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APPENDICES

APPENDIX A

Allocation Basis for Common or Shared Costs at Narsingdi District Hospital:

I. Building:

Allocated on the basis of space

Total space of the building = 21,716 square feet

Total space of administration department = 2942 sq. ft. = $(2942/21716)*100=13.55\%$ of total hospital space.

Total space of pharmacy = 280sq. ft. = $(280/21716)*100 =1.29 \%$ of total hospital space.

Total space of dental department = Direct space + Allocated waiting space = 320.00 sq. ft. + 105.02 sq. ft. = 425.02 sq. ft. = $(425.02/21,716)*100=1.96 \%$ of total hospital space.

Note:

1. No space allocated to housekeeping because there is no housekeeping department in the hospital and housekeeping staffs work under supervision of administration department. The direct space occupied by administration department is used by the administrator and his support staffs for administrative purpose. No space of administration department is used by the housekeeping staff.
2. Allocation of waiting space: Total waiting space 1786.00 sq. ft (Table C.1) is the waiting space for out-patients. So that waiting space is allocated on the basis of number of OPD patients. Total OPD patients in 1998 was 124817 among the OPD dental patients was 7340 = $(7340/124817)*100=5.88 \%$ of total OPD patients .So, allocated waiting space allocated to dental department = 1786.00 sq. ft. * 0.0588 = 105.02 sq. ft.
3. Total pharmacy space 280 sq. ft. includes the waiting space for pharmacy.

II. Jeep:

Allocated on the basis of proportion of time served.

Jeep is exclusively used by the hospital administrator i.e. it served whole of its time to the admin. department. So, the total cost of Jeep is allocated to the administration.

III. Water Pump Machine:

Allocated on the basis of space same as building cost.

IV. Administration Department's Costs

Allocated on the basis of number of personnel. Allocation basis for administration cost to other department is the proportion of the number of staffs of that departments to remaining total staff (Total staff of the hospital - Total staff of administration of department) which is calculated as follows.

Total staff of the district hospital = 78.

Total staff of administration of department = 6.

Total staff of housekeeping (Cleaning, security & gardening)= 13

Total staff of the pharmacy/ drug store = 3

Total staff of the dental department = 3

So, allocation basis for housekeeping = $13/(78-6) = 0.1805$

So, allocation basis for pharmacy = $3/(78-6) = 0.0417$

So, allocation basis for dental department = $3/(78-6) = 0.0417$

V. Housekeeping (Cleaning, Security & Gardening)

Allocated on the basis of the space occupied, same as building cost.

VI. Costs of Pharmacy:

Allocated on the basis of volume of served (V/S). The cost of pharmacy is allocated to final service producing centers on the basis of the quantity of services they provided or volume served. Here it is assumed that 1 in-patient days equal to 1 out-patient visits. Total volume of served (V/S) is calculated as follows:

Total OPD patients = 124817 = 124817 out-patient visit

Total OPD dental patients = 7340 =7340 out patient visits

Total IPD patients=4304

Average length of stay = 3.45days.

Total IPD patients day = 4304 * 3.45 = 14849days

So, total volume served (V/S) =Out patient visits +Inpatient days = 124817 + 14849
= 139666 outpatient visits or in patient days.

Percentage of volume served dental department to total volume served

= (7340/139666)*100 % = 5.26 %

VII. Electricity & Water:

Allocated on the basis of the space occupied, same as building cost.

VIII. Fuel & Maintenance of Jeep:

Same as cost of Jeep the cost of fuel & Maintenance of Jeep is allocated. Total cost of fuel and maintenance of Jeep is allocated to administration department

IX. Telephone:

There is no telephone in the dental department. But the telephone bill of the administration department is totally allocated to administration department. Then the cost is reallocated to other department such as other administration costs are allocated.

APPENDIX B

Allocation Basis for Common or Shared Costs at Shibpur Thana Health Complex:

I. Building:

Allocated on the basis of space

Total space of the building = 11912 square feet (sq. ft.)

Total space of administration department = 1748 sq. ft. = $(1748/11912) \times 100 = 14.67\%$ of total hospital space.

Total space of pharmacy = 220 sq. ft. = $(220/11912) \times 100 = 1.85\%$ of total hospital space

Total space of dental department = Direct space + Allocated waiting space
 = 290 sq. ft. + 31 sq. ft. = 321 sq. ft. $(321/11912) \times 100 = 2.69\%$ of total hospital space.

Note:

1. No space allocated to housekeeping because there is no housekeeping department in the hospital and housekeeping staffs work under supervision of administration department. The direct space occupied by administration department is used by the administrator and his support staffs for administrative purpose. No space of administration department is used by the housekeeping staff.
2. Allocation of waiting space: Total waiting space 1296 sq. ft (Table D.1) is the waiting space for out-patients. So that waiting space is allocated on the basis of number of OPD patients. Total OPD patients in 1998 was 77776 among the OPD dental patients was 1852 = $(1852/77776) \times 100 = 2.38\%$ of total OPD patients % of total OPD patients .So, allocated waiting space allocated to dental department = $1296 \text{ sq. ft.} \times 2.38\% = 30.84 \text{ sq. ft.} = 31 \text{ sq. ft.}$
3. Total pharmacy space 220 sq. ft. includes the waiting space for pharmacy.

II. Water Pump Machine:

Allocated on the basis of space same as building cost.

III. Administrative Department's Costs:

Allocated on the basis of number of personnel. Allocation basis for administration cost to dental department and pharmacy is the proportion of the number of staffs of these two departments to remaining total staff (Total staff of the hospital - Total staff of administration of department) which is calculated as follows.

Total staff of the thana health complex = 47.

Total staff of administration of department = 5.

Total staff of housekeeping (Cleaning, security & gardening)= 8

Total staff of the pharmacy/ drug store = 2

Total staff of the dental department = 3

So, allocation basis for housekeeping = $8/(47-5) = 0.1905$

So, allocation basis for pharmacy = $2/(47-5) = 0.0476$

So, allocation basis for dental department = $3/(47-5) = 0.0714$

IV. Housekeeping (Cleaning, Security & Gardening):

Allocated on the basis of the space, same as building cost.

V. Costs of Pharmacy:

Allocated on the basis of volume of served (V/S). The cost of pharmacy is allocated to final service producing centers on the basis of the quantity of services they provided or volume served. Here it is assumed that 1 in-patient days equal to 1 out-patient visits. Total volume of served (V/S) is calculated as follows:

Total OPD patients = 77776 = 77776 out-patient visits.

Total OPD dental patients = 1852 = 1852 out patient visits

Total IPD patients = 1778

Average length of stay = 3.78 days.

Total IPD patients day = $1778 * 3.78 = 6721$ days

So, total volume of served (V/S) = Out patient days + Inpatient days = $77776 + 6721$

= 84497 outpatient visits or in patient days.

Percentage of volume served dental department to total volume served

= $(1852/84497) * 100 = 2.19 \%$

VI. Electricity & Water:

Allocated on the basis volume of service

Same as the cost of administration department i.e. 2.19 % of total cost allocated to dental department.

VII. Telephone:

There is no telephone in the dental department. But the telephone bill of the administration department is totally allocated to administration department. Then the cost is reallocated to other department such as other administration costs are allocated.

APPENDIX C

Table C.1: Space under Different Department of Narsingdhi District Hospital

(Built in 1981 with 30 years life and building cost with furniture and fixtures was 180,00,000 Taka, Building Space: Total area =21,716 square feet.

