikerbosch			4	R1,101,438.00
Total	3,558	12,000,000	8	R2,202,876.00

• **Johannesburg**

Plant	Current production (MI/day)	Population served	Plant superintendent	Salary (2006)
Vereeniging (36%)			1.44	R396,517.68
Zuikerbosch (36%)			1.44	R396,517.68
Total	1,280	3,225,608	2.88	R793,035.36

Note: 36% of water processed by the Vereeniging and Zuikerbosch plants (Rand Water) is supplied to Johannesburg, therefore Johannesburg is responsible for 36% of the cost of superintendents for these plants

• **Tshwane (Pretoria)**

Plant	Current production (MI/day)	Population served	Plant superintendent	Salary (2006)
Rietvlei	40		1	R250,638.83
Temba	60		2	R501,277.65
Roodeplaat	60		2	R501,277.65
Fonteine, Grootfontein, Sterkfontein	65		Unmanned	
Rand Water (14%)	497		1.12	R308,402.64
Total	722	2,100,000	6.12	R1,561,596.77

Note: 14% of water processed by Rand Water is supplied to Tshwane, therefore Tshwane is responsible for 14% of the cost of superintendents for these plants

Category B water providers:

- **Port Elizabeth**

Plant	Current production (Ml/day)	Population served	Plant superintendent	Salary (2006)
Linton	11		1	R201,563.15
Loerie	65		2	R403,126.31
Churchill	70		2	R403,126.31
Elandsjagt	65		2	R403,126.31
Groendal	15		1	R201,563.15
Springs	6		Unmanned	
Nooitgedacht	50		2	R403,126.31
Total	282	1,200,000	10	R2,015,631.54

- **Amatola Water**

Plant	Current production (Ml/day)	Population served	Plant superintendent	Salary (2006)
Sandile	18		1	R132,172.56
Laing	27.3		1	R132,172.56
Nahoon	33.7		1	R132,172.56
Peddie	6.56		1	R132,172.56
Binfield Park	4.8		1	R132,172.56
Wesley Coastal	4.3		1	R132,172.56
Mascincedane	2.2		1	R132,172.56
Debe Nek	1.5		1	R132,172.56
Rooikrantz	1.2		1	R132,172.56
Pleasant View	0.75			
Dabi	0.72			
Upper Mnyameni	0.56			
Glenmore	0.5			
Upper Gxulu	0.11			
Total	102.2	1,210,286	9	R1,189,553.04

- **Pietermaritzburg**

Plant	Current production (Ml/day)	Population served	Plant superintendents	Salary (2006)
Midmar (40%)	100		1.6	R440,575.20
D.V. Harris (40%)	18		0.4	R110,143.80
Total	118	500,000	2	R550,719.00

Note: 40% of water processed by the Midmar and D.V. Harris plants (Umgeni Water) is supplied to Pietermaritzburg, therefore Pietermaritzburg is responsible for 40% of the cost of superintendents for these plants



- **Bloem Water**

Plant	Current production (MI/day)	Population served	Plant superintendents	Salary (2006)
Welbedacht	120	600,000	3	R712,178.80
Rustfontein	30	330,000	1	R237,392.93
Groothoek	5	25,000	1	R237,392.93
Bethulie	4	24,000	1	R237,392.93
Gariiep	2.2	4,000	1	R237,392.93
Philippolis	1	4,000	1	R237,392.93
Sterkspruit	3.5	40,000	1	R237,392.93
Total	165.7	1,027,000	9	R2,136,536.39

- **Bloemfontein**

Plant	Current production (MI/day)	Population served	Plant superintendents	Salary (2006)
Welbedacht (88%)	105.6	528,000	2.64	R626,717.34
Rustfontein (4%)	1.2	13,200	0.04	R9,495.72
Total	106.8	541,200	2.68	R636,213.06

Note: 88% of water processed by the Welbedacht and 4% of the Rustfontein plants (Bloem Water) is supplied to Bloemfontein, therefore Bloemfontein is responsible for 88% and 4% of the cost of superintendents for these plants

- **Kimberley**

Plant	Current production (MI/day)	Population served	Plant superintendents	Salary (2006)
Riverton	128		3	R454,607.52
Ritchie	1.7		1	R151,535.84
Total	129.7	223,000	4	R606,143.36

Category C water providers:

- **Buffalo City (East London)**

Plant	Current production (MI/day)	Population served	Plant superintendents	Salary (2006)
Sandile	18		1	R132,172.56
Laing	27.3		1	R132,172.56
Nahoon	33.7		1	R132,172.56
Total	79	677,379	3	R396,517.68

- **Botshabelo**

Plant	Current production (MI/day)	Population served	Plant superintendents	Salary (2006)
Rustfontein (93%)	27.9	306,900	0.93	R200,442.90

Note: 93% of water processed by the Rustfontein plant (Bloem Water) is supplied to Botshabelo, therefore Botshabelo is responsible for 93% of the cost of superintendents for these plants



- **Mafikeng**

Plant	Current production (MI/day)	Population served	Plant superintendents	Salary (2006)
Mmabatho	10		1	R137,679.75
Mafikeng	27		1	R137,679.75
Total	37	170,000	2	R275,359.50

- **Nelspruit**

Plant	Current production (MI/day)	Population served	Plant superintendents	Salary (2006)
Nelspruit	28	35,000	1	R132,172.56
Matsulu	14	60,000	1	R132,172.56
Total	42	95,000	2	R264,345.12

- **Polokwane**

Plant	Current production (MI/day)	Population served	Plant superintendents	Salary (2006)
Polokwane	16	47,565	1	R109,477.43
Seshego	2	70,991	1	R109,477.43
Houtrivierdam	3	53,600	1	R109,477.43
Molepodam	2	28,400	1	R109,477.43
Chuenespoortdam	1		1	R109,477.43
Total	24	200,556	5	R547,387.15



ANNEXURE 3: PER CAPITA COST OF DELIVERING THE MINIMUM PACKAGE OF ORAL CARE TO THE 15-YEAR-OLD AGE COHORT

Anticipated % caries reduction due to water fluoridation 0

NRPL 2006								
			Examination/bitewings included			Examination/bitewings excluded		
Variable:	[1]	[2]	[3]; [4]	[7]	[8]	[3]; [4]	[7]	[8]
Examination								
% of population	Pop est 2006	Treatment need	Fee code: 8101 Fee: R103.50	% of total	Per capita cost			
National	987,600	100	R102,216,600.00	19.23	R103.50			
Western Cape	84,980	100	R8,795,430.00	12.98	R103.50			
Northern Cape	17,140	100	R1,773,990.00	16.40	R103.50			
Eastern Cape	174,720	100	R18,083,520.00	23.87	R103.50			
Free State	62,040	100	R6,421,140.00	17.04	R103.50			
KwaZulu-Natal	215,760	100	R22,331,160.00	20.51	R103.50			
Gauteng	139,400	100	R14,427,900.00	19.60	R103.50			
North West	76,980	100	R7,967,430.00	26.60	R103.50			
Mpumalanga	71,600	100	R7,410,600.00	21.31	R103.50			
Limpopo	144,980	100	R15,005,430.00	18.98	R103.50			
Bitewings								
% of population	Pop est 2006	Treatment need	Fee code: 8112 Fee: R41.90	% of total	Per capita cost			
National	987,600	100	R82,760,880.00	15.57	R83.80			
Western Cape	84,980	100	R7,121,324.00	10.51	R83.80			
Northern Cape	17,140	100	R1,436,332.00	13.27	R83.80			
Eastern Cape	174,720	100	R14,641,536.00	19.32	R83.80			
Free State	62,040	100	R5,198,952.00	13.80	R83.80			
KwaZulu-Natal	215,760	100	R18,080,688.00	16.61	R83.80			
Gauteng	139,400	100	R11,681,720.00	15.87	R83.80			
North West	76,980	100	R6,450,924.00	21.53	R83.80			
Mpumalanga	71,600	100	R6,000,080.00	17.25	R83.80			
Limpopo	144,980	100	R12,149,324.00	15.36	R83.80			
Prophylaxis								
Mean no of sextants	Pop est 2006	Treatment need	Fee code: 8159 Fee: R124.90	% of total	Per capita cost	Fee code: 8159 Fee: R124.90	% of total	Per capita cost
National	987,600	3.31	R92,760,132.48	17.45	R93.92	R92,760,132.48	26.76	R93.92
Western Cape	84,980	3.27	R8,883,919.67	13.12	R104.54	R8,883,919.67	17.14	R104.54
Northern Cape	17,140	2.30	R1,389,370.11	12.84	R81.06	R1,389,370.11	18.26	R81.06
Eastern Cape	174,720	2.88	R18,374,568.58	24.25	R105.17	R18,374,568.58	42.69	R105.17
Free State	62,040	3.95	R4,835,248.70	12.83	R77.94	R4,835,248.70	18.55	R77.94
KwaZulu-Natal	215,760	3.57	R19,510,658.98	17.92	R90.43	R19,510,658.98	28.50	R90.43
Gauteng	139,400	3.31	R13,093,117.12	17.79	R93.92	R13,093,117.12	27.57	R93.92
North West	76,980	2.57	R6,441,917.34	21.50	R83.68	R6,441,917.34	41.46	R83.68
Mpumalanga	71,600	1.97	R6,099,016.88	17.53	R85.18	R6,099,016.88	28.54	R85.18
Limpopo	144,980	4.41	R14,124,241.56	17.86	R97.42	R14,124,241.56	27.20	R97.42
Consultation								
% needing care	Pop est 2006	Treatment need						
National	987,600	57.67						
Western Cape	84,980	85.20						
Northern Cape	17,140	62.20						
Eastern Cape	174,720	49.70						
Free State	62,040	66.60						
KwaZulu-Natal	215,760	59.00						
Gauteng	139,400	47.10						
North West	76,980	31.30						
Mpumalanga	71,600	44.90						
Limpopo	144,980	24.10						



