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FEASIBILITY STUDY REPORT

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CHAPTER IV

STANDARDIZATION PLAN

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IV-1 PURPOSES AND EFFECTS OF STANDARDIZATION

1. Preface

Hospital architecture is, in view of architectural planning, the building where various functions are highly interwoven, and such functions tend to change in response to social environment surrounding the building and the progress in technology of medicine.

To fully grasp the contents of such functions, it is required to perform survey and to collect and accumulate complete data regarding to method of use or method of being-used of the hospitals and design must be carried out on the basis of such data accumulated.

For the hospital development project being considered, information collected will be analyzed and a proposal of the development will be prepared though informative materials obtained up to now are considered to be still insufficient.

For further promoting the project, it will be required to perform additional surveys on method of use and method of being-used and to correct and develop the plan accordingly basing upon the proposal presented herewith.

2. Necessity of Methodology and Purpose of Standardization

One of outstanding characteristics of this project is its magnitude of number of hospitals involved. In addition, content of the project is further complicated by prerequisites imposed such as partial use of existing facilities or use of existing facilities after remodeling. Furthermore, character of hospital architecture itself is very sophisticated and the complication is further multiplied by the inconsistent requests to the method of use for existing facilities and by the multiplicity of number of existing hospitals involved. If such current situation is taken into consideration, it will be easily understood that some kind of methodology must be introduced in putting the plan forward.

"Complication" means circumstances where various elements are present without order. One method that can be considered to respond to this "complication" is the standardization in which complicated elements are classified and the same items are categorized into a single class for the purpose of generalization of the class. This method is already in use for the hospital standardization by Department of Health of Republic of Philippines. And budget plan of the Department of Health is being made basing upon this method. However, one of problems of this method is how to respond to actual multiplicity of various requirements of many hospitals.

If this standardization is put forward further, an idea of unit method can be considered naturally in which related items will be treated as a whole.

Architecturally thinking, term "unit" may naturally include the concept of space also but concept of unit will be only discussed in this chapter. One of advantages of using the concept of unit is that case study can be easily made and thorough analysis can be performed because number of items is reduced and position of each item in overall system is clarified in the unit method. The main point of this hospital standardization is that the various actual requirements of each hospital will be met unit by unit by means of unit method by which each department established in hospital standard will be grouped.

On the other hand, the disadvantage of thinking by the standardization or unit method is that if planning philosophy and functions are not well comprehended, the standardization or unit method tends to indicate mere unification, causing undesirable aspect of mass production to occur. We would like to clearly point out here that thorough discussion on functional planning and planning philosophy is indispensable and creative solution must be made.

3. Effects of Standardization

- o Productivity can be increased and uniformity be realized in design and construction.
- o Uniformity can be maintained in management, operation and education.
- o Multiplicity or variety in requirements can be responded.
- o Sense of togetherness as one of public hospital can be obtained since design can be unified throughout all hospitals.
- o Efficient medical services can be provided for whole country.
- o Planning approach can be brought into the medical policies.
- o Medical information can be unified.
- o Network for supply, maintenance and using skill of the medical equipment and supplies can be produced.

IV-2 ANALYSIS AND PROPOSAL FOR PHILIPPINES STANDARDS

Various standards presented by the Philippines will be respected and analyzed in reference to present state and development of medicine in Japan and other countries, and proper upgrading scheme of existing facilities will be made for the purpose of providing actually usable hospitals.

1. Floor Area Standard

Table of Floor Area Standard presented by Department of Health of Republic of the Philippines is indicated.