Hospital Building Space	1	2
Administration	Area (Sq. ft).	Remarks
Superintendent's office room	550.00	Space directly under the administration department
Head assistant/Accountant's and other staffs room	420.00	"
Store	840.00	"
Library	660.00	"
WM room	280.00	"
Garage	192.00	"
Subtotal	2942.00	
Patients service	1	2
	(Area) Sq. ft	Remarks
Waiting Space for outpatients	1786.00	Used by OPD patients
Doctors room (9*240)	2160.00	Not used by the dental department
Doctors room (9*240)	800.00	Not used by the dental department
Pharmacy	280.00	Used by dental department and other OPDs & IPDs.
Laboratory	409.00	Not used by the dental department
Pathologist's Room	380.00	Not used by the dental department
Radiology Department	816.00	Not used by the dental department
Operation Theatre	935.00	Not used by the dental department
Dental Department	320.00	Fully used by the dental department
Ward (50 Beds)	7870.00	Not used by the dental department
Kitchen	1416.00	Not used by the dental department
Cabin	384.00	Not used by the dental department
Dissection Room	248.00	Not used by the dental department
RMO's Room	180.00	Not used by the dental department
Nursing super and nurses Room	140.00	Not used by the dental department
Emergency	650.00	Not used by the dental department
Subtotal	18774.00	
Total of space the hospital	21716.00	

Notes:

Information in the above table provided by the superintendent of the district hospital and dental surgeon of that hospital.

Table C.2: Average Annual Capital Costs Related to Dental Department at District Hospital, Narsingdi. In 1998

Costs Items	1	2	3	4	5	6	7
	Life time (Years)*	Buying /Making Year*	Interest rate**	Annualization Factor	Original price/ cost (Tk)	Value at 1998 (Tk.)	Annual cost (Tk.)
Shared Items (Not allocated)**							
Building	30	1981	14%	7.003	18,000,000.00	166,976,355.54	23,843,546.41
Jeep	10	1992	14%	5.216	1,000,000.00	2,194,972.62	420,815.30
Water pump	10	1991	14%	5.216	1,000,000.00	2,502,268.79	479,729.45
Subtotal							24,744,091.16
Direct Items							
Dental unit(Chair + light + spittoon + compressor)	10	1993	14%	5.216	150,000.00	288,812.19	55,370.43
Examination set (Dental probe, Dental mirror, Twizen etc, 5 stes)	3	1998	14%	2.322	1,000.00	1,000.00	430.66
Dental cartridge shirring (2)	2	1998	14%	1.647	400.00	400.00	242.87
Forceps (12)	3	1997	14%	2.322	3,000.00	3,420.00	1,472.87
Hand pieces	3	1996	14%	2.322	6,000.00	7,797.60	3,358.14
Subtotal							60,874.97

Notes:

Column 1, 2, & 5=Information provided by the superintendent of the district hospital and dental surgeon of that hospital.

Column 3=Economic Trends, Monthly, December 1998, Bangladesh Bank (The central bank of Bangladesh), GOB.

Column 4=Obtained from the annualization table.

Column 6=Column 5 * (1+ Column 4)^{t_s-t_o} [t_s = 1998 & t_o = Year of purchase or making]

Column 7= Column 6/ Column 4.

**Shared items are allocated to different cost centers in Table C.3

Table C.3: Allocation of Annual Capital Costs (Shared Items) at District Hospital, Narsingdi in 1998.

Cost Centers	Building		Water Pump Machine		Jeep		Reallocation of Administration		Reallocation of Housekeeping		Reallocation of Pharmacy		Total Annual cost
	Allocation Basis	Allocated Cost	Allocation Basis	Allocated Cost	Allocation Basis	Assigned Cost	Allocation Basis	Allocated Cost	Allocation Basis	Allocated Cost	Allocation Basis	Allocated Cost	
	% of Total Space	Tk.	% of Total Space	Tk.	% of Use / Served	Tk.	Proportion of Personnel	Tk.	% of Space	Tk.	% of Total V/S	Tk.	
	1	2	3	4	5	6	7	8	9	10	11	12	
Support Centers													
Administration	13.55%	3,230,800.54	13.55%	65,003.34	100%	420,815.30							3,716,619.18
Housekeeping	0.00%	0.00	0.00%	0.00	0%	0.00	0.1805	670,849.76					670,849.76
Pharmacy	1.29%	307,581.75	1.29%	6,188.51	0%	0.00	0.0417	154,983.02	1.29%	8,653.96	0.00%	0.00	477,407.24
Service Center													
Dental department	1.96%	467,333.51	1.96%	9,402.70	0%	0.00	0.0417	154,983.02	1.96%	13,148.66	5.26%	25,111.62	669,979.50

Note:

- Column 1=From Appendix A
- Column 2 =Column 1* Annual building cost (From Table C.2)
- Column 3 =From Appendix A
- Column 4=Column 3* Annual cost of Water pump machine (From Table C.2)
- Column 5= From Appendix A
- Column 6 = Column 5* Annual cost of Jeep (From Table C.2)
- Column 7 = From Appendix A
- Column 8 = Column 7* Total annual cost of administration (From Column 13)
- Column 9 = From Appendix A
- Column 10 = Column 7* Total annual cost of housekeeping (From Column 13)
- Column 11 = From Appendix A
- Column 12 = Column 9* Total annual cost of pharmacy (From Column 13)
- Column 13 = Column 2 + Column 4 + Column 6 + Column 8 + Column 10 + Column 12

Table C.4: Salary of Personnel of Administration at District Hospital, Narsingdi in 1998

Personnel	1	2	3	4	5	6
	Number	Basic salary/month in 1998	Total monthly salary In 1998	Salary /year	Bonus/ year	Total salary
Administrator & his support staff of administration						
Superintendent	1	9,500.00	13,500.00	162,000.00	19,000.00	204,000.00
Office Assistant	1	2,500.00	3,690.50	44,286.00	5,000.00	55,476.50
Accountant	1	3,755.00	5,262.00	63,144.00	7,510.00	79,671.00
Storekeeper	1	3,755.00	5,262.00	63,144.00	7,510.00	79,671.00
Orderly/MLSS	1	1,500.00	2,150.00	25,800.00	3,000.00	32,450.00
Jeep Driver	1	2,145.00	3,097.00	37,164.00	4,290.00	46,696.00
Total	6	23,155.00	32,961.50	395,538.00	46,310.00	497,964.50

Note:

Information in the above table provided by the superintendent of the district hospital

Column 1 = Number of personnel.

Column 2 = Basic Salary

Column 3 = Basic Salary + Medical allowance + House rent allowance

Column 4 = Column 3 * 12

Column 5 = Festival Bonus = 2* Basic salary.

Column 6 = Column 4 + Column 5

Table C.5: Salary of Housekeeping Staff at District Hospital, Narsingdi in 1998

Personnel	Salary	1	2	3	4	5	6
		Number	Basic salary/month in 1998	Total monthly salary In 1998	Salary /year	Bonus/ year	Total salary
Housekeeping(Cleaning, Security & Gardening)							
Gardener/ Mali (1)		1	2,450.00	3,875.00	46,500.00	4,900.00	57,725.00
Gardener/ Mali (2)		1	2,450.00	3,875.00	46,500.00	4,900.00	57,725.00
Sweeper(1)		1	1,550.00	2,525.00	30,300.00	3,100.00	37,475.00
Sweeper(2)		1	1,550.00	2,525.00	30,300.00	3,100.00	37,475.00
Sweeper(3)		1	1,500.00	2,150.00	25,800.00	3,000.00	32,450.00
Sweeper(4)		1	1,500.00	2,150.00	25,800.00	3,000.00	32,450.00
Sweeper(5)		1	1,500.00	2,150.00	25,800.00	3,000.00	32,450.00
Sweeper(6)		1	1,500.00	2,150.00	25,800.00	3,000.00	32,450.00
Sweeper(7)		1	1,500.00	2,150.00	25,800.00	3,000.00	32,450.00
Guard(1)		1	2,100.00	3,350.00	40,200.00	4,200.00	49,850.00
Guard(2)		1	2,100.00	3,350.00	40,200.00	4,200.00	49,850.00
Guard(3)		1	2,100.00	3,350.00	40,200.00	4,200.00	49,850.00
Guard(4)		1	2,100.00	3,350.00	40,200.00	4,200.00	49,850.00
Total		13	23,900.00	36,950.00	443,400.00	47,800.00	552,050.00

Note:

Information in the above table provided by the superintendent of the district hospital

Column 1 = Number of personnel.

Column 2 = Basic Salary

Column 3 = Basic Salary + Medical allowance + House rent allowance

Column 4 = Column 3 * 12

Column 5 = Festival Bonus = 2* Basic salary.