Topical fluoride application								
% of population	Pop est 2006	Treatment need	Fee code: 8161 Fee: R63.60	% of total	Per capita cost	Fee code: 8161 Fee: R63.60	% of total	Per capita cost
National	987,600	9.20	R5,776,935.88	1.09	R5.85	R5,776,935.88	1.67	R5.85
Western Cape	84,980	3.30	R178,356.02	0.26	R2.10	R178,356.02	0.34	R2.10
Northern Cape	17,140	2.00	R21,802.08	0.20	R1.27	R21,802.08	0.29	R1.27
Eastern Cape	174,720	7.20	R800,077.82	1.06	R4.58	R800,077.82	1.86	R4.58
Free State	62,040	3.80	R149,938.27	0.40	R2.42	R149,938.27	0.58	R2.42
KwaZulu-Natal	215,760	10.80	R1,482,012.29	1.36	R6.87	R1,482,012.29	2.16	R6.87
Gauteng	139,400	9.20	R815,416.02	1.11	R5.85	R815,416.02	1.72	R5.85
North West	76,980	12.30	R602,199.14	2.01	R7.82	R602,199.14	3.88	R7.82
Mpumalanga	71,600	12.40	R564,666.24	1.62	R7.89	R564,666.24	2.64	R7.89
Limpopo	144,980	9.20	R848,056.06	1.07	R5.85	R848,056.06	1.63	R5.85
Fissure sealant								
Mean no of teeth	Pop est 2006	Treatment need	Fee code: 8163 Fee: R41.90	% of total	Per capita cost	Fee code: 8163 Fee: R41.90	% of total	Per capita cost
National	987,600	1.48	R61,069,345.81	11.49	R61.84	R61,069,345.81	17.62	R61.84
Western Cape	84,980	3.38	R12,018,597.63	17.74	R141.43	R12,018,597.63	23.19	R141.43
Northern Cape	17,140	0.13	R95,748.05	0.88	R5.59	R95,748.05	1.26	R5.59
Eastern Cape	174,720	0.03	R207,686.53	0.27	R1.19	R207,686.53	0.48	R1.19
Free State	62,040	2.23	R5,807,895.63	15.41	R93.62	R5,807,895.63	22.29	R93.62
KwaZulu-Natal	215,760	1.55	R14,008,984.86	12.87	R64.93	R14,008,984.86	20.47	R64.93
Gauteng	139,400	1.48	R8,619,954.24	11.71	R61.84	R8,619,954.24	18.15	R61.84
North West	76,980	0.52	R1,687,710.73	5.63	R21.92	R1,687,710.73	10.86	R21.92
Mpumalanga	71,600	0.14	R411,350.78	1.18	R5.75	R411,350.78	1.92	R5.75
Limpopo	144,980	1.48	R8,964,999.75	11.34	R61.84	R8,964,999.75	17.27	R61.84
One surface restoration								
Mean no of teeth	Pop est 2006	Treatment need	Average fee: R138.60	% of total	Per capita cost	Average fee: R138.60	% of total	Per capita cost
National	987,600	0.83	R113,474,632.01	21.35	R114.90	R113,474,632.01	32.74	R114.90
Western Cape	84,980	1.60	R18,867,774.29	27.85	R222.03	R18,867,774.29	36.41	R222.03
Northern Cape	17,140	1.31	R3,106,788.30	28.71	R181.26	R3,106,788.30	40.83	R181.26
Eastern Cape	174,720	0.63	R15,311,062.74	20.21	R87.63	R15,311,062.74	35.57	R87.63
Free State	62,040	1.30	R11,212,125.87	29.76	R180.72	R11,212,125.87	43.03	R180.72
KwaZulu-Natal	215,760	0.60	R17,947,652.44	16.49	R83.18	R17,947,652.44	26.22	R83.18
Gauteng	139,400	0.83	R16,016,974.18	21.76	R114.90	R16,016,974.18	33.73	R114.90
North West	76,980	0.44	R4,692,539.27	15.66	R60.96	R4,692,539.27	30.20	R60.96
Mpumalanga	71,600	0.92	R9,148,725.26	26.30	R127.78	R9,148,725.26	42.81	R127.78
Limpopo	144,980	0.83	R16,658,112.75	21.07	R114.90	R16,658,112.75	32.08	R114.90
Two or more surface restoration								
Mean no of teeth	Pop est 2006	Treatment need	Average fee: R202.99	% of total	Per capita cost	Average fee: R202.99	% of total	Per capita cost
National	987,600	0.30	R60,201,310.27	11.32	R60.96	R60,201,310.27	17.37	R60.96
Western Cape	84,980	0.54	R9,289,359.05	13.71	R109.31	R9,289,359.05	17.93	R109.31
Northern Cape	17,140	0.73	R2,548,482.42	23.55	R148.69	R2,548,482.42	33.49	R148.69
Eastern Cape	174,720	0.14	R5,141,229.16	6.79	R29.43	R5,141,229.16	11.94	R29.43
Free State	62,040	0.27	R3,393,542.95	9.01	R54.70	R3,393,542.95	13.02	R54.70
KwaZulu-Natal	215,760	0.29	R12,844,263.60	11.80	R59.53	R12,844,263.60	18.76	R59.53
Gauteng	139,400	0.30	R8,497,430.79	11.55	R60.96	R8,497,430.79	17.89	R60.96
North West	76,980	0.12	R1,857,557.07	6.20	R24.13	R1,857,557.07	11.95	R24.13
Mpumalanga	71,600	0.31	R4,472,217.81	12.86	R62.46	R4,472,217.81	20.93	R62.46
Limpopo	144,980	0.30	R8,837,571.85	11.18	R60.96	R8,837,571.85	17.02	R60.96
Extraction								
Mean no of teeth	Pop est 2006	Treatment need	Fee code: 8201 Fee: R63.60	% of total	Per capita cost	Fee code: 8201 Fee: R63.60	% of total	Per capita cost
National	987,600	0.21	R13,331,004.56	2.51	R13.50	R13,331,004.56	3.85	R13.50
Western Cape	84,980	0.48	R2,581,287.82	3.81	R30.38	R2,581,287.82	4.98	R30.38
Northern Cape	17,140	0.41	R447,496.09	4.14	R26.11	R447,496.09	5.88	R26.11
Eastern Cape	174,720	0.29	R3,211,447.93	4.24	R18.38	R3,211,447.93	7.46	R18.38
Free State	62,040	0.17	R660,545.95	1.75	R10.65	R660,545.95	2.53	R10.65
KwaZulu-Natal	215,760	0.19	R2,659,704.33	2.44	R12.33	R2,659,704.33	3.89	R12.33
Gauteng	139,400	0.05	R443,292.00	0.60	R3.18	R443,292.00	0.93	R3.18
North West	76,980	0.05	R256,729.73	0.86	R3.34	R256,729.73	1.65	R3.34
Mpumalanga	71,600	0.15	R675,724.25	1.94	R9.44	R675,724.25	3.16	R9.44
Limpopo	144,980	0.27	R2,489,596.56	3.15	R17.17	R2,489,596.56	4.79	R17.17



Variable:	[1]	[5]	[6]	[5]	[6]
All procedures					
	Pop est 2006	Total expense	Total per capita cost	Total expense	Total per capita cost
National	987,600	R531,590,841.02	R538.27	R346,613,361.02	R350.97
Western Cape	84,980	R67,736,048.49	R797.08	R51,819,294.49	R609.78
Northern Cape	17,140	R10,820,009.05	R631.27	R7,609,687.05	R443.97
Eastern Cape	174,720	R75,771,128.77	R433.67	R43,046,072.77	R246.37
Free State	62,040	R37,679,389.38	R607.34	R26,059,297.38	R420.04
KwaZulu-Natal	215,760	R108,865,124.50	R504.57	R68,453,276.50	R317.27
Gauteng	139,400	R73,595,804.35	R527.95	R47,486,184.35	R340.65
North West	76,980	R29,957,007.29	R389.15	R15,538,653.29	R201.85
Mpumalanga	71,600	R34,782,381.23	R485.79	R21,371,701.23	R298.49
Limpopo	144,980	R79,077,332.53	R545.44	R51,922,578.53	R358.14