TABLE-IV-2-1 FLOOR AREA STANDARD BY DOH, PHILIPPINES

Space and Item Requirement	Standard Space (m ²)		
	300-Bed	200-Bed	100-Bed
A. Administration Service	(993)	(652)	(378)
1. Lobby			
a. Waiting Area	90	50	16
b. Information Center	15		
c. Communication Center	10	6	6
d. Toilets	35	15	8
2. Admitting Office	30	16	8
3. Adm. Office			
a. Director's Office w/Conference Room and Toilet	50	40	30
b. Administrative Office	20	30	16
c. Asst. Adm. Office	16	12	
d. Budget & Finance	20	20	16
e. Clerical Pool w/Storage	80	24	10
f. Rest Rooms (2)	30	20	8
4. Business Office			
a. Acct. Room	12	12	12
b. Acctg. Staff	30	20	16
c. Acctg. Record/Supply Room	20	12	8
d. Billing Office	16	12	10
5. Cashier's Office with Vault	18	14	14
a. Cashier's Cage	8	6	6
b. Cashier's Storage	16	12	10
6. Auditing Office and Staff and Storage Staff Room	42	36	30
a. 4-dept heads	80	64	50
b. Conference w/Toilet	100	40	30
7. Medical Library	50	40	20
8. Medical Records Library	60	70	25
9. Nursing Director's Office	30	70	25
a. Asst. Nursing Director	16		
b. Clerical Office	24	20	

Space and Item Requirement		Standard Space (m ²)		
		300-Bed	200-Bed	100-Bed
	c. Conference Room (2)	60	30	
	d. Rest Rooms	15	15	15
B. Out-Patient Department		(444)	(296)	(217)
	1. Waiting Room			
	a. Reception Information	20	20	15
	b. Toilet/Janitor Closet	20	10	10
	c. Records Room	16	10	8
	2. Clinics			
	a. General Surgery	16	20	
	b. Dental	16	16	12
	c. EENT	20	16	12
	d. Pediatrics	16	15	12
	e. Medicine	16	16	12
	f. Family Planning	16	16	16
	g. Public Health	16	16	30
	h. Medical Social Services	16	16	30
	i. General Treatment	20	16	16
	j. Injection Cubicle	10	8	
	k. OB-Gyne	16	16	12
	l. Storage	30	10	6
	m. Sterilizing	16	8	
	n. Toilets for Staff	20	15	10
	o. Equipment Room	12	10	4
	p. Work Room	20	16	10
	q. Multi-purpose	40	25	2
	r. Orthopedic	16		
	s. Nutrition Clinic	16		
	t. Special Treatment Room	40		
C. Emergency Room		(205)	(126)	(81)
	a. General Exam. Room (1)	40	18	18
	b. Minor O.R.	40	25	

Space and Item Requirement	Standard Space (m ²)		
	300-Bed	200-Bed	100-Bed
c. Waiting	15	15	10
d. Toilet (Male/Female)	15	10	15
e. Staff. Toilet	20	10	
f. Reception/Record	16	12	6
g. Staff Locker	24	12	12
h. Gen. Treatment Room	15	10	10
i. Clean/duty storage	10	10	6
j. Stretcher Cone	10	4	4
D. Ancillary Department	(2,533)	(1,738)	(1067)
1. Radiology Suite			
a. Radiographic Room	50	70	30
b. Film Processing	16	10	8
c. Viewing and Reception	20	16	8
d. File Storage	20	10	6
e. Dressing Area	12	12	6
f. Holding Area	16	16	10
g. Toilet & Locker	5	15	5
h. Technicians Room	10	12	18
i. Radiologist's Room	20	20	16
2. Clinical Lab. Suite			
a. Receiving/Processing	30	16	10
b. Laboratory Proper			
b.1. Blood Donors	12	12	8
b.2. Hematology/Serology	24	12	6
b.3. Bacteriology	16	12	6
b.4. Urinalysis	16	12	6
b.5. Cleaning/Sterilizing	20	16	8
b.6. Histology	16	12	6
b.7. Storage Cabinet	10	10	6
b.8. Blood Storage	10	10	6
b.9. Technician's Lookers	24	16	12