Column 6 = Column 4 + Column 5

Table C.6: Salary of Direct Personnel of Pharmacy/Drug Store at District Hospital, Narsingdi 1998

Personnel	Salary					
	1	2	3	4	5	6
	Number	Basic salary/ month in 1998	Total monthly salary in 1998	Salary/ Year	Bonus/ Year	Total salary/ year
Pharmacist (1)	1	3,205.00	4,847.25	58,167.00	6,410.00	72,629.25
Pharmacist (2)	1	2,705.00	4,122.25	49,467.00	5,410.00	61,704.25
MLSS	1	1,550.00	2,525.00	30,300.00	3,100.00	37,475.00
Total	3	7,460.00	11,494.50	137,934.00	14,920.00	171,808.50

Note:

Information in the above table provided by the superintendent of the district hospital

Column 1 = Number of personnel.

Column 2 = Basic Salary

Column 3 = Basic Salary + Medical allowance + House rent allowance

Column 4 = Column 3 * 12

Column 5 = Festival Bonus = 2* Basic salary.

Column 6 = Column 4 + Column 5

Table C.7: Salary of Direct Personnel of Dental Department at District Hospital, Narsingdi in 1998

Personnel	Salary	1	2	3	4	5	6
	Number	Basic salary/ month in 1998	Monthly salary in 1998	Salary/ Year	Bonus	Total salary/ year	
Dental Surgeon	1	7,275.00	10,385.00	124,620.00	14,550.00	156,830.00	
Medical Technologist (Dental)	1	3,320.00	3,521.45	42,257.40	6,640.00	55,738.85	
MLSS	1	1,650.00	1,851.50	22,218.00	3,300.00	29,019.50	
Total	3	12,245.00	15,757.95	189,095.40	24,490.00	241,588.35	

Note:

Information in the above table provided by the superintendent of the district hospital

Column 1 = Number of personnel.

Column 2 = Basic Salary

Column 3 = Basic Salary + Medical allowance + House rent allowance

Column 4 = Column 3 * 12

Column 5 = Festival Bonus = 2* Basic salary.

Column 6 = Column 4 + Column 5

Table C.8: Allocation of Labor/Manpower Costs at District Hospital, Narsingdi. In 1998.

Cost Centers	Direct Personnel	Reallocation of Administration		Reallocation of Housekeeping		Reallocation of Pharmacy		Total annual labor cost/ Cost centers
	Direct Cost	Allocation basis	Allocated Cost	Allocation Basis	Allocated Costs	Allocation Basis	Allocated Cost	
	Tk.	Proportion of Personnel	Tk.	% of Total Space		% of Total V/S	Tk.	Tk.
	1	2	3	4	5	6	7	8
Support Centers								
Administration	497,964.50							497,964.50
Housekeeping	552,050.00	0.1805	89,882.59					641,932.59
Pharmacy	171,808.50	0.0417	20,765.12	1.29%	8,280.93			200,854.55
Service Center								
Dental department	241,588.35	0.0417	20,765.12	1.96%	12,581.88	5.26%	10564.95	285,500.30

Note:

- Column 1 = From Table C.4, C.5, C.6 & C.7
- Column 2 = From Appendix A
- Column 3 = Column 2* Total labor cost of administration (From Column 8)
- Column 4 = From Appendix A
- Column 5 = Column 3* Total labor cost of housekeeping (From Column 8)
- Column 6 = From Appendix A
- Column 7 = Column 6* Total labor cost of pharmacy (From Column 8)
- Column 8 = Column 1+Column 3+ Column 5+ Column 7

Table C.9: Direct Material Cost of Dental Department, at District Hospital, Narsingdi in 1998.

Items	Taka.
Elevator(6)	800.00
Needle (disposable) and other surgical items	5000.00
Bars (18)	1800.00
Filling material(temporary)	10590.00
Permanent filling material	4995.00
Drug	121110.00
Laundry	2976.00
Total	147271.00

Note:

Information in the above table provided by the superintendent of the district hospital.

Table C.10: Annual Recurrent Cost of Electricity, Telephone, Fuel and Maintenance of Vehicle (Jeep) at District Hospital, Narsingdi in 1998

Cost Items	Taka
Electricity & water bill	75,995.00
Telephone bill	13,123.00
Fuel and maintenance of Jeep	53,823.00
Total	142,941.00

Note:

Information in the above table provided by the superintendent of the district hospital.

Table C.11: Allocated Electricity & Water, Telephone and Fuel & Maintenance cost of Vehicle (Jeep) District Hospital, Narsingdi in 1998

Cost Centers	Electricity & Water		Telephone		Fuel and Maintenance of Jeep		Reallocation of Administration		Reallocation of Housekeeping		Reallocation of Pharmacy		Total Annual cost
	Allocation Basis	Allocated Cost	Allocation Basis	Allocated Cost	Allocation Basis	Allocated Cost	Allocation Basis	Allocated Cost	Allocation Basis	Allocated Cost	Allocation Basis	Allocated Cost	
	% of Total Space	Tk.	% of Use	Tk	% of Use	Tk.	Proportion of Personnel	Tk.	% of Total Space		% of Total V/S	Tk.	
	1	2	3	4	5	6	7	8	9	10	11	12	
Support Centers													
Administration	13.55%	10,297.32	100.00%	13,123.00	100%	53,823.00							77,243.32
Housekeeping	0.00%	0.00	0.00%	0.00	0%	0.00	0.1805	13,942.42					13,942.42
Pharmacy	1.29%	980.34	0.00%	0.00	0%	0.00	0.0417	3,221.05	1.29%	179.86			4,381.24
Service Centers													
Dental Department	1.96%	1,489.50	0.00%	0.00	0%	0.00	0.0417	3,221.05	1.96%	273.27	5.26%	230.45	5,214.27

Note:

- Column 1 = From Appendix A
- Column 2 = Column 1 * Total Annual Electricity & Water Cost (From Table C.10)
- Column 3 = From Appendix A
- Column 4 = Column 3 * Total Annual Telephone Cost (From Table C.10)
- Column 5 = From Appendix A
- Column 6 = Column 5 * Total Annual Fuel and Maintenance Cost of Jeep (From Table C.10)
- Column 7 = From Appendix A
- Column 8 = Column 7* Total Annual Cost of Administration (Column 13)
- Column 9= From Appendix A
- Column 10 = Column 9* Total Annual Cost of Housekeeping (Column 13)
- Column 11 = From Appendix A
- Column 12 = Column 7* Total Annual Cost of Pharmacy (Column 13)
- Column 13 = Column 2+ Column 4+ Column 6+ Column 8 + Column 10+ Column 12

APPENDIX D

Table D.1: Space under Different Department of Shibpur Thana Health Complex

(Built in 1986 with 30 years life. Building cost with furniture and fixtures = 1,76,00000 Tk Area of the Health Complex = 11,912 square feet)

Hospital Building Space	1	2
Administration:	Area (Sq. ft).	Remarks
THFPO office room	390.00	Space directly under the administration department
Head assistant/Accountant's and other staffs room	220.00	"
Store	440.00	"
Library	340.00	"
WM room	166.00	"
Garage	192.00	"
Subtotal	1748.00	"
Patient Service:	1	2
	Area (sq. ft)	Remarks
Waiting Space for out-patients	1296.00	Used by OPD patients
Doctors room (220*7)	1320.00	Not used by the dental department
Dental Department	290.00	Fully used by the dental department
Pharmacy	220.00	Used by dental department and other OPDs & IPDs.
Laboratory	340.00	Not used by the dental department
Phatohlogist's Room	242.00	Not used by the dental department
Radiology Department	488.00	Not used by the dental department
Operation Theatre	680.00	Not used by the dental department
Ward (31 bed)	3565.00	Not used by the dental department
Kitchen	780.00	Not used by the dental department
Cabin	0.00	Not used by the dental department
Nursing super and nurses Room	223.00	Not used by the dental department
Dissection Room	140.00	Not used by the dental department
RMO's Room	240.00	Not used by the dental department
Emergency	340.00	Not used by the dental department
Subtotal	10164.00	
Total space of the hospital	11912.00	

Note:

Information in the above table provided by the Thana Health Administrator Shibpur, Narsingdi