Treatment need group	%	Rand	%	Rand
National				
UPFS consultation				
Examination/bitewings	34.80	R187.30		
Prophylaxis	17.45	R93.92	26.76	R93.92
Topical F app/Dental sealant	12.57	R67.69	19.29	R67.69
Curative/Extraction	35.18	R189.35	53.95	R189.35
	100.0	R538.27	100.0	R350.97
Western Cape				
UPFS consultation				
Examination/bitewings	23.50	R187.30		
Prophylaxis	13.12	R104.54	17.14	R104.54
Topical F app/Dental sealant	18.01	R143.53	23.54	R143.53
Curative/Extraction	45.38	R361.71	59.32	R361.71
	100.0	R797.08	100.0	R609.78
Northern Cape				
UPFS consultation				
Examination/bitewings	29.67	R187.30		
Prophylaxis	12.84	R81.06	18.26	R81.06
Topical F app/Dental sealant	1.09	R6.86	1.54	R6.86
Curative/Extraction	56.40	R356.05	80.20	R356.05
	100.0	R631.27	100.0	R443.97
Eastern Cape				
UPFS consultation				
Examination/bitewings	43.19	R187.30		
Prophylaxis	24.25	R105.17	42.69	R105.17
Topical F app/Dental sealant	1.33	R5.77	2.34	R5.77
Curative/Extraction	31.23	R135.44	54.97	R135.44
	100.0	R433.67	100.0	R246.37
Free State				
UPFS consultation				
Examination/bitewings	30.84	R187.30		
Prophylaxis	12.83	R77.94	18.55	R77.94
Topical F app/Dental sealant	15.81	R96.03	22.86	R96.03
Curative/Extraction	40.52	R246.07	58.58	R246.07
	100.0	R607.34	100.0	R420.04
KwaZulu-Natal				
UPFS consultation				
Examination/bitewings	37.12	R187.30		
Prophylaxis	17.92	R90.43	28.50	R90.43
Topical F app/Dental sealant	14.23	R71.80	22.63	R71.80
Curative/Extraction	30.73	R155.04	48.87	R155.04
	100.0	R504.57	100.0	R317.27
Gauteng				
UPFS consultation				
Examination/bitewings	35.48	R187.30		
Prophylaxis	17.79	R93.92	27.57	R93.92
Topical F app/Dental sealant	12.82	R67.69	19.87	R67.69
Curative/Extraction	33.91	R179.04	52.56	R179.04
	100.0	R527.95	100.0	R340.65



North West					
UPFS consultation					
Examination/bitewings	48.13	R187.30			
Prophylaxis	21.50	R83.68		41.46	R83.68
Topical F app/Dental sealant	7.64	R29.75		14.74	R29.75
Curative/Extraction	22.72	R88.42		43.81	R88.42
	100.0	R389.15		100.0	R201.85
Mpumalanga					
UPFS consultation					
Examination/bitewings	38.56	R187.30			
Prophylaxis	17.53	R85.18		28.54	R85.18
Topical F app/Dental sealant	2.81	R13.63		4.57	R13.63
Curative/Extraction	41.10	R199.67		66.90	R199.67
	100.0	R485.79		100.0	R298.49
Limpopo					
UPFS consultation					
Examination/bitewings	34.34	R187.30			
Prophylaxis	17.86	R97.42		27.20	R97.42
Topical F app/Dental sealant	12.41	R67.69		18.90	R67.69
Curative/Extraction	35.39	R193.03		53.90	R193.03
	100.0	R545.44		100.0	R358.14

UPFS 2006 (H2)								
			Examination/bitewings included			Examination/bitewings excluded		
Variable:	[1]	[2]	[3]; [4]	[7]	[8]	[3]; [4]	[7]	[8]
Examination								
% of population	Pop est 2006	Treatment need	Fee code: 0924 Fee: R40.00	% of total	Per capita cost			
National	987,600	100	R39,504,000.00	18.23	R40.00			
Western Cape	84,980	100	R3,399,200.00	12.41	R40.00			
Northern Cape	17,140	100	R685,600.00	16.34	R40.00			
Eastern Cape	174,720	100	R6,988,800.00	21.79	R40.00			
Free State	62,040	100	R2,481,600.00	16.22	R40.00			
KwaZulu-Natal	215,760	100	R8,630,400.00	19.10	R40.00			
Gauteng	139,400	100	R5,576,000.00	19.41	R40.00			
North West	76,980	100	R3,079,200.00	25.80	R40.00			
Mpumalanga	71,600	100	R2,864,000.00	20.82	R40.00			
Limpopo	144,980	100	R5,799,200.00	19.62	R40.00			
Bitewings								
% of population	Pop est 2006	Treatment need	Fee code: 0914 Fee: R15.00	% of total	Per capita cost			
National	987,600	100	R29,628,000.00	13.67	R30.00			
Western Cape	84,980	100	R2,549,400.00	9.31	R30.00			
Northern Cape	17,140	100	R514,200.00	12.25	R30.00			
Eastern Cape	174,720	100	R5,241,600.00	16.34	R30.00			
Free State	62,040	100	R1,861,200.00	12.16	R30.00			
KwaZulu-Natal	215,760	100	R6,472,800.00	14.33	R30.00			
Gauteng	139,400	100	R4,182,000.00	14.56	R30.00			
North West	76,980	100	R2,309,400.00	19.35	R30.00			
Mpumalanga	71,600	100	R2,148,000.00	15.61	R30.00			
Limpopo	144,980	100	R4,349,400.00	14.72	R30.00			
Prophylaxis								
Mean no of sextants	Pop est 2006	Treatment need	Fee code: 0924 Fee: R40.00	% of total	Per capita cost	Fee code: 0924 Fee: R40.00	% of total	Per capita cost
National	987,600	3.31	R29,707,008.00	13.71	R30.08	R29,707,008.00	20.13	R30.08
Western Cape	84,980	3.27	R2,845,130.40	10.39	R33.48	R2,845,130.40	13.27	R33.48
Northern Cape	17,140	2.30	R444,954.40	10.60	R25.96	R444,954.40	14.85	R25.96
Eastern Cape	174,720	2.88	R5,884,569.60	18.35	R33.68	R5,884,569.60	29.66	R33.68
Free State	62,040	3.95	R1,548,518.40	10.12	R24.96	R1,548,518.40	14.13	R24.96
KwaZulu-Natal	215,760	3.57	R6,248,409.60	13.83	R28.96	R6,248,409.60	20.78	R28.96
Gauteng	139,400	3.31	R4,193,152.00	14.60	R30.08	R4,193,152.00	22.11	R30.08
North West	76,980	2.57	R2,063,064.00	17.28	R26.80	R2,063,064.00	31.50	R26.80
Mpumalanga	71,600	1.97	R1,953,248.00	14.20	R27.28	R1,953,248.00	22.34	R27.28
Limpopo	144,980	4.41	R4,523,376.00	15.31	R31.20	R4,523,376.00	23.31	R31.20