Space and Item Requirement	Standard Space (m ²)		
	300-Bed	200-Bed	100-Bed
b.10. Utility/Disposal	6	6	4
b.11. Pathologist	20	20	16
3. Physical Therapy			
a. Office/Reception	30	20	12
b. Waiting Area	30	16	10
c. Treatment Areas		32	20
c.1. Thermo	16		
c.2. Diathermy	16		
c.3. Hydro-Therapy	16		
c.4. Exercise and Massage Room	200	80	30
d. Toilets	15	15	10
e. Clean/Soiled Linen	20	10	10
f. Utility/Jan. Closet	16	10	10
g. Storage of Equipment	16	16	10
4. EKG and EEG	16	16	16
5. Pharmacy Suite			
a. Quality Control	16	9	
b. Office	16	9	8
c. Locked Storage for Drugs/ Biologicals	20	10	8
d. Dispensing Area	20	18	8
e. Sterile Product Area	20	8	8
f. Laboratory Area		8	8
g. Handwashing Facility	10		
h. Drugs Information Area	10		
6. Psychiatric Nursing Unit			
a. Nurse's Station		10	
b. Kitchen/Utility		12	
c. Consultation Rooms		12	
d. Dining Area		12	
e. Recreational Storage		10	
f. Exercise Area		100	

Space and Item Requirement	Standard Space (m ²)		
	300-Bed	200-Bed	100-Bed
7. Morgue and Autopsy			
a. Ante Room		20	16
b. Autopsy		30	20
c. Morgue		20	20
8. Cobalt-60			
a. Reception/Lobby	20		
b. Dressing Room (2)	8		
c. Treatment & Exam. Room	40		
d. Control Room	16		
e. Preparation and Painting	16		
f. Supply Room	20		
g. Toilet	15		
h. Deep-X-Ray	25		
9. Dietary Services			
a. Preparation (Rawfood)	40	16	10
b. Cooking Area	60	24	20
c. China Washing	20	10	10
d. Pot Washing	40	12	12
e. China and Utensil	30	10	10
f. Cooked Food Distribution	40	20	20
g. Storage Facility			
g.1. Frozen Food	15	8	4
g.2. Dry and Canned Goods	20	10	10
g.3. Kitchen Central	30	12	12
g.4. Pantry	20	10	4
h. Bakery	24		
h.1. Storage		6	4
h.2. Dough Preparation		4	4
h.3. Oven Area		6	6
h.4. Work Area		10	18
i. Dietary Office	16	12	6
j. Control Room	20	15	

Space and Item Requirement	Standard Space (m ²)		
	300-Bed	200-Bed	100-Bed
k. Cafeteria	300	165	70
l. Staff Locker w/Toilet	24		
m. Toilets	15		
10. Waste Processing Service			
a. Processing Area	12	10	10
b. Wet Storage	20	10	10
c. Dry Storage		6	6
d. Incinerator	60	40	40
11. Engineering Services & Equipment Area			
a. Office	20	16	12
b. Maintenance Shops			
b.1. Maintenance Shops	50	20	16
b.2. Carpentry Shops	50	20	16
b.3. Painting Shop	50	20	16
b.4. Mechanical/Electrical	20	20	12
b.5. Plumbing Shop	20	20	12
c. Equipment Storage	20	20	12
d. Supply Room	20	20	20
e. Landscaping/Garden	16	16	12
f. Sleeping Quarters	100	80	30
g. Toilet/Locker/Shower	30	20	10
h. General Set Room	30		
12. Laundry/Dinen Service			
a. Control Laundry			
a.1. Dirty Linen Processing	20	20	16
a.2. Washer, Extractor/Tanker	60	60	60
a.3. Pressing Room	30	20	16
a.4. Clean Linen Storage	40	20	16
a.5. Serving Area	20	20	16
a.6. Vestibule	20	20	12
a.7. Laundry/Supply	16	10	8

Space and Item Requirement		Standard Space (m ²)		
		300-Bed	200-Bed	100-Bed
	a.8. Toilet/Lockers	15	16	12
	b. Cart Sterilizing	20	16	16
	c. Cart Storage	20	16	16
E. Patient Areas		(4,077)	(2,502)	(1,350)
	a. 10-Singles at 16	160		
	b. 12-double at 20	240		
	c. 1-20 pt. ward	200		
	d. 41-ward at 65	2,665		
	e. Private Wards		128	128
	f. Semi-private Wards		240	120
	g. Special Wards		1,885	910
	h. Isolation Rooms		65	64
	i. Service Area			
	i.1. 7-Nurse Stations at 24	168		
	i.2. 7-Case Rooms at 16	112		
	i.3. 7-Utility at 16	112		
	i.4. 7-Clean holding at 10	70		
	i.5. 7-Kitchenette	70		
	i.6. 7-dirty holding at 10	70		
	i.7. 7-Janitor's Closet at 4	28		
	i.8. 7-Equipment Room at 10	70		
	i.9. 7-Isolation Room at 16	112		
	i.10. 6-Nurse Stations		96	64
	i.11. 6-Case-Rooms		16	12
	i.12. 6-Utility Room		16	12
	i.13. 6-Clear Linen/Onty Linen Sta.		16	12
	i.14. 6-Kitchenette		16	12
	i.15. 6-Dirty Linen		16	12
	i.16. Jan. Closets		8	4