Table D.2: Average Annual Capital Costs Related to Dental Department at Shibpur Thana Health Complex, Narsingdi. In 1998

Cost Items	1	2	3	4	5	6	7
	Life time	Buying /Making year	Loan Rate	Annualization Factor	Original Price/cost (Tk.)	Value at 1998 (Tk.)	Annual cost (Tk.)
Shared Item (Not allocated)**							
Building	30	1986	14%	7.003	17600000.00	84795124.83	12108399.95
Water pump	10	1993	14%	5.216	1000000.00	1925414.58	369136.23
Subtotal							12477536.18
Direct Item							
Dental unit (chair + light + spittoon +compressor etc)	10	1994	14%	5.216	150000.00	253344.02	48570.56
Examination sets(dental probe, dental mirror, twizen etc, 5 set)	3	1998	14%	2.322	1000.00	1000.00	430.66
Dental cartridge shirring	2	1997	14%	1.647	400.00	456.00	276.87
Forceps(12)	3	1997	14%	2.322	3000.00	3420.00	1472.87
Hand pieces	3	1997	14%	2.322	6000.00	6840.00	2945.74
Subtotal							53696.69

Notes:

- Column 1, 2, & 5=Information provided by the Thana Health Administrator and dental surgeon of that hospital.
- Column 3=Economic Trends, Monthly, December 1998, Bangladesh Bank (The central bank of Bangladesh), GOB.
- Column 4=Obtained from the annualization table.
- Column 6=Column 5 * (1 + Column 4)^{t_s-t_o} [t_s = 1998 & t_o = Year of purchase or making]
- Column 7= Column 6/ Column 4.
- **Shared items are allocated to different cost centers in Table C.3

Table D.3: Allocation of Annual Capital Costs at Shibpur Thana Health Complex, Narsingdi in 1998.

Cost Centers	Building		Water Pump Machine		Reallocation of administration		Reallocation of Housekeeping		Reallocation of Pharmacy		Total Annual Capital cost/ Department
	Allocation basis	Allocated Cost	Allocation basis	Allocated Cost	Allocation basis	Allocated Cost	Allocation Basis	Allocated Costs	Allocation Basis	Allocated Cost	Tk
	% of Total Space	Tk.	% of Total Space	Tk.	Proportion of Personnel	Tk.	% of Total Space	Tk.	% of Total V/S	Tk.	Tk
	1	2	3	4	5	6	7	8	9	10	11
Support Centers											
Administration	14.67%	1,776,302.27	14.67%	54,152.29							1,830,454.56
Housekeeping	0.00%	0.00	0.00%	0.00	0.1905	348,658.01					348,658.01
Pharmacy	1.85%	224,005.40	1.85%	6,829.02	0.0476	87,164.50	1.85%	6,450.17			324,449.10
Service Centers											
Dental department	2.69%	325,715.96	2.69%	9,929.76	0.0714	130,746.75	2.69%	9,378.90	2.19%	7,105.44	482,876.81

Note:

- Column 1=From Appendix B
- Column 2 =Column 1* Annual building cost (From Table D.2)
- Column 3 =From Appendix B
- Column 4=Column 3* Annual cost of water pump machine (From Table D.2)
- Column 5= From Appendix B
- Column 6 = Column 5* Total annual cost of administration (From Column 11)
- Column 7= From Appendix B
- Column 8 = Column 7* Total annual cost of housekeeping (From Column 11)
- Column 9= From Appendix B
- Column 10 = Column 9* Total annual cost of pharmacy (From Column 11)
- Column 11 = Column 2 + Column 4 + Column 6 + Column 7.

Table D.4: Salary of Personnel of Administration at Shibpur Thana Health Complex in 1998

Personnel	1	2	3	4	5	6
	Number	Basic salary/month in 1998	Total monthly salary In 1998	Salary /year	Bonus/ year	Total salary
Administrator & his support staff of administration						
Thana Health Administrator	1	8,760.00	12,464.00	149,568.00	17,520.00	188,312.00
Head Assistant /Accountant	1	3,755.00	5,644.75	67,737.00	7,510.00	84,646.75
Office Assistant-cum-Typist	1	2,500.00	3,825.00	45,900.00	5,000.00	57,225.00
Storekeeper	1	3,755.00	5,644.75	67,737.00	7,510.00	84,646.75
Orderly/MLSS	1	1,500.00	2,450.00	29,400.00	3,000.00	36,350.00
Total	5	20,270.00	30,028.50	360,342.00	40,540.00	451,180.50

Note:

Information in the above table provided by the Thana Health Administrator, Shibpur, Narsingdi

Column 1 = Number of personnel.

Column 2 = Basic Salary

Column 3 = Basic Salary + Medical allowance + House rent allowance

Column 4 = Column 3 * 12

Column 5 = Festival Bonus = 2* Basic salary.

Column 6 = Column 4 + Column 5

Table D.5: Salary of Housekeeping Staff at at Shibpur Thana Health Complex in 1998

Personnel	1	2	3	4	5	6
	Number	Basic salary/month in 1998	Total monthly salary In 1998	Salary /year	Bonus/ year	Total salary
Housekeeping(Cleaning, Security & Gardening)						
Gardener/ Mali	1	2,340.00	3,710.00	44,520.00	4,680.00	55,250.00
Sweeper(1)	1	1,500.00	2,450.00	29,400.00	3,000.00	36,350.00
Sweeper(2)	1	1,500.00	2,450.00	29,400.00	3,000.00	36,350.00
Sweeper(3)	1	1,500.00	2,450.00	29,400.00	3,000.00	36,350.00
Sweeper(4)	1	1,500.00	2,450.00	29,400.00	3,000.00	36,350.00
Sweeper(5)	1	1,500.00	2,450.00	29,400.00	3,000.00	36,350.00
Guard (1)	1	2,100.00	3,350.00	40,200.00	4,200.00	49,850.00
Guard (2)	1	2,050.00	3,275.00	39,300.00	4,100.00	48,725.00
Total	8	13,990.00	22,585.00	271,020.00	27,980.00	335,575.00

Note:

Information in the above table provided by the Thana Health Administrator, Shibpur, Narsingdi

Column 1 = Number of personnel.

Column 2 = Basic Salary

Column 3 = Basic Salary + Medical allowance + House rent allowance

Column 4 = Column 3 * 12

Column 5 = Festival Bonus = 2* Basic salary.

Column 6 = Column 4 + Column 5

Table D. 6: Salary of Direct Personnel of Pharmacy/Drug Store at Thana Health Complex, Shibpur Narsingdi 1998.

Personnel	Salary					
	1	2	3	4	5	6
	Number	Basic salary/ month in 1998	Total monthly salary In 1998	Salary/ Year	Bonus	Total salary/ year
Pharmacist	1	2,860.00	4,347.00	52,164.00	5,720.00	6,5091.00
MLSS	1	1,600.00	2,600.00	31,200.00	3,200.00	3,8600.00
Total	2	4,460.00	6,947.00	83,364.00	8,920.00	10,3691.00

Note:

Information in the above table provided by the Thana Health Administrator, Shibpur, Narsingdi

Column 1 = Number of personnel.

Column 2 = Basic Salary

Column 3 = Basic Salary + Medical allowance + House rent allowance

Column 4 = Column 3 * 12

Column 5 = Festival Bonus = 2* Basic salary.

Column 6 = Column 4 + Column 5

Table D.7: Salary of Direct Personnel of Dental Department at Thana Health Complex, Shibpur, Narsingdi in 1998

Personnel	1	2	3	4	5	6
	Number	Basic salary/ month in 1998	Total monthly salary in 1998	Salary/ Year	Bonus	Total salary/ year
Dental Surgeon	1	6,150.00	8,810.00	105,720.00	12,300.00	132,980.00
Technologist	1	2,705.00	4,122.25	49,467.00	5,410.00	61,704.25
MLSS	1	1,550.00	2,525.00	30,300.00	3,100.00	37,475.00
Total	3	10,405.00	15,457.25	185,487.00	20,810.00	232,159.25

Note:

Information in the above table provided by the Thana Health Administrator, Shibpur, Narsingdi

Column 1 = Number of personnel.