Consultation								
% needing care	Pop est 2006	Treatment need	Average fee: R57.50	% of total	Per capita cost	Average fee: R57.50	% of total	Per capita cost
National	987,600	57.67	R32,751,801.19	15.11	R33.16	R32,751,801.19	22.19	R33.16
Western Cape	84,980	85.20	R4,163,170.20	15.20	R48.99	R4,163,170.20	19.42	R48.99
Northern Cape	17,140	62.20	R613,012.10	14.61	R35.77	R613,012.10	20.46	R35.77
Eastern Cape	174,720	49.70	R4,993,060.80	15.57	R28.58	R4,993,060.80	25.17	R28.58
Free State	62,040	66.60	R2,375,821.80	15.53	R38.30	R2,375,821.80	21.68	R38.30
KwaZulu-Natal	215,760	59.00	R7,319,658.00	16.20	R33.93	R7,319,658.00	24.34	R33.93
Gauteng	139,400	47.10	R3,775,300.50	13.14	R27.08	R3,775,300.50	19.91	R27.08
North West	76,980	31.30	R1,385,447.55	11.61	R18.00	R1,385,447.55	21.16	R18.00
Mpumalanga	71,600	44.90	R1,848,533.00	13.44	R25.82	R1,848,533.00	21.14	R25.82
Limpopo	144,980	24.10	R2,009,060.35	6.80	R13.86	R2,009,060.35	10.35	R13.86
Topical fluoride application								
% of population	Pop est 2006	Treatment need	Fee code: 0924 Fee: R40.00	% of total	Per capita cost	Fee code: 0924 Fee: R40.00	% of total	Per capita cost
National	987,600	9.20	R3,633,293.01	1.68	R3.68	R3,633,293.01	2.46	R3.68
Western Cape	84,980	3.30	R112,173.60	0.41	R1.32	R112,173.60	0.52	R1.32
Northern Cape	17,140	2.00	R13,712.00	0.33	R0.80	R13,712.00	0.46	R0.80
Eastern Cape	174,720	7.20	R503,193.60	1.57	R2.88	R503,193.60	2.54	R2.88
Free State	62,040	3.80	R94,300.80	0.62	R1.52	R94,300.80	0.86	R1.52
KwaZulu-Natal	215,760	10.80	R932,083.20	2.06	R4.32	R932,083.20	3.10	R4.32
Gauteng	139,400	9.20	R512,840.26	1.79	R3.68	R512,840.26	2.70	R3.68
North West	76,980	12.30	R378,741.60	3.17	R4.92	R378,741.60	5.78	R4.92
Mpumalanga	71,600	12.40	R355,136.00	2.58	R4.96	R355,136.00	4.06	R4.96
Limpopo	144,980	9.20	R533,368.59	1.80	R3.68	R533,368.59	2.75	R3.68
Fissure sealant								
Mean no of teeth	Pop est 2006	Treatment need	Fee code: 0914 Fee: R15.00	% of total	Per capita cost	Fee code: 0914 Fee: R15.00	% of total	Per capita cost
National	987,600	1.48	R21,862,534.30	10.09	R22.14	R21,862,534.30	14.81	R22.14
Western Cape	84,980	3.38	R4,302,600.58	15.71	R50.63	R4,302,600.58	20.07	R50.63
Northern Cape	17,140	0.13	R34,277.34	0.82	R2.00	R34,277.34	1.14	R2.00
Eastern Cape	174,720	0.03	R74,350.79	0.23	R0.43	R74,350.79	0.37	R0.43
Free State	62,040	2.23	R2,079,198.91	13.59	R33.51	R2,079,198.91	18.97	R33.51
KwaZulu-Natal	215,760	1.55	R5,015,149.71	11.10	R23.24	R5,015,149.71	16.68	R23.24
Gauteng	139,400	1.48	R3,085,902.47	10.74	R22.14	R3,085,902.47	16.27	R22.14
North West	76,980	0.52	R604,192.39	5.06	R7.85	R604,192.39	9.23	R7.85
Mpumalanga	71,600	0.14	R147,261.62	1.07	R2.06	R147,261.62	1.68	R2.06
Limpopo	144,980	1.48	R3,209,427.12	10.86	R22.14	R3,209,427.12	16.54	R22.14
One surface restoration								
Mean no of teeth	Pop est 2006	Treatment need	Fee code: 0921 Fee: R45.00	% of total	Per capita cost	Fee code: 0921 Fee: R45.00	% of total	Per capita cost
National	987,600	0.83	R36,842,412.99	17.00	R37.30	R36,842,412.99	24.97	R37.30
Western Cape	84,980	1.60	R6,125,900.74	22.37	R72.09	R6,125,900.74	28.58	R72.09
Northern Cape	17,140	1.31	R1,008,697.50	24.04	R58.85	R1,008,697.50	33.67	R58.85
Eastern Cape	174,720	0.63	R4,971,124.27	15.50	R28.45	R4,971,124.27	25.06	R28.45
Free State	62,040	1.30	R3,640,300.61	23.79	R58.68	R3,640,300.61	33.22	R58.68
KwaZulu-Natal	215,760	0.60	R5,827,159.88	12.90	R27.01	R5,827,159.88	19.38	R27.01
Gauteng	139,400	0.83	R5,200,316.29	18.11	R37.30	R5,200,316.29	27.42	R37.30
North West	76,980	0.44	R1,523,551.71	12.76	R19.79	R1,523,551.71	23.27	R19.79
Mpumalanga	71,600	0.92	R2,970,365.34	21.59	R41.49	R2,970,365.34	33.97	R41.49
Limpopo	144,980	0.83	R5,408,478.16	18.30	R37.30	R5,408,478.16	27.87	R37.30
Two or more surface restoration								
Mean no of teeth	Pop est 2006	Treatment need	Fee code: 0921 Fee: R45.00	% of total	Per capita cost	Fee code: 0921 Fee: R45.00	% of total	Per capita cost
National	987,600	0.30	R13,345,848.52	6.16	R13.51	R13,345,848.52	9.04	R13.51
Western Cape	84,980	0.54	R2,059,330.24	7.52	R24.23	R2,059,330.24	9.61	R24.23
Northern Cape	17,140	0.73	R564,965.45	13.46	R32.96	R564,965.45	18.86	R32.96
Eastern Cape	174,720	0.14	R1,139,743.73	3.55	R6.52	R1,139,743.73	5.75	R6.52
Free State	62,040	0.27	R752,304.39	4.92	R12.13	R752,304.39	6.87	R12.13
KwaZulu-Natal	215,760	0.29	R2,847,406.40	6.30	R13.20	R2,847,406.40	9.47	R13.20
Gauteng	139,400	0.30	R1,883,770.03	6.56	R13.51	R1,883,770.03	9.93	R13.51
North West	76,980	0.12	R411,796.27	3.45	R5.35	R411,796.27	6.29	R5.35
Mpumalanga	71,600	0.31	R991,432.60	7.21	R13.85	R991,432.60	11.34	R13.85
Limpopo	144,980	0.30	R1,959,174.89	6.63	R13.51	R1,959,174.89	10.10	R13.51



Extraction								
Mean no of teeth	Pop est 2006	Treatment need	Fee code: 0921 Fee: R45.00	% of total	Per capita cost	Fee code: 0921 Fee: R45.00	% of total	Per capita cost
National	987,600	0.21	R9,432,314.55	4.35	R9.55	R9,432,314.55	6.39	R9.55
Western Cape	84,980	0.48	R1,826,382.89	6.67	R21.49	R1,826,382.89	8.52	R21.49
Northern Cape	17,140	0.41	R316,624.59	7.55	R18.47	R316,624.59	10.57	R18.47
Eastern Cape	174,720	0.29	R2,272,250.90	7.09	R13.01	R2,272,250.90	11.45	R13.01
Free State	62,040	0.17	R467,367.42	3.05	R7.53	R467,367.42	4.27	R7.53
KwaZulu-Natal	215,760	0.19	R1,881,866.27	4.17	R8.72	R1,881,866.27	6.26	R8.72
Gauteng	139,400	0.05	R313,650.00	1.09	R2.25	R313,650.00	1.65	R2.25
North West	76,980	0.05	R181,648.40	1.52	R2.36	R181,648.40	2.77	R2.36
Mpumalanga	71,600	0.15	R478,106.78	3.48	R6.68	R478,106.78	5.47	R6.68
Limpopo	144,980	0.27	R1,761,507.00	5.96	R12.15	R1,761,507.00	9.08	R12.15
Variable:	[1]		[5]		[6]	[5]		[6]

All procedures							
	Pop est 2006	Total expense	Total per capita cost	Total expense	Total per capita cost		Total per capita cost
National	987,600	R216,707,212.56	R219.43	R147,575,212.56	R149.43		R149.43
Western Cape	84,980	R27,383,288.66	R322.23	R21,434,688.66	R252.23		R252.23
Northern Cape	17,140	R4,196,043.38	R244.81	R2,996,243.38	R174.81		R174.81
Eastern Cape	174,720	R32,068,693.68	R183.54	R19,838,293.68	R113.54		R113.54
Free State	62,040	R15,300,612.33	R246.62	R10,957,812.33	R176.62		R176.62
KwaZulu-Natal	215,760	R45,174,933.07	R209.38	R30,071,733.07	R139.38		R139.38
Gauteng	139,400	R28,722,931.56	R206.05	R18,964,931.56	R136.05		R136.05
North West	76,980	R11,937,041.92	R155.07	R6,548,441.92	R85.07		R85.07
Mpumalanga	71,600	R13,756,083.34	R192.12	R8,744,083.34	R122.12		R122.12
Limpopo	144,980	R29,552,992.11	R203.84	R19,404,392.11	R133.84		R133.84

Treatment need group	%	Rand	%	Rand
National				
UPFS consultation	15.11	R33.16	22.19	R33.16
Examination/bitewings	31.90	R70.00		
Prophylaxis	13.71	R30.08	20.13	R30.08
Topical F app/Dental sealant	11.77	R25.82	17.28	R25.82
Curative/Extraction	27.51	R60.37	40.40	R60.37
	100.0	R219.43	100.0	R149.43
Western Cape				
UPFS consultation	15.20	R48.99	19.42	R48.99
Examination/bitewings	21.72	R70.00		
Prophylaxis	10.39	R33.48	13.27	R33.48
Topical F app/Dental sealant	16.12	R51.95	20.60	R51.95
Curative/Extraction	36.56	R117.81	46.71	R117.81
	100.0	R322.23	100.0	R252.23
Northern Cape				
UPFS consultation	14.61	R35.77	20.46	R35.77
Examination/bitewings	28.59	R70.00		
Prophylaxis	10.60	R25.96	14.85	R25.96
Topical F app/Dental sealant	1.14	R2.80	1.60	R2.80
Curative/Extraction	45.05	R110.29	63.09	R110.29
	100.0	R244.81	100.0	R174.81
Eastern Cape				
UPFS consultation	15.57	R28.58	25.17	R28.58
Examination/bitewings	38.14	R70.00		
Prophylaxis	18.35	R33.68	29.66	R33.68
Topical F app/Dental sealant	1.80	R3.31	2.91	R3.31
Curative/Extraction	26.14	R47.98	42.26	R47.98
	100.0	R183.54	100.0	R113.54
Free State				
UPFS consultation	15.53	R38.30	21.68	R38.30
Examination/bitewings	28.38	R70.00		
Prophylaxis	10.12	R24.96	14.13	R24.96
Topical F app/Dental sealant	14.21	R35.03	19.84	R35.03
Curative/Extraction	31.76	R78.34	44.35	R78.34
	100.0	R246.62	100.0	R176.62
KwaZulu-Natal				
UPFS consultation	16.20	R33.93	24.34	R33.93
Examination/bitewings	33.43	R70.00		
Prophylaxis	13.83	R28.96	20.78	R28.96
Topical F app/Dental sealant	13.16	R27.56	19.78	R27.56
Curative/Extraction	23.37	R48.93	35.10	R48.93
	100.0	R209.38	100.0	R139.38