Space and Item Requirement		Standard Space (m ²)		
		300-Bed	200-Bed	100-Bed
F. Bassinet & Nursery		(331)	45(346)	25(248)
	a. Bassinet	75	75	57
	b. Special Nursing	18	16	16
	c. Lavatory	18	16	16
	d. Treatment R-om	12	14	10
	e. Work Room	16	16	10
	f. Nurse Station/Formula	24	24	16
	g. Jan. Closet	8	8	8
	h. Viewing Room	20	12	10
	i. Patient Lounges	140	120	80
G. Surgery		(529)	(334)	(178)
	a. OR		120	50
	b. 4-Major OR at 45	225		
	c. 1-Specialized OR at 45	45		
	d. 1-Minor OR at 45	45		
	e. Instrument Supply	16	12	8
	f. Scrub Room	16	10	10
	g. Preparation Room	12	16	12
	h. Anaesthesiologists	16	16	12
	i. Anaesthesia Room	16	16	12
	j. Doctor's Lounge	32	30	12
	k. Nurses Lounge	32	30	12
	l. Substerilizing	10	8	8
	m. Main Storage	16	12	10
	n. OR Supv. Office	16		
H. Central Sterile Supply		(116)	(66)	(64)
	a. Receiving and Clean-up	20	10	18
	b. Clean Room	16	10	6
	c. Autoclave	20	10	8
	d. Sterile Sto. Supply	20	10	6
	e. Unsterile Storage	20	10	18
	f. Cart Storage	20	16	8

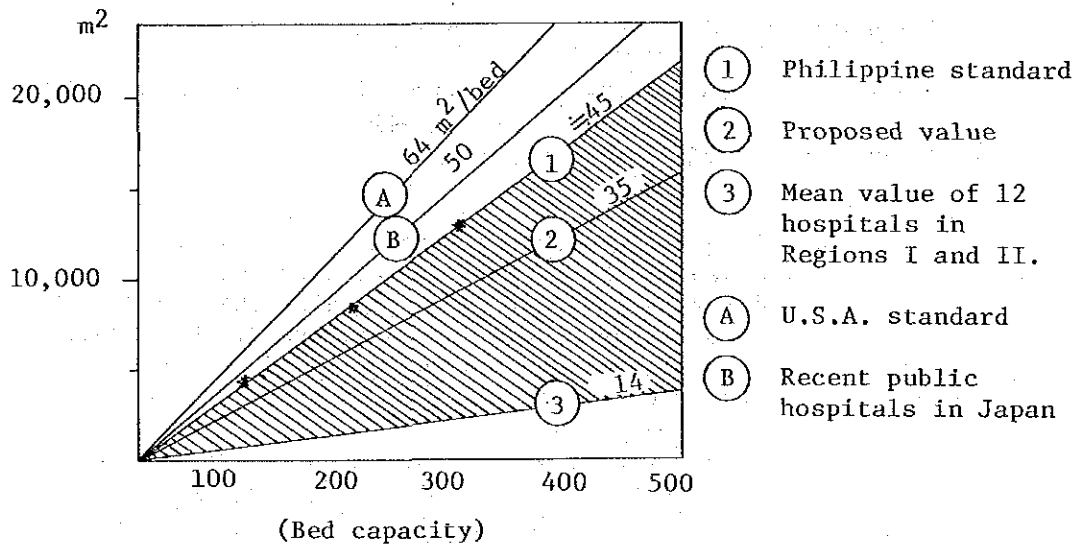
Space and Item Requirement		Standard Space (m ²)		
		300-Bed	200-Bed	100-Bed
I. O.B. Suite		(268)	(176)	(93)
	a. Delivery Room		70	35
	b. 2-delivery Rooms	75		
	c. Labor Room		24	12
	d. 4-Labor Rooms	64		
	e. Scrub Room	16	10	8
	f. O.R.	45		
	g. Preparation Room	20	14	10
	h. Doctor's and Nurse's Lockers/Toilet	30	40	16
	i. Instrument Room	12	8	6
	j. Sterilizing Room	6	10	6
J. Central Storage Area		(590)	(276)	(124)
	a. Office	20	16	14
	b. Storage	535	220	90
	c. Out-patient Storage	35	40	20
K. Mechanical		(160)	(110)	(60)
L. Employees Quarters		(1445)	(900)	(480)
	a. Nurse's Quarters	595	200	100
	b. Resident's Quarters	250	100	80
	c. 6-Duplex		600	300
	d. 4-Duplex	600		
M. Transport System		(110)	(110)	
	a. Garage	50		
	b. Automotive Repair	60		
Total		((11,801))	((7,632))	((4,340))