Column 2 = Basic Salary

Column 3 = Basic Salary + Medical allowance + House rent allowance

Column 4 = Column 3 * 12

Column 5 = Festival Bonus = 2* Basic salary.

Column 6 = Column 4 + Column 5

Table D.8: Allocation of Labor/Manpower Costs at Shibpur Thana Health Complex, Narsingdi in 1998.

Cost Centers	Direct Personnel	Reallocation of administration		Reallocation of Housekeeping		Reallocation of Pharmacy		Total Annual Cost/ Department or Cost Centers
	Direct Cost	Allocation Basis	Allocated Cost	Allocation Basis	Allocated Costs	Allocation Basis	Allocated Cost	
	Tk.	Proportion of Personnel	Tk.	% of Total Space	Tk.	% of Total V/S	Tk.	
	1	2	3	4	5	6	7	
Support Centers								
Administration	451,180.50							451,180.50
Housekeeping	335,575.00	0.1905	85,939.14					421,514.14
Pharmacy	103,691.00	0.0476	21,484.79	1.85%	7,798.01			132,973.80
Service Center								
Dental Department	232,159.25	0.0714	32,227.18	2.69%	11,338.73	2.19%	2,912.13	278,637.29

Note:

Column 1 = From Table D.4, D.5, D.6 & D.7

Column 2 = From Appendix B

Column 3 = Column 2* Total labor cost of administration (From Column 8)

Column 4 = From Appendix B

Column 5 = Column 3* Total labor cost of housekeeping (From Column 8)

Column 6 = From Appendix B

Column 7 = Column 6* Total labor cost of pharmacy (From Column 8)

Column 8 = Column 1 +Column 3+ Column 5+ Column 7

Table D.9: Direct Material Cost of Dental Department, Thana Health Complex, Shibpur, Narsingdi in 1998

Items	Taka.
Elevator(6)	800.00
Needle (disposable) and other surgical items	5,000.00
Bars (10)	1,000.00
Filling material(temporary)	1,580.00
Permanent filling material	1,830.00
Drug	26,391.00
Laundry	2,480.00
Total	39,081.00

Note:

Information in the above table provided by the Thana Health Administrator, Shibpur, Narsingdi

Table D.10: Annual Recurrent Cost of Electricity, Telephone, at Shibpur Thana Health Complex, Narsingdi in 1998.

Cost Items	Taka.
Electricity	52,000.00
Telephone	7,200.00
Total	59,200.00

Note:

Information in the above table provided by the Thana Health Administrator, Shibpur, Narsingdi

Table D.11: Allocated Electricity & Water and Telephone Cost of at Shibpur Thana Health Complex, Narsingdi in 1998.

Cost Centers	Electricity & Water		Telephone		Reallocation of Administration		Reallocation of Housekeeping		Reallocation of Pharmacy		Total annual cost/ Department or Cost centers
	Allocation basis	Allocated Cost	Allocation basis	Allocated Cost	Allocation basis	Allocated Cost	Allocation Basis	Allocated Costs	Allocation Basis	Allocated cost	
	% of Total Space	Tk.	% of Use or Served	Tk.	Proportion of Personnel	Tk	% of Total Space		% of Total V/S	Tk.	
	1	2	3	4	5	6.	7	8	9	10	
Support Centers											
Administration	14.67%	7,628.40	100.00%	7,200.00							14,828.40
Housekeeping	0.00%	0.00	0.00%	0.00	0.1905	2,824.46					2,824.46
Pharmacy	1.85%	962.00	0.00%	0.00	0.0476	706.11	1.85%	52.25			1,720.37
Service Center											
Dental department	2.69%	1,398.80	0.00%	0.00	0.0714	1,059.17	2.69%	75.98	2.19%	37.68	2,495.65

Note:

- Column 1 = From Appendix B
- Column 2 = Column 1 * Total Annual Electricity & Water Cost (From Table C.11)
- Column 3 = From Appendix B
- Column 4 = Column 3 * Total Annual Telephone Cost (From Table C.11)
- Column 5 = From Appendix A
- Column 6 = Column 5* Total Annual Cost of Administration (Column 11)
- Column 7= From Appendix B
- Column 8 = Column 7* Total Annual Cost of Housekeeping (Column 11)
- Column 9 = From Appendix B
- Column 10 = Column 9* Total Annual Cost of Pharmacy (Column 11)
- Column 11 = Column 2+ Column 4+ Column 6+ Column 8 + Column 10

APPENDIX E

In the following figures (Figure E.1, E.2, E.3 and E.4) allocation of cost items (related to dental services) is shown.