Gauteng					
UPFS consultation	13.14	R27.08		19.91	R27.08
Examination/bitewings	33.97	R70.00			
Prophylaxis	14.60	R30.08		22.11	R30.08
Topical F app/Dental sealant	12.53	R25.82		18.98	R25.82
Curative/Extraction	25.76	R53.07		39.01	R53.07
	100.0	R206.05		100.0	R136.05
North West					
UPFS consultation	11.61	R18.00		21.16	R18.00
Examination/bitewings	45.14	R70.00			
Prophylaxis	17.28	R26.80		31.50	R26.80
Topical F app/Dental sealant	8.23	R12.77		15.01	R12.77
Curative/Extraction	17.73	R27.50		32.33	R27.50
	100.0	R155.07		100.0	R85.07
Mpumalanga					
UPFS consultation	13.44	R25.82		21.14	R25.82
Examination/bitewings	36.43	R70.00			
Prophylaxis	14.20	R27.28		22.34	R27.28
Topical F app/Dental sealant	3.65	R7.02		5.75	R7.02
Curative/Extraction	32.28	R62.01		50.78	R62.01
	100.0	R192.12		100.0	R122.12
Limpopo					
UPFS consultation	6.80	R13.86		10.35	R13.86
Examination/bitewings	34.34	R70.00			
Prophylaxis	15.31	R31.20		23.31	R31.20
Topical F app/Dental sealant	12.66	R25.82		19.29	R25.82
Curative/Extraction	30.89	R62.97		47.05	R62.97
	100.0	R203.84		100.0	R133.84

UPFS 2006 (HG)								
Variable:	[1]	[2]	Examination/bitewings included			Examination/bitewings excluded		
			[3]; [4]	[7]	[8]	[3]; [4]	[7]	[8]
Examination								
% of population	Pop est 2006	Treatment need	Fee code: 0924 Fee: R81.00	% of total	Per capita cost			
National	987,600	100	R79,995,600.00	18.62	R81.00			
Western Cape	84,980	100	R6,883,380.00	12.68	R81.00			
Northern Cape	17,140	100	R1,388,340.00	16.87	R81.00			
Eastern Cape	174,720	100	R14,152,320.00	22.43	R81.00			
Free State	62,040	100	R5,025,240.00	16.57	R81.00			
KwaZulu-Natal	215,760	100	R17,476,560.00	19.53	R81.00			
Gauteng	139,400	100	R11,291,400.00	19.92	R81.00			
North West	76,980	100	R6,235,380.00	26.07	R81.00			
Mpumalanga	71,600	100	R5,799,600.00	21.32	R81.00			
Limpopo	144,980	100	R11,743,380.00	19.60	R81.00			
Bitewings								
% of population	Pop est 2006	Treatment need	Fee code: 0914 Fee: R33.00	% of total	Per capita cost			
National	987,600	100	R65,181,600.00	15.17	R66.00			
Western Cape	84,980	100	R5,608,680.00	10.34	R66.00			
Northern Cape	17,140	100	R1,131,240.00	13.74	R66.00			
Eastern Cape	174,720	100	R11,531,520.00	18.27	R66.00			
Free State	62,040	100	R4,094,640.00	13.50	R66.00			
KwaZulu-Natal	215,760	100	R14,240,160.00	15.91	R66.00			
Gauteng	139,400	100	R9,200,400.00	16.23	R66.00			
North West	76,980	100	R5,080,680.00	21.24	R66.00			
Mpumalanga	71,600	100	R4,725,600.00	17.37	R66.00			
Limpopo	144,980	100	R9,568,680.00	15.97	R66.00			
Prophylaxis								
Mean no of sextants	Pop est 2006	Treatment need	Fee code: 0924 Fee: R81.00	% of total	Per capita cost	Fee code: 0924 Fee: R81.00	% of total	Per capita cost
National	987,600	3.31	R60,156,691.20	14.00	R60.91	R60,156,691.20	21.15	R60.91
Western Cape	84,980	3.27	R5,761,389.06	10.62	R67.80	R5,761,389.06	13.79	R67.80
Northern Cape	17,140	2.30	R901,032.66	10.95	R52.57	R901,032.66	15.77	R52.57
Eastern Cape	174,720	2.88	R11,916,253.44	18.88	R68.20	R11,916,253.44	31.84	R68.20
Free State	62,040	3.95	R3,135,749.76	10.34	R50.54	R3,135,749.76	14.78	R50.54
KwaZulu-Natal	215,760	3.57	R12,653,029.44	14.14	R58.64	R12,653,029.44	21.91	R58.64
Gauteng	139,400	3.31	R8,491,132.80	14.98	R60.91	R8,491,132.80	23.46	R60.91
North West	76,980	2.57	R4,177,704.60	17.47	R54.27	R4,177,704.60	33.15	R54.27
Mpumalanga	71,600	1.97	R3,955,327.20	14.54	R55.24	R3,955,327.20	23.72	R55.24
Limpopo	144,980	4.41	R9,159,836.40	15.29	R63.18	R9,159,836.40	23.73	R63.18



Consultation								
% needing care	Pop est 2006	Treatment need	Average fee: R87.00	% of total	Per capita cost	Average fee: R87.00	% of total	Per capita cost
National	987,600	57.67	R49,554,899.20	11.54	R50.18	R49,554,899.20	17.42	R50.18
Western Cape	84,980	85.20	R6,299,057.52	11.61	R74.12	R6,299,057.52	15.08	R74.12
Northern Cape	17,140	62.20	R927,513.96	11.27	R54.11	R927,513.96	16.24	R54.11
Eastern Cape	174,720	49.70	R7,554,718.08	11.97	R43.24	R7,554,718.08	20.19	R43.24
Free State	62,040	66.60	R3,594,721.68	11.85	R57.94	R3,594,721.68	16.94	R57.94
KwaZulu-Natal	215,760	59.00	R11,074,960.80	12.38	R51.33	R11,074,960.80	19.17	R51.33
Gauteng	139,400	47.10	R5,712,193.80	10.08	R40.98	R5,712,193.80	15.78	R40.98
North West	76,980	31.30	R2,096,242.38	8.76	R27.23	R2,096,242.38	16.63	R27.23
Mpumalanga	71,600	44.90	R2,796,910.80	10.28	R39.06	R2,796,910.80	16.77	R39.06
Limpopo	144,980	24.10	R3,039,795.66	5.07	R20.97	R3,039,795.66	7.88	R20.97
Topical fluoride application								
% of population	Pop est 2006	Treatment need	Fee code: 0924 Fee: R81.00	% of total	Per capita cost	Fee code: 0924 Fee: R81.00	% of total	Per capita cost
National	987,600	9.20	R7,357,418.34	1.71	R7.45	R7,357,418.34	2.59	R7.45
Western Cape	84,980	3.30	R227,151.54	0.42	R2.67	R227,151.54	0.54	R2.67
Northern Cape	17,140	2.00	R27,766.80	0.34	R1.62	R27,766.80	0.49	R1.62
Eastern Cape	174,720	7.20	R1,018,967.04	1.61	R5.83	R1,018,967.04	2.72	R5.83
Free State	62,040	3.80	R190,959.12	0.63	R3.08	R190,959.12	0.90	R3.08
KwaZulu-Natal	215,760	10.80	R1,887,468.48	2.11	R8.75	R1,887,468.48	3.27	R8.75
Gauteng	139,400	9.20	R1,038,501.54	1.83	R7.45	R1,038,501.54	2.87	R7.45
North West	76,980	12.30	R766,951.74	3.21	R9.96	R766,951.74	6.08	R9.96
Mpumalanga	71,600	12.40	R719,150.40	2.64	R10.04	R719,150.40	4.31	R10.04
Limpopo	144,980	9.20	R1,080,071.40	1.80	R7.45	R1,080,071.40	2.80	R7.45
Fissure sealant								
Mean no of teeth	Pop est 2006	Treatment need	Fee code: 0914 Fee: R33.00	% of total	Per capita cost	Fee code: 0914 Fee: R33.00	% of total	Per capita cost
National	987,600	1.48	R48,097,575.46	11.20	R48.70	R48,097,575.46	16.91	R48.70
Western Cape	84,980	3.38	R9,465,721.28	17.44	R111.39	R9,465,721.28	22.66	R111.39
Northern Cape	17,140	0.13	R75,410.16	0.92	R4.40	R75,410.16	1.32	R4.40
Eastern Cape	174,720	0.03	R163,571.73	0.26	R0.94	R163,571.73	0.44	R0.94
Free State	62,040	2.23	R4,574,237.61	15.08	R73.73	R4,574,237.61	21.56	R73.73
KwaZulu-Natal	215,760	1.55	R11,033,329.37	12.33	R51.14	R11,033,329.37	19.10	R51.14
Gauteng	139,400	1.48	R6,788,985.44	11.98	R48.70	R6,788,985.44	18.75	R48.70
North West	76,980	0.52	R1,329,223.25	5.56	R17.27	R1,329,223.25	10.55	R17.27
Mpumalanga	71,600	0.14	R323,975.56	1.19	R4.52	R323,975.56	1.94	R4.52
Limpopo	144,980	1.48	R7,060,739.66	11.79	R48.70	R7,060,739.66	18.29	R48.70
One surface restoration								
Mean no of teeth	Pop est 2006	Treatment need	Fee code: 0921 Fee: R90.00	% of total	Per capita cost	Fee code: 0921 Fee: R90.00	% of total	Per capita cost
National	987,600	0.83	R73,684,825.98	17.15	R74.61	R73,684,825.98	25.91	R74.61
Western Cape	84,980	1.60	R12,251,801.48	22.58	R144.17	R12,251,801.48	29.33	R144.17
Northern Cape	17,140	1.31	R2,017,395.00	24.51	R117.70	R2,017,395.00	35.32	R117.70
Eastern Cape	174,720	0.63	R9,942,248.53	15.76	R56.90	R9,942,248.53	26.57	R56.90
Free State	62,040	1.30	R7,280,601.21	24.00	R117.35	R7,280,601.21	34.32	R117.35
KwaZulu-Natal	215,760	0.60	R11,654,319.77	13.02	R54.02	R11,654,319.77	20.18	R54.02
Gauteng	139,400	0.83	R10,400,632.59	18.35	R74.61	R10,400,632.59	28.73	R74.61
North West	76,980	0.44	R3,047,103.42	12.74	R39.58	R3,047,103.42	24.18	R39.58
Mpumalanga	71,600	0.92	R5,940,730.69	21.84	R82.97	R5,940,730.69	35.63	R82.97
Limpopo	144,980	0.83	R10,816,956.33	18.06	R74.61	R10,816,956.33	28.02	R74.61
Two or more surface restoration								
Mean no of teeth	Pop est 2006	Treatment need	Fee code: 0921 Fee: R90.00	% of total	Per capita cost	Fee code: 0921 Fee: R90.00	% of total	Per capita cost
National	987,600	0.30	R26,691,697.04	6.21	R27.03	R26,691,697.04	9.39	R27.03
Western Cape	84,980	0.54	R4,118,660.48	7.59	R48.47	R4,118,660.48	9.86	R48.47
Northern Cape	17,140	0.73	R1,129,930.90	13.73	R65.92	R1,129,930.90	19.78	R65.92
Eastern Cape	174,720	0.14	R2,279,487.45	3.61	R13.05	R2,279,487.45	6.09	R13.05
Free State	62,040	0.27	R1,504,608.78	4.96	R24.25	R1,504,608.78	7.09	R24.25
KwaZulu-Natal	215,760	0.29	R5,694,812.81	6.36	R26.39	R5,694,812.81	9.86	R26.39
Gauteng	139,400	0.30	R3,767,540.06	6.65	R27.03	R3,767,540.06	10.41	R27.03
North West	76,980	0.12	R823,592.55	3.44	R10.70	R823,592.55	6.53	R10.70
Mpumalanga	71,600	0.31	R1,982,865.20	7.29	R27.69	R1,982,865.20	11.89	R27.69
Limpopo	144,980	0.30	R3,918,349.77	6.54	R27.03	R3,918,349.77	10.15	R27.03