1) Floor Area of Hospital Section

(1) Building Scale per Bed

The standard of the scale exhibited by the Republic of the Philippines is well arranged and clearly defined. But, the scale is built up of the required spaces for the individual rooms so that when compared with the current scale of hospital, it results in a great difference from the expansion. It will be required to examine whether or not there is any way of arranging the rooms in a complex and more efficient manner.

The required floor space per bed (M^2/Bed) of the hospital section having the dwelling quarter excluded from the exhibited building scale standard of the Republic of the Philippines is about $41 M^2/B$ in the case of 200 beds or about $48 M^2/B$ in the case of 100 beds. But, from the following diagram and consideration, a floor space of $35 M^2/B$ is proposed.

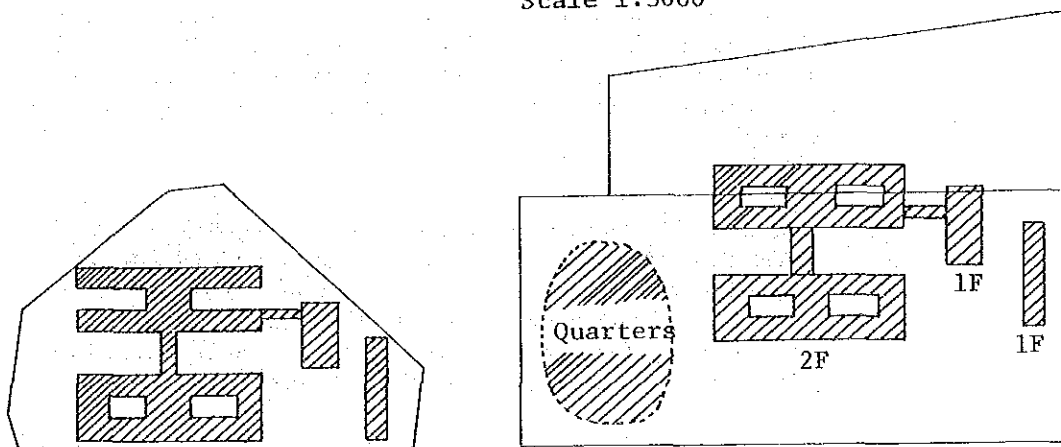


a. Proposed Building Scale of $35 M^2/Bed$

When the proposed value for the building scale or $35 M^2/B$ is applied to the site, the building has to be multi-storied. But, if a two-storied building is taken as a maximum in order to avoid the use of elevator, the land is not

always sufficient. For the sake of comparison, in the following are shown the standard plans plotted in the scheduled sites. It will be seen that they are of the scale hardly included in the site.