Figure E 1: Allocation of Building Space

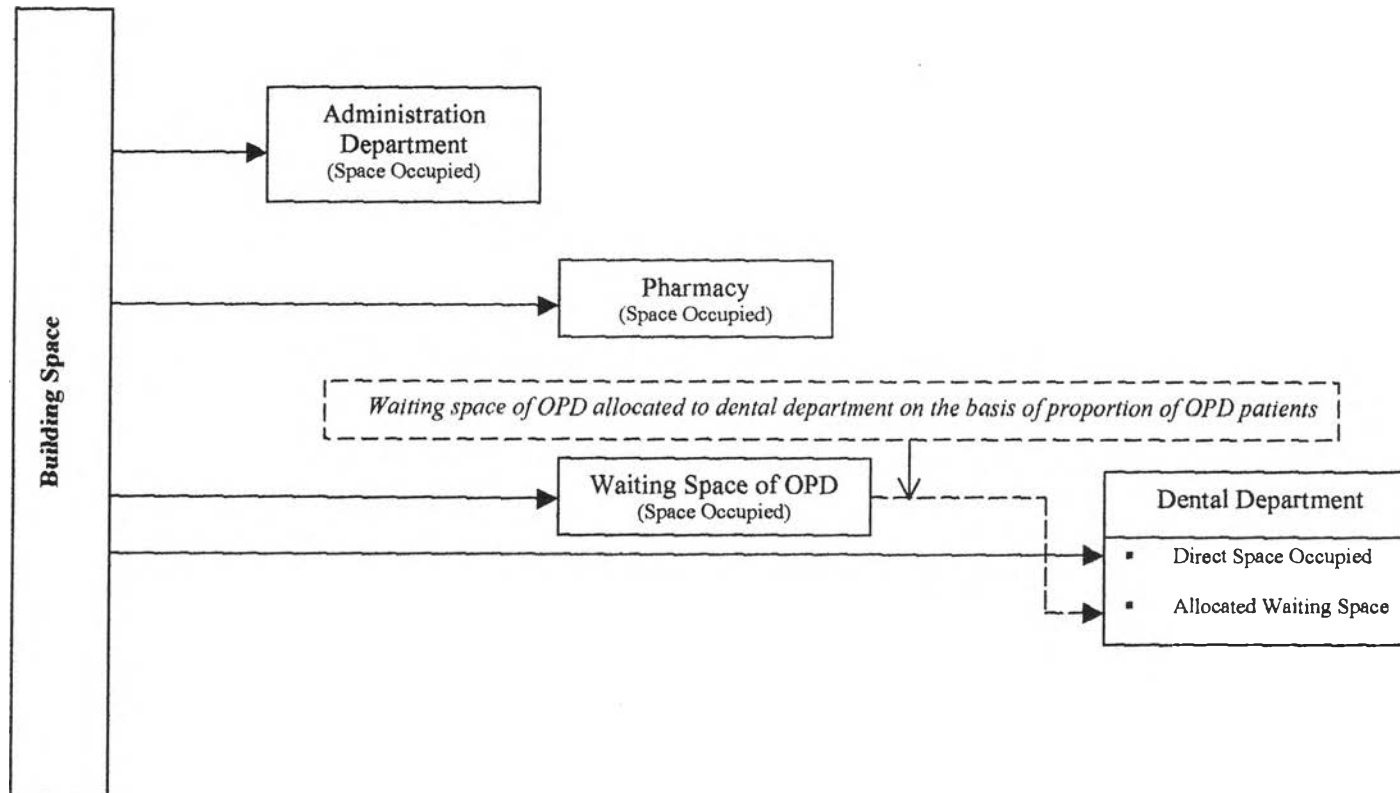


Figure E 2: Allocation of Capital Costs

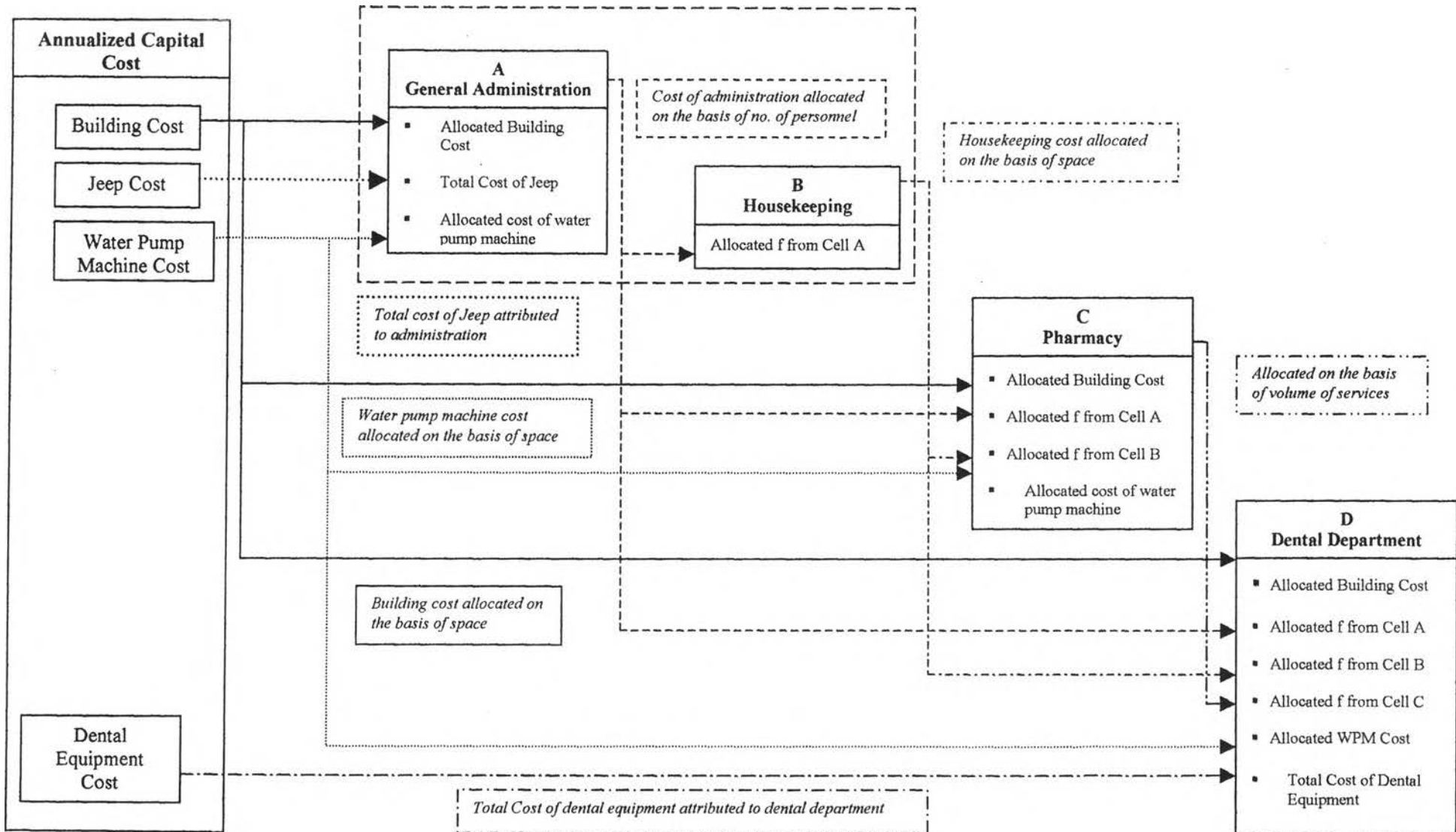


Figure E 3: Allocation of Recurrent Cost: Salary

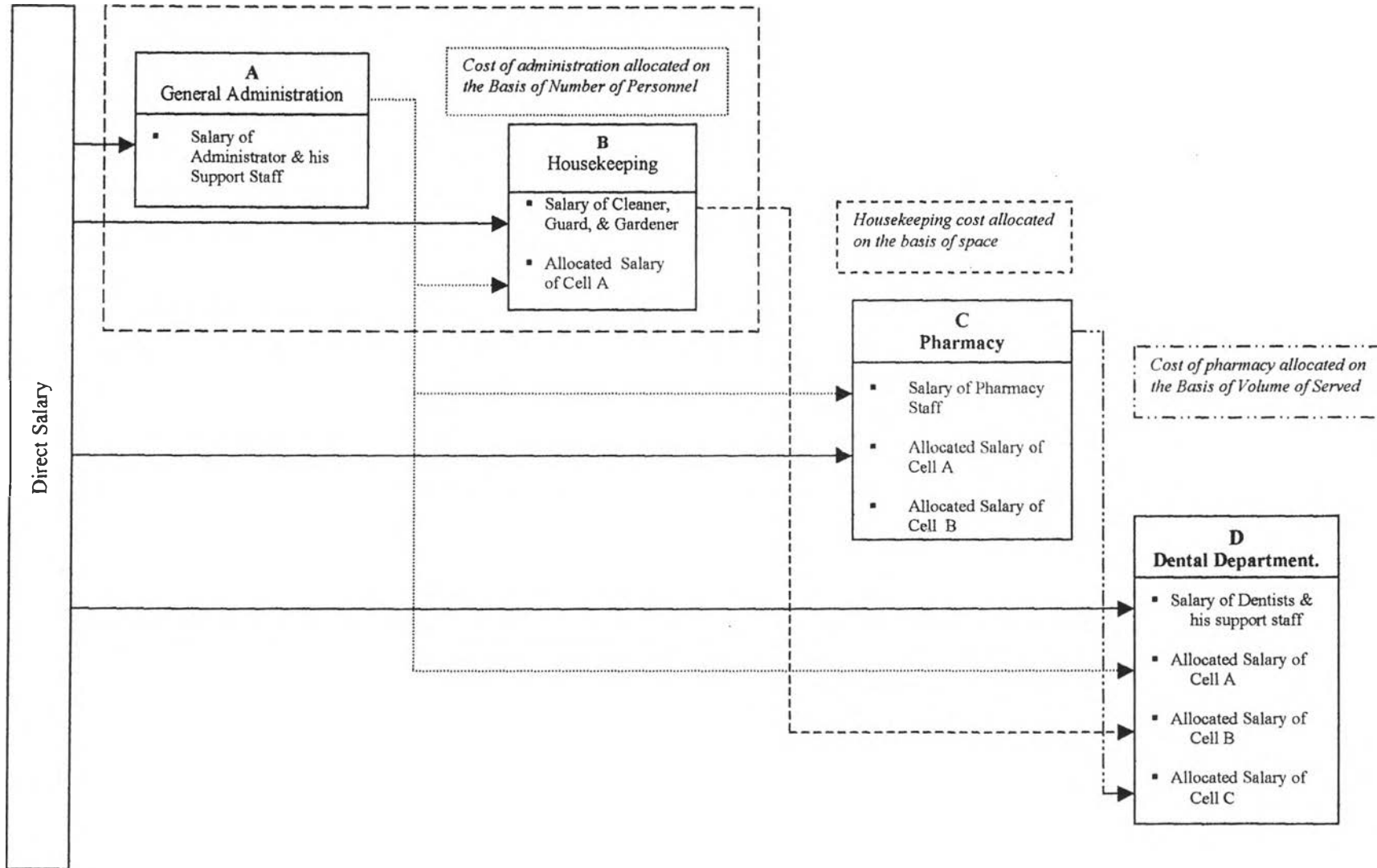
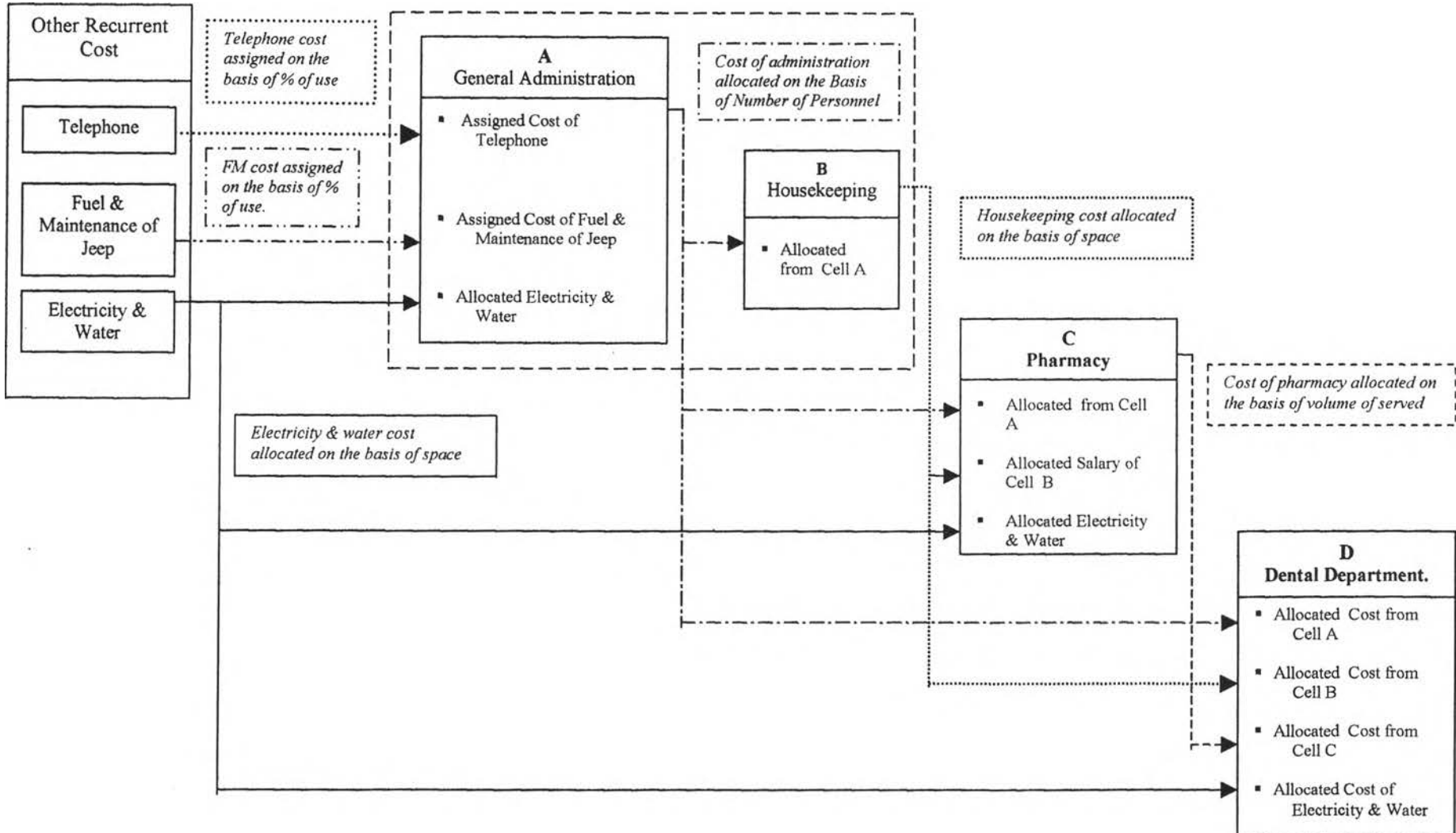