Extraction								
Mean no of teeth	Pop est 2006	Treatment need	Fee code: 0921 Fee: R90.00	% of total	Per capita cost	Fee code: 0921 Fee: R90.00	% of total	Per capita cost
National	987,600	0.21	R18,864,629.10	4.39	R19.10	R18,864,629.10	6.63	R19.10
Western Cape	84,980	0.48	R3,652,765.79	6.73	R42.98	R3,652,765.79	8.74	R42.98
Northern Cape	17,140	0.41	R633,249.18	7.69	R36.95	R633,249.18	11.09	R36.95
Eastern Cape	174,720	0.29	R4,544,501.79	7.20	R26.01	R4,544,501.79	12.14	R26.01
Free State	62,040	0.17	R934,734.84	3.08	R15.07	R934,734.84	4.41	R15.07
KwaZulu-Natal	215,760	0.19	R3,763,732.54	4.21	R17.44	R3,763,732.54	6.52	R17.44
Gauteng	139,400	0.05	R0.00	0.00	R0.00	R0.00	0.00	R0.00
North West	76,980	0.05	R363,296.79	1.52	R4.72	R363,296.79	2.88	R4.72
Mpumalanga	71,600	0.15	R956,213.56	3.52	R13.35	R956,213.56	5.73	R13.35
Limpopo	144,980	0.27	R3,523,014.00	5.88	R24.30	R3,523,014.00	9.13	R24.30
Variable:	[1]		[5]		[6]	[5]		[6]

All procedures								
	Pop est 2006		Total expense		Total per capita cost	Total expense		Total per capita cost
National	987,600		R429,584,936.31		R434.98	R284,407,736.31		R287.98
Western Cape	84,980		R54,268,607.16		R638.60	R41,776,547.16		R491.60
Northern Cape	17,140		R8,231,878.65		R480.27	R5,712,298.65		R333.27
Eastern Cape	174,720		R63,103,588.07		R361.17	R37,419,748.07		R214.17
Free State	62,040		R30,335,493.01		R488.97	R21,215,613.01		R341.97
KwaZulu-Natal	215,760		R89,478,373.21		R414.71	R57,761,653.21		R267.71
Gauteng	139,400		R56,690,786.22		R406.68	R36,198,986.22		R259.68
North West	76,980		R23,920,174.73		R310.73	R12,604,114.73		R163.73
Mpumalanga	71,600		R27,200,373.40		R379.89	R16,675,173.40		R232.89
Limpopo	144,980		R59,910,823.22		R413.24	R38,598,763.22		R266.24

Treatment need group	%	Rand	%	Rand
National				
UPFS consultation	11.54	R50.18	17.42	R50.18
Examination/bitewings	33.79	R147.00		
Prophylaxis	14.00	R60.91	21.15	R60.91
Topical F app/Dental sealant	12.91	R56.15	19.50	R56.15
Curative/Extraction	27.76	R120.74	41.93	R120.74
	100.0	R434.98	100.0	R287.98
Western Cape				
UPFS consultation	11.61	R74.12	15.08	R74.12
Examination/bitewings	23.02	R147.00		
Prophylaxis	10.62	R67.80	13.79	R67.80
Topical F app/Dental sealant	17.86	R114.06	23.20	R114.06
Curative/Extraction	36.90	R235.62	47.93	R235.62
	100.0	R638.60	100.0	R491.60
Northern Cape				
UPFS consultation	11.27	R54.11	16.24	R54.11
Examination/bitewings	30.61	R147.00		
Prophylaxis	10.95	R52.57	15.77	R52.57
Topical F app/Dental sealant	1.25	R6.02	1.81	R6.02
Curative/Extraction	45.93	R220.57	66.18	R220.57
	100.0	R480.27	100.0	R333.27
Eastern Cape				
UPFS consultation	11.97	R43.24	20.19	R43.24
Examination/bitewings	40.70	R147.00		
Prophylaxis	18.88	R68.20	31.84	R68.20
Topical F app/Dental sealant	1.87	R6.77	3.16	R6.77
Curative/Extraction	26.57	R95.96	44.81	R95.96
	100.0	R361.17	100.0	R214.17
Free State				
UPFS consultation	11.85	R57.94	16.94	R57.94
Examination/bitewings	30.06	R147.00		
Prophylaxis	10.34	R50.54	14.78	R50.54
Topical F app/Dental sealant	15.71	R76.81	22.46	R76.81
Curative/Extraction	32.04	R156.67	45.82	R156.67
	100.0	R488.97	100.0	R341.97



KwaZulu-Natal					
UPFS consultation	12.38	R51.33		19.17	R51.33
Examination/bitewings	35.45	R147.00			
Prophylaxis	14.14	R58.64		21.91	R58.64
Topical F app/Dental sealant	14.44	R59.89		22.37	R59.89
Curative/Extraction	23.60	R97.85		36.55	R97.85
	100.0	R414.71		100.0	R267.71
Gauteng					
UPFS consultation	10.08	R40.98		15.78	R40.98
Examination/bitewings	36.15	R147.00			
Prophylaxis	14.98	R60.91		23.46	R60.91
Topical F app/Dental sealant	13.81	R56.15		21.62	R56.15
Curative/Extraction	24.99	R101.64		39.14	R101.64
	100.0	R406.68		100.0	R259.68
North West					
UPFS consultation	8.76	R27.23		16.63	R27.23
Examination/bitewings	47.31	R147.00			
Prophylaxis	17.47	R54.27		33.15	R54.27
Topical F app/Dental sealant	8.76	R27.23		16.63	R27.23
Curative/Extraction	17.70	R55.00		33.59	R55.00
	100.0	R310.73		100.0	R163.73
Mpumalanga					
UPFS consultation	10.28	R39.06		16.77	R39.06
Examination/bitewings	38.70	R147.00			
Prophylaxis	14.54	R55.24		23.72	R55.24
Topical F app/Dental sealant	3.83	R14.57		6.26	R14.57
Curative/Extraction	32.65	R124.02		53.25	R124.02
	100.0	R379.89		100.0	R232.89
Limpopo					
UPFS consultation	5.07	R20.97		7.88	R20.97
Examination/bitewings	35.57	R147.00			
Prophylaxis	15.29	R63.18		23.73	R63.18
Topical F app/Dental sealant	13.59	R56.15		21.09	R56.15
Curative/Extraction	30.48	R125.94		47.30	R125.94
	100.0	R413.24		100.0	R266.24