Scale 1:3000



(Example of narrow case)

(Example of standard case)

100B hospital 1F

200B hospital 2F structure

Assumed site AREA (1 ha)

Assumed site GABRIELA-SILANG
(2.76 ha)

No space for the quarters

- b. According to the Philippine standard, the scale is about three times the present scale. Then, for management of the hospitals, the government disbursement would increase considerably, while it would not be easy to train and secure the required personnel. Thus, such points were taken into consideration.
- c. As an example of increasing the floor space, in the public hospitals in Japan, the increase is made in two stages of (a) $25 \text{ M}^2/\text{B} \rightarrow 25 \text{ M}^2/\text{B}$, and (b) $35 \text{ M}^2/\text{B} \rightarrow 50 \text{ M}^2/\text{B}$ and for transfer from (a) to (b), a period of 10 ~ 15 years is required. In the stage of (b), the treatment function is diversified and developed to include necessary rooms, while the equipment is improved in system as well as space. The hospitals in the project regions seem to be still in the stage (a), while the physical dimensions are not much different from those of the Japanese, so that it will be

realistic and well balanced to increase the space from $14 \text{ M}^2/\text{B}$ to $35 \text{ M}^2/\text{B}$ for the time being and then to the ideal standard value upon subsequent development of the treatment functions. Thus, in the plan will be incorporated the prospected extension for development to the standard value of the Republic of the Philippines.

(2) Percentages of Required Rooms and Passages

Of the space of $35 \text{ M}^2/\text{B}$, the passage portion such as corridors, stairs, etc. is assumed to be 25%, and for the substantial portion of necessary rooms, the remaining 75% will be allocated. But, in the formulated standard plan, some difference is produced.

(3) Departments Setting and Distribution

The hospital departments are classified according to the function so that those of the same function are assembled for improvement of the efficiency of medical treatment, administration and management. Thus, the departments are divided and arranged as shown below.

Departments	Proportion	(Reference: Public Hospitals in Japan)
WARD	40%	42%
O.P.D.	10%	13%
ANC	20%	18%
ADM	10%	8%
SERVICE-1, -2	20%	19%
	100%	100%

According to the Philippine standard, the treatment functional portion other than the out-patient treatment department (such as operation, delivery, central supply, laboratory, radiology, rehabilitation and pharmacy) and the service portion direct to the patients (such as dietary, laundry and mess hall) are included in the Ancillary. But, in this plan, they are divided, the former being classed as ANCILLARY and the latter as SERVICE-1, and SERVICE-2 is provided newly to include the power house, maintenance room and garage.

(4) Grades of Bed Capacity

The bed capacities of the project hospitals proposed as above will be classified in three grades of 100 beds, 200 beds and 300 beds (including 450 beds). The grade 100B is intended for P.H., and the grade 200B for R.H. including some P.H. The grade 300B (450B) is for M.C. But, the standard plan is formulated not by the difference of P.H., R.H. or M.C. but by the bed capacity so that the function of the respective hospitals will be fulfilled. The treatment faculty will be improved strikingly over the present condition so that it will be applied even if there is not a space corresponding to the bed capacity of 450B and be classified in three groups of 100B, 200B and 300B.

Consequently, in some hospitals, the total scale will be determined in combination of the total bed capacity and the standard bed capacity. (for example, Pangasinan M.C. has a bed capacity of 450B with a treatment faculty of 300B, and this will be indicated as 300B + 150B.)

TABLE-IV-2-2 FLOOR AREA DISTRIBUTION IN HOSPITALS (Incl. corridors & passage space, Japanese data includes 31% Philippines data 25% of total floor area) I