Figure E 4: Allocation of Other Recurrent Costs



APPENDIX F

Management of Patients Attending with Dental Problems at THC and DH

Dental Problems	Management
<p>Dental Caries: It is defined as the decay of tooth bones. Many risk factors like age, sex, race and ethnicity, familial and genetic patterns and diet are associated with development of caries. Constant bathing of the teeth with sugar containing diet leads to caries. The inflicted bacteria first causes fermentation of the sugars with consequent production of hydrochloric acid. Dental caries is the number one dental health problem affecting the tooth of the children and adolescents. Deciduous teeth are most at risk of caries.</p> <p>Periodontal Diseases: The term periodontal disease is recognized as a nonspecific term used to describe a group of diseases. Two of them that were usually found at the Sub-district and District level are gingivitis and periodontitis.</p> <p>Gingivitis: Gingivitis is defined as the inflammatory process of the gingiva in which the junctional epithelium, although altered by the disease, remains attached to the tooth at its original level. Cardinal features of the disease are swelling of the gum, foul smelling from the mouth and spontaneous bleeding or bleeding with trivial trauma. Most forms of gingivitis are plaque-induced resulting from specific or non-specific bacterial infections.</p> <p>Periodontitis: Periodontitis is also an inflammatory condition of the gingival tissues, and is found when the attachments of the periodontal ligaments and some bony support have been lost. Periodontitis is developed as an extension of gingivitis. The bacteria associated with the rate of tissue destruction, disease activity, and host resistance, but spirochetes and gram-negative rods most frequently dominate plaques associated with periodontitis.</p> <p>Tooth Abscess: Periodontitis sometimes leads to tooth abscess.</p> <p>Delayed or Painful Eruption of Tooth: In many cases eruption of permanent teeth in children or eruption of wisdom teeth in case of adult is delayed or painful.</p> <p>Delayed Fall of Deciduous Teeth: Sometimes deciduous teeth persist beyond normal limit. In that case permanent teeth begin to erupt beside the deciduous one with malformation. It then becomes urgent to extract the previous one by surgical interference.</p>	<p>Filling (temporary & permanent) is the treatment of choice in case of early caries. But where tooth bone is severely affected tooth extraction is preferred.</p> <p>Scaling of teeth to remove the plaque.</p> <p>Treatment is almost same as for gingivitis except the use of antibiotics and antiamoebics like metronidazole for 5-7 days.</p> <p>In case of tooth abscess tooth extraction and treatment with antibiotic are done.</p> <p>In these cases operculotomy are done for easy eruption of teeth.</p> <p>Extraction of deciduous tooth by surgical method</p>

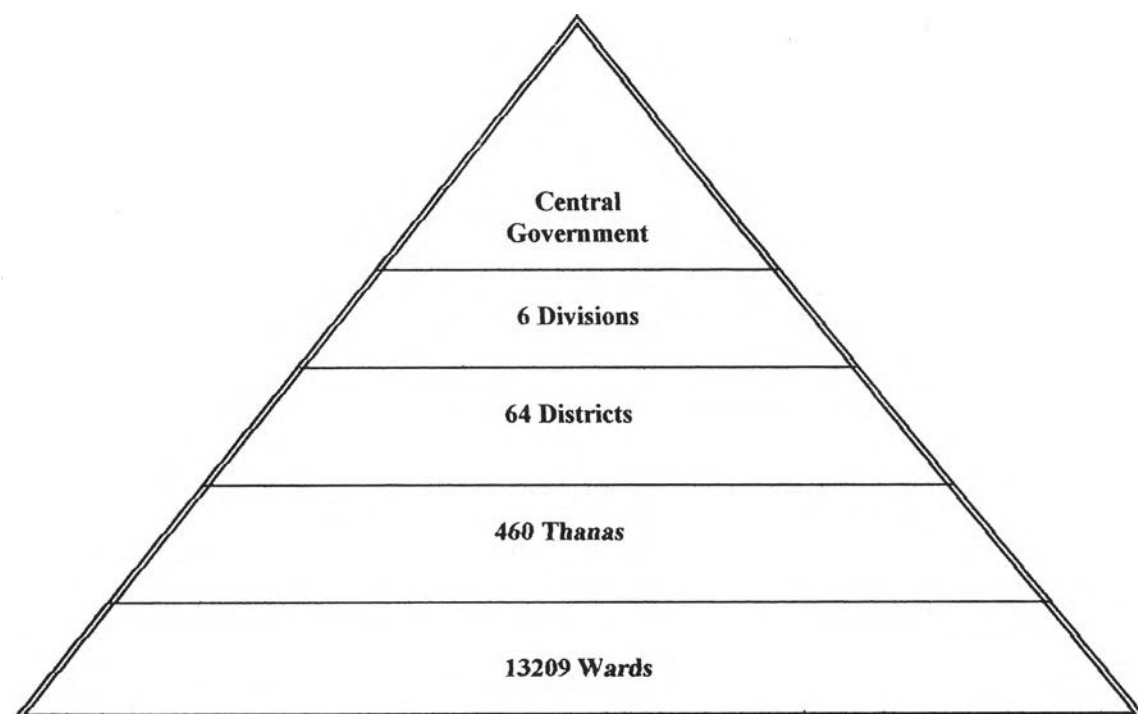
[Source: Civil Surgeon Narsingdi, THA Shibpur and Dental Surgeons of both the hospitals]

APPENDIX G

I. Administrative Tiers /Units of Bangladesh

Administratively, the country is divided into 6 divisions, 64 districts, 460 thanas [(sub-districts) of which 397 are rural (outlying) & remaining 63 are sadar (urban)] and 4403 unions. Each union, on an average 3 wards and four to five villages constitute a ward. A ward has an average of 7,000 population and it is the lowest administrative tier of the government. Each has elected representative.