ANNEXURE 4: THE WORLD HEALTH ORGANIZATION/FÉDÉRATION DENTAIRE INTERNATIONALE HUMAN RESOURCES PLANNING MODEL: NATIONAL REQUIREMENTS TO DELIVER THE MINIMUM PACKAGE OF ORAL CARE TO 4- TO 15-YEAR- OLD SOUTH AFRICAN CHILDREN

Note: Data is needed for all shaded fields

Anticipated % caries reduction due to water fluoridation		0	National	
Variable	Formula	Value		
		4- to 5- year-olds	6- to 15- year-olds	
(A) RESTORATIVE CARE, ARRESTING CARE AND EXTRACTIONS				
[1] Number of age intervals		2	10	
[2] Predicted dmft or DMFT		2.44	1.86	
[3] Predicted dt or DT		1.95	1.34	
[4] Predicted mt or MT		0.35	0.29	
[5] Predicted ft or FT		0.16	0.23	
[6] Restoration fraction		0.50	0.60	
[7] New fillings : Teeth (NFT)	[6] x [2]	1.22	1.12	
[8] Mean replacement period in years for a restoration		15	15	
[9] Replacement fillings : Teeth (RFT)	([1] x [7]) / (2 x [8])	0.08	0.37	
[10] Ratio Surfaces / Teeth		1.50	1.50	
[11] Sealants, arresting care and remineralisation	(1 - [6]) x [2]	1.22	0.74	
[12] New fillings : Surfaces (NFS)	[7] x [10]	1.83	1.67	
[13] Replacement fillings : Surfaces (RFS)	[9] x [10]	0.12	0.56	
[14] Extraction	[4]	0.35	0.29	
(B) TREATMENT TIME REQUIREMENTS				
[15] Number of Group Preventive Care sessions		1	1	
[16] Time per Group Preventive Care session		15	15	
[17] Group Preventive Care (minutes)	[15] x [16]	15	15	
[18] Number of Individual Preventive Care sessions		0	4	
[19] Time per Individual Preventive Care session		15	15	
[20] Individual Preventive Care (minutes)	[18] x [19]	0	60	
[21] Time per fissure sealant		5	5	
[22] Arresting Care (minutes)	[11] x [21]	6.10	3.72	
[23] Mean number of sextants in need of scaling		0	3.31	
[24] Time per scaling per sextant		5	5	
[25] Number of scaling sessions		0	2	
[26] Periodontal Care (prophylaxis only) (minutes)	[23] x [24] x [25]	0.00	33.10	
[27] % in need of Surgical Care		1	10	
[28] Time for Surgical Care		60	60	
[29] Surgical Care (minutes)	[27] / 100 x [28]	0.60	6.00	
[30] Time per restoration (new or replacement)		15	15	
[31] Restorative Care for new fillings (NFS) (minutes)	[12] x [30]	27.45	25.11	



[32] Restorative Care for replacement fillings (RFS) (minutes)	[13] x [30]	1.83	8.37
[33] Time per extraction		7.5	7.5
[34] Extraction (minutes)	[14] x [33]	2.63	2.18
[35] Total minutes of need per cohort	[17]+[20]+[22]+ [26]+[29]+[31]+ [32]+[34]	53.61	153.48
Total minutes of need per year:			
[36] For total human resources	[35] / [1]	26.80	15.35
[37] For Oral Hygienists	([17]+[20]+[22]+[26])/[1]	10.55	11.18
[38] For Dental Therapists/Dentists	([29]+[31]+[32]+[34])/[1]	16.25	4.17
[39] % Demand (utilization)		25.7	25.7
Minutes of demand per year:			
[40] For total human resources	[36] x [39] /100	6.90	3.95
[41] For Oral Hygienists	[37] x [39] /100	2.72	2.88
[42] For Dental Therapists/Dentists	[38] x [39] /100	4.18	1.07
(C) HUMAN RESOURCES CALCULATIONS			
[43] Working year (hours)		1760	1760
[44] Working year (minutes)	[43] x 60	105,600	105,600
Human resources : population ratio:			
[45] For total human resources	[44] / [40]	15,307	26,731
[46] For Oral Hygienists	[44] / [41]	38,887	36,689
[47] For Dental Therapists/Dentists	[44] / [42]	25,243	98,489
[48] Population size		2,035,320	10,087,080
Number of human resources required:			
[49] Total human resources	[48] / [45]	133	377
[50] Oral Hygienist	[48] / [46]	52	275
[51] Dental Therapist/Dentist	[48] / [47]	81	102
[52] Dentists (Ratio 1 Dentist : 5 Dental Therapists)	[51] / 6	13	17
[53] Dental Therapists (Ratio 1 Dentist : 5 Dental Therapists)	[51] / 6 x 5	67	85
[54] Dental Assistants (Ratio 1 Dental Therapist/Dentist : 1.5 Dental Assistants)	[51] x 1.5	121	154

Summary for 4-15-year-olds	
Total human resources	510
Oral Hygienist	327
Dental Therapist/Dentist	183
Dentists (Ratio 1 Dentist : 5 Dental Therapists)	31
Dental Therapists (Ratio 1 Dentist : 5 Dental Therapists)	153
Dental Assistants (Ratio 1 Dental Therapist/Dental Therapist : 1.5 Dental Assistants)	275

ANNEXURE 5: A “SERVICE TARGETS METHOD” MODEL FOR HUMAN RESOURCES PLANNING: REQUIREMENTS TO DELIVER THE MINIMUM PACKAGE OF ORAL CARE TO 4- TO 15-YEAR-OLD SOUTH AFRICAN CHILDREN

Treatment times		
Procedure	Unit	Time/year (minutes)
Group prevention	15 min/session	5
Prophylaxis	5 min/sextant	1
Topical fluoride	10 min/application	2.5
Fissure sealant	5 min/sealant	5
1 surface restoration	15 min/restoration	15
> 1 surface restoration	15 min/restoration	15
Extraction	7.5 min/extraction	7.5

Anticipated % caries reduction due to water fluoridation	0
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Variable:	[1]	[2]	[3]; [4]	[7]	[8]
Group prevention					
	Pop est 2006	Treatment need	Time (minutes): 5	% of total	Per capita time
National	12,122,400	100	60,612,000	21.78	5.00
Western Cape	1,052,320	100	5,261,600	14.52	5.00
Northern Cape	225,140	100	1,125,700	12.37	5.00
Eastern Cape	2,012,360	100	10,061,800	29.26	5.00
Free State	727,060	100	3,635,300	18.97	5.00
KwaZulu-Natal	2,675,500	100	13,377,500	22.92	5.00
Gauteng	1,820,940	100	9,104,700	21.85	5.00
North West	966,140	100	4,830,700	33.86	5.00
Mpumalanga	903,160	100	4,515,800	24.61	5.00
Limpopo	1,739,780	100	8,698,900	20.90	5.00
Prophylaxis (6- to 15-year-olds only)					
Mean no of sextants	Pop est 2006	Treatment need	Time (minutes): 1	% of total	Per capita time
National	10,087,080	3.31	33,388,235	11.99	2.75
Western Cape	869,340	3.27	2,842,742	7.85	2.70
Northern Cape	186,540	2.30	429,042	4.72	1.91
Eastern Cape	1,700,100	2.88	4,896,288	14.24	2.43
Free State	607,120	3.95	2,398,124	12.51	3.30
KwaZulu-Natal	2,235,140	3.57	7,979,450	13.67	2.98
Gauteng	1,472,640	3.31	4,874,438	11.70	2.68
North West	798,240	2.57	2,051,477	14.38	2.12
Mpumalanga	751,980	1.97	1,481,401	8.07	1.64
Limpopo	1,465,980	4.41	6,464,972	15.53	3.72



Topical fluoride application					
% of population	Pop est 2006	Treatment need	Time (minutes): 2.5	% of total	Per capita time
National	12,122,400	5.39	1,633,613	0.59	0.13
Western Cape	1,052,320	2.46	64,777	0.18	0.06
Northern Cape	225,140	2.36	13,299	0.15	0.06
Eastern Cape	2,012,360	6.66	335,237	0.97	0.17
Free State	727,060	5.21	94,710	0.49	0.13
KwaZulu-Natal	2,675,500	6.32	422,689	0.72	0.16
Gauteng	1,820,940	5.39	245,390	0.59	0.13
North West	966,140	5.79	139,944	0.98	0.14
Mpumalanga	903,160	5.24	118,296	0.64	0.13
Limpopo	1,739,780	5.39	234,452	0.56	0.13
Fissure sealant					
Mean no of teeth	Pop est 2006	Treatment need	Time (minutes): 5	% of total	Per capita time
National	12,122,400	0.80	48,610,096	17.46	4.01
Western Cape	1,052,320	1.80	9,475,528	26.15	9.00
Northern Cape	225,140	0.31	353,615	3.89	1.57
Eastern Cape	2,012,360	0.07	738,925	2.15	0.37
Free State	727,060	1.13	4,092,552	21.35	5.63
KwaZulu-Natal	2,675,500	0.94	12,511,220	21.43	4.68
Gauteng	1,820,940	0.80	7,301,860	17.52	4.01
North West	966,140	0.29	1,417,279	9.94	1.47
Mpumalanga	903,160	0.05	214,101	1.17	0.24
Limpopo	1,739,780	0.80	6,976,413	16.76	4.01
One surface restoration					
Mean no of teeth	Pop est 2006	Treatment need	Time (minutes): 15	% of total	Per capita time
National	12,122,400	0.39	70,509,367	25.33	5.82
Western Cape	1,052,320	0.56	8,897,698	24.56	8.46
Northern Cape	225,140	0.93	3,153,394	34.66	14.01
Eastern Cape	2,012,360	0.29	8,631,649	25.10	4.29
Free State	727,060	0.54	5,937,590	30.98	8.17
KwaZulu-Natal	2,675,500	0.29	11,627,754	19.92	4.35
Gauteng	1,820,940	0.39	10,591,412	25.42	5.82
North West	966,140	0.25	3,670,124	25.73	3.80
Mpumalanga	903,160	0.48	6,523,249	35.54	7.22
Limpopo	1,739,780	0.39	10,119,348	24.31	5.82
Two or more surface restoration					
Mean no of teeth	Pop est 2006	Treatment need	Time (minutes): 15	% of total	Per capita time
National	12,122,400	0.20	37,042,650	13.31	3.06
Western Cape	1,052,320	0.36	5,761,429	15.90	5.47
Northern Cape	225,140	0.81	2,723,977	29.94	12.10
Eastern Cape	2,012,360	0.14	4,131,874	12.01	2.05
Free State	727,060	0.13	1,468,714	7.66	2.02
KwaZulu-Natal	2,675,500	0.18	7,199,957	12.33	2.69
Gauteng	1,820,940	0.20	5,564,281	13.35	3.06
North West	966,140	0.11	1,650,123	11.57	1.71
Mpumalanga	903,160	0.24	3,291,093	17.93	3.64
Limpopo	1,739,780	0.20	5,316,279	12.77	3.06