Figure G.1 Administrative Tiers /Units of Bangladesh



(Source: Bangladesh Health Bulletin 1996, Published in November 1998)

II. Health and Family Welfare Service Network in Bangladesh

In Bangladesh the health care services are presently being provided from both a large government health delivery system and substantial private sector. Three major parties, namely, the government, private entrepreneurs and non-government organizations (NGO), operate the health sector of Bangladesh. Though, like other the developing countries Bangladesh facing severe scarcity of resources to meet the health needs of the citizens, and other problems are the inefficiency of government services as well as the cost-effectiveness, sustainability and quality of services and non functioning referral system. But a country with a large population in a small area, its public sector health system is fairly well organized. The Table G.1 provides a brief summary of the level of care and type of facilities available at every level of public administration in the country and the approximate population coverage each type of facility services.

Table G.1: Health and Family Welfare Service Network

Level of Care	Administrative Unit	Health Facility	Population (Approximate)
Tertiary Referral Level	Central, Division and/or District (Greater District)	Medical University Hospital/ Teaching Hospitals/Institute 50-1050 beds each	10-15 million
Second Referral Level	District	District Hospital(DH) 50-200 beds each	1-2 million
First Referral Level	Thana (460) Rural: 397 Urban:63	Thana Health Complex (THC) 31 beds each (Urban Thanas do not have THC)	200,000-450,000
First Level Health Facility	Union	Union Health & Family Welfare Center(UHFWC)/Union Health Center(UHC)	21,000
First Contact With Health Providers	Ward	Community-each with: -One Family Welfare Assistant(FWA) and -One Health Assistant (HA)	7000
	Village	Trained Birth Assistants (TBA) and Village Health Volunteers (VHV)	1,000-1,500

(Source: Bangladesh Health Bulletin 1996, Published in November 1998, PIP of HPSP April 1998)

III. Basic Policy Principles of the National Health Policy 1999

The basic policy principles of the National Health policy are as follows:

1. To enable every individual citizen, irrespective of his/her geographical location in Bangladesh, income, religion, cast, race, and gender to enjoy the benefits of health, nutrition and reproductive health services on the basis of the principles of social justice and equity.
2. To render health services to every citizen, irrespective of the geographical location within the territory of the State of Bangladesh and to make available the essential services of Primary Health Care at the grass root of level.
3. To establish equity in the distribution and utilization of available resources with greater focus towards the less-advantaged, poor and distressed people while addressing the priority health problems.
4. To involve the people and the communities along with government in health development and to ensure the responsibilities and assert the right of the people and the communities in being involved in planning, management and local fund generation and expenditure, monitoring and review of health services delivery system with an aim to a decentralized management system.
5. To create opportunities and to extend all policy support to the government institutions and NGOs in their collaborative efforts to provide effective health services to all.
6. To assure and to make available the methods of contraception of their choice to the couple of the reproductive age, by ensuring the services of family planning.
7. To improve and maintain quality of health services and to render the benefits of health services to all the citizens, through proper and acceptable administrative and

planning reform of the health services, decentralized logistic support and need based manpower development strategies.

8. To encourage, adopt and apply effective and efficient technology and methods of development and research that are of continuous utility in health nutrition and reproductive health.
9. To provide legal support and shelter of laws to all the citizens, involved with health services delivery as well as recipients of the services, in the matter of their rights, privileges, duties, responsibilities and obligations in relation to health services.
10. To establish self-reliance and self-sufficiency as the core principle of health services development through Primary Health Care with a view to meeting the expectation of the people to attain a healthy and reproductive life.

(Source: National Health Policy Document)

IV Main Features, Objectives and Targets of Health Population Sector Program

In 1998 Bangladesh Government the Ministry of Health and Family Welfare (MOHFW) launched the Health Population Sector Program (HPSP) 1998-1-2003 and the development activities in Health and Family Welfare sector are now being implemented under this program. It is basically Sector Program Approach or Sector Wide Management (SWM) Approach.

SWM has four main features:

- In terms of policy and strategy, SWM looks at the sector as a whole, whether the Government, the private sector, NGOs or other agencies such as community groups run the services. Equally, it considers all sources of funding including individuals payments those by employers, as well as Government and international agencies. And it covers the range of services, including family planning (FP) as well as health in an integrated way.
- In planning, SWM will enfold all the relevant programs as a single entity rather than having separates plans individual projects.
- In implementation, under SWM, the Government will decide how best to allocate and deploy all the available resources, by taking a comprehensive view of resources available, and allocating them as effectively and efficiently as possible to achieve its objectives.

- Management of resources is dealt with in a more comprehensive and integrated way, with line managers' responsible for implementing activities in their area whether these funded by Government revenue or development budgets or from external sources. Monitoring and accounting for resources would be integrated rather than different for each funding source.

The main purpose of HPSP is to achieve

Client-centered provision and client utilization of an Essential Services Package (ESP) plus selected services.

Some of the key indicators to be used for monitoring of implementation activities of HPSP within the stipulated timeframe will include reduction in:

- maternal mortality
- infant mortality
- mortality for female and male children under five
- communicable diseases and
- unwanted fertility and reduction of total fertility rate;

and increase/improvement in:

- life expectancy for females and males
- age of women at birth of first child
- nutritional status
- healthy life style

The activities under HPSP will result in the following component outputs:

- Essential Services Package defined, funded, promoted and implemented
- Services delivery mechanism unified, restructured and decentralized
- Integrated support systems strengthened
- Hospital level services focused and improved
- Sector-Wide program management system established and operational
- Policy and regulatory framework strengthened
- Other services of public health importance strengthened
- Other health and nutrition services strengthened

In this program ESP is the highest important component. Under which as a package;

- Reproductive Health Care (RHC),
- Child Health Care (CHC),
- Communicable Disease Control (CDC),
- Limited Curative Care (LCC), and
- Behavior Change Communication (BCC),

will be provided and GOB is expecting that it will increase the consumption of health care.

(Source: PIP of HPSP-1998-2000)

V Legislation Regarding Dental Health in Bangladesh

Besides these there are some legislation regarding dental education practice and registration existing in Bangladesh. These are as follows:

- Bangladesh Medical and Dental Council Act 1980
(Mainly it is legislation on medical and dental education, practice and registration.).
- The Government Resolution on State Medical Faculty 1947.
(It is also legislation on education and registration of medical and dental auxiliaries)

CURRICULUM VITAE

NAME : SYED ANISUZZAMAN

NATIONALITY : BANGLADESHI

PRESENT ADDRESS : 6/4 BAILY SQUARE,
OFFICERS QUARTER,
BAILY ROAD, RAMNA,
DHAKA, BANGLADESH

QUALIFICATION : MASTER OF COMMERCE IN
MANAGEMENT

CIVIL STATUS : GOVERNMENT OFFICER

OFFICE ADDRESS : SENIOR ASSISTANT SECRETARY
MINISTRY OF ESTABLISHMENT
..BUILDING NUMBER- 3,
BANGLADESH SECRETARIAT,
DHAKA- 1000, BANGLADESH.