Extraction

Mean no of teeth	Pop est 2006	Treatment need	Time (minutes): 7.5	% of total	Per capita time
National	12,122,400	0.29	26,557,573	9.54	2.19
Western Cape	1,052,320	0.50	3,925,098	10.83	3.73
Northern Cape	225,140	0.77	1,298,181	14.27	5.77
Eastern Cape	2,012,360	0.37	5,597,501	16.27	2.78
Free State	727,060	0.28	1,537,717	8.02	2.11
KwaZulu-Natal	2,675,500	0.26	5,257,246	9.01	1.96
Gauteng	1,820,940	0.29	3,989,288	9.57	2.19
North West	966,140	0.07	505,536	3.54	0.52
Mpumalanga	903,160	0.33	2,208,525	12.03	2.45
Limpopo	1,739,780	0.29	3,811,484	9.16	2.19
Variable:	[1]		[5]		[6]

All procedures

	Pop est 2006	Total time (minutes)	Per capita time (minutes)
National	12,122,400	278,353,534	22.96
Western Cape	1,052,320	36,228,872	34.43
Northern Cape	225,140	9,097,208	40.41
Eastern Cape	2,012,360	34,393,273	17.09
Free State	727,060	19,164,708	26.36
KwaZulu-Natal	2,675,500	58,375,816	21.82
Gauteng	1,820,940	41,671,369	22.88
North West	966,140	14,265,182	14.77
Mpumalanga	903,160	18,352,464	20.32
Limpopo	1,739,780	41,621,849	23.92

Variable:	[1]	[5]	[6]	[9]	[10]
All procedures					
		Need		Demand	
	Pop est 2006	Total time (minutes)	Per capita time (minutes)	% demand (utilization)	Per capita time (minutes)
National	12,122,400	278,353,534	22.96	25.74	5.91
Western Cape	1,052,320	36,228,872	34.43	25.74	8.86
Northern Cape	225,140	9,097,208	40.41	25.74	10.40
Eastern Cape	2,012,360	34,393,273	17.09	25.74	4.40
Free State	727,060	19,164,708	26.36	25.74	6.78
KwaZulu-Natal	2,675,500	58,375,816	21.82	25.74	5.62
Gauteng	1,820,940	41,671,369	22.88	25.74	5.89
North West	966,140	14,265,182	14.77	25.74	3.80
Mpumalanga	903,160	18,352,464	20.32	25.74	5.23
Limpopo	1,739,780	41,621,849	23.92	25.74	6.16

[11] Working year (hours)	1,760
[12] Working year (minutes)	105,600



	Variable:	[6]	[10]	[13]	[14]	
	% of total	Need: Per capita time (Minutes)	Demand: Per capita time (Minutes)	HR: population ratio	HR Required	
National						
Group prevention	21.78	5.00	1.29	82040.33	148	Oral hygienist
Prophylaxis	11.99	2.75	0.71	148933.55	81	Oral hygienist
Topical F app/ Dental sealant	18.05	4.14	1.07	98970.17	122	Oral hygienist
Curative/Extraction	48.18	11.06	2.85	37078.84	327	Dental therapist/ Dentist
	100.00	22.96	5.91	17864.43	679	Total
Western Cape						
Group prevention	14.52	5.00	1.29	82040.33	13	Oral hygienist
Prophylaxis	7.85	2.70	0.70	151847.56	7	Oral hygienist
Topical F app/ Dental sealant	26.33	9.07	2.33	45246.29	23	Oral hygienist
Curative/Extraction	51.30	17.66	4.55	23227.41	45	Dental therapist/ Dentist
	100.00	34.43	8.86	11914.90	88	Total
Northern Cape						
Group prevention	12.37	5.00	1.29	82040.33	3	Oral hygienist
Prophylaxis	4.72	1.91	0.49	215253.51	1	Oral hygienist
Topical F app/ Dental sealant	4.03	1.63	0.42	251701.40	1	Oral hygienist
Curative/Extraction	78.88	31.87	8.20	12870.48	17	Dental therapist/ Dentist
	100.00	40.41	10.40	10151.77	22	Total
Eastern Cape						
Group prevention	29.26	5.00	1.29	82040.33	25	Oral hygienist
Prophylaxis	14.24	2.43	0.63	168591.67	12	Oral hygienist
Topical F app/ Dental sealant	3.12	0.53	0.14	768480.97	3	Oral hygienist
Curative/Extraction	53.39	9.12	2.35	44957.92	45	Dental therapist/ Dentist
	100.00	17.09	4.40	24001.01	84	Total
Free State						
Group prevention	18.97	5.00	1.29	82040.33	9	Oral hygienist
Prophylaxis	12.51	3.30	0.85	124364.38	6	Oral hygienist
Topical F app/ Dental sealant	21.85	5.76	1.48	71225.82	10	Oral hygienist
Curative/Extraction	46.67	12.30	3.17	33345.31	22	Dental therapist/ Dentist
	100.00	26.36	6.79	15562.00	47	Total
KwaZulu-Natal						
Group prevention	22.92	5.00	1.29	82040.33	33	Oral hygienist
Prophylaxis	13.67	2.98	0.77	137540.12	19	Oral hygienist
Topical F app/ Dental sealant	22.16	4.83	1.24	84854.04	32	Oral hygienist
Curative/Extraction	41.26	9.00	2.32	45567.63	59	Dental therapist/ Dentist
	100.00	21.82	5.62	18800.50	142	Total



Gauteng						
Group prevention	21.85	5.00	1.29	82040.33	22	Oral hygienist
Prophylaxis	11.70	2.68	0.69	153238.70	12	Oral hygienist
Topical F app/ Dental sealant	18.11	4.14	1.07	98970.17	18	Oral hygienist
Curative/Extraction	48.34	11.06	2.85	37078.84	49	Dental therapist/ Dentist
	100.00	22.88	5.89	17924.84	102	Total
North West						
Group prevention	33.86	5.00	1.29	82040.33	12	Oral hygienist
Prophylaxis	14.38	2.12	0.55	193183.86	5	Oral hygienist
Topical F app/ Dental sealant	10.92	1.61	0.41	254499.30	4	Oral hygienist
Curative/Extraction	40.84	6.03	1.55	68027.30	14	Dental therapist/ Dentist
	100.00	14.77	3.80	27781.78	35	Total
Mpumalanga						
Group prevention	24.61	5.00	1.29	82040.33	11	Oral hygienist
Prophylaxis	8.07	1.64	0.42	250086.11	4	Oral hygienist
Topical F app/ Dental sealant	1.81	0.37	0.09	1114565.36	1	Oral hygienist
Curative/Extraction	65.51	13.31	3.43	30814.42	29	Dental therapist/ Dentist
	100.00	20.32	5.23	20186.81	45	Total
Limpopo						
Group prevention	20.90	5.00	1.29	82040.33	21	Oral hygienist
Prophylaxis	15.53	3.72	0.96	110388.82	16	Oral hygienist
Topical F app/ Dental sealant	17.32	4.14	1.07	98970.17	18	Oral hygienist
Curative/Extraction	46.24	11.06	2.85	37078.84	47	Dental therapist/ Dentist
	100.00	23.92	6.16	17146.30	101	Total

Summary of human resources	Total	Oral hygienists	Dental Therapists/ Dentists	Dentists	Dental Therapists	Dental Assistants
National	679	352	327	54	272	490
Western Cape	88	43	45	8	38	68
Northern Cape	22	5	17	3	15	26
Eastern Cape	84	39	45	7	37	67
Free State	47	25	22	4	18	33
KwaZulu-Natal	142	84	59	10	49	88
Gauteng	102	52	49	8	41	74
North West	35	21	14	2	12	21
Mpumalanga	45	15	29	5	24	44
Limpopo	101	55	47	8	39	70