SECTION	Philippines DOH Standard											
	Japan					Philippines DOH Standard						
	Japanese Public Hospital Committee Referencial Distribution		(35 M ² /bed)		450 Bed		300 Bed		200 Bed		100 Bed	
	M ²	% (M ² /bed)	M ²	% (M ² /bed)	M ²	% (M ² /bed)	M ²	% (M ² /bed)	M ²	% (M ² /bed)	M ²	% (M ² /bed)
A WARD		42.0			5,510	42.6(18.37)	3,560	(17.80)			41.4(19.98)	
B OPD		13.0				6.3 (2.70)	527	6.4 (2.64)			323	7.7 (3.73)
C ANC		18.0			2,441	18.9 (8.14)	1,565	19.0 (7.83)			950	19.7 (9.50)
	OP	3.1(1.71)			661	5.1 (2.20)	417	5.1 (2.09)			222	4.6 (2.22)
	DELIVERY	0.6(0.34)			335	2.6 (1.12)	220	2.6 (1.10)			116	2.4 (1.16)
	C. SUPPLY	1.0(0.57)			145	1.1 (0.4)	83	1.0 (0.42)			80	1.7 (0.80)
	RADIATION	4.3(2.33)			411	3.2 (1.37)	226	2.7 (1.13)			134	2.8 (1.34)
	LAB.	4.4(2.42)			255	2.0 (0.85)	193	2.3 (0.97)			118	2.4 (1.18)
	PHARM.	2.0(1.11)			140	1.1 (0.47)	78	0.9 (0.39)			50	1.0 (0.50)
	REHABIL.	3.0(0.57)			474	3.7 (1.58)	241	2.9 (1.21)			140	2.9 (1.40)
	AUTOPS						83	1.1 (0.44)				1.5 (0.70)
	OTHERS (EXC EEG)				20	0.2 (0.07)	20	0.2 (0.10)			20	0.4 (0.20)
D ADM		8.0			1,241	9.6 (4.14)	815	9.9 (4.08)			473	9.8 (4.73)
E SERVICE		19.0			2,942	22.7 (9.81)	1,753	21.3 (8.77)			21.4(10.31)	
	DIET.	2.8			518	4.0 (1.73)	231	2.8 (1.16)			188	3.9 (1.88)
	DINING	1.6			375	2.9 (1.25)	206	2.5 (1.03)			88	1.8 (0.88)
	LAUND	1.4			326	2.5 (1.09)	273	3.3 (1.65)			235	4.9 (2.35)
	MACHINE	10.0			200	1.5 (0.67)	138	1.7 (0.69)			75	1.6 (0.75)
	MAINTN	4.1			648	5.0 (2.16)	423	5.1 (2.12)			293	6.1 (2.93)
	(incl. baggage)				138	1.1 (0.46)	138	1.7 (0.69)				
	GARAGE				737	5.7 (2.46)	344	4.2 (1.72)			152	3.2 (1.52)
	STORAGE											

TABLE-IV-2-3 FLOOR AREA DISTRIBUTION IN PUBLIC HOSPITAL (Excludes corridor & passage space) II

SECTION	Japan		Philippine Standard				Proposed Distribution
	Japanese Architectural Design Sheet Distribution	Japanese Public Hospital Committee Referential Distribution	300 Bed	200 Bed	100 Bed		
	M ² / Z (M ² /bed)	M ² / % (M ² /bed)	M ² / % (M ² /bed)	M ² / % (M ² /bed)	M ² / % (M ² /bed)	M ² / % (M ² /bed)	
	24.72M ² /bed(35.82)	34.50 M ² /bed (50)	34.52M ² /bed(43.15)	32.88M ² /bed (41.1)	38.6M ² /bed (48.25)	2.5M ² /bed (31.25)	
	ex. 200 bed 4,942M ²	ex. 200 bed 6,900M ²	10,356 M ²	6,576 M ²	3,860 M ²		
A WARD	2,229 45.1	2,898 42.0	4,408 42.6	2,848 43.3	1,598 41.4	42	
B OPD	484 9.8	987 13.0	649 6.3	422 6.4	298 7.7	10	
C ANC	667 13.5	1,242 18.0	1,953 18.9	1,252 19.0	760 19.7	22	
			528 5.1	334 5.1	178 4.6		
			268 2.6	176 2.7	93 2.4		
			116 1.1	66 1.0	64 1.7		
			329 3.2	181 2.8	107 2.8		
			220 2.1	170 2.6	110 2.8		
			112 1.1	62 0.9	40 1.0		
			379 3.7	193 2.9	112 2.9		
			-	70 1.0	56 1.5		
D ADM	475 9.6	552 8.0	993 9.6	652 9.9	378 9.8	10	
E SERVICE	1,087 22.0	1,311 19.0	2,353 22.6	1,402 21.4	826 21.4	16	
			614 4.0	185 2.8	150 3.9		
			300 2.9	165 2.5	70 1.8		
			261 2.5	218 3.3	188 4.9		
			160 1.5	110 1.7	60 1.6		
			518 5.0	338 5.1	234 6.1		
			110 1.1	110 1.7	-		
			590 5.6	226 4.3	124 3.1		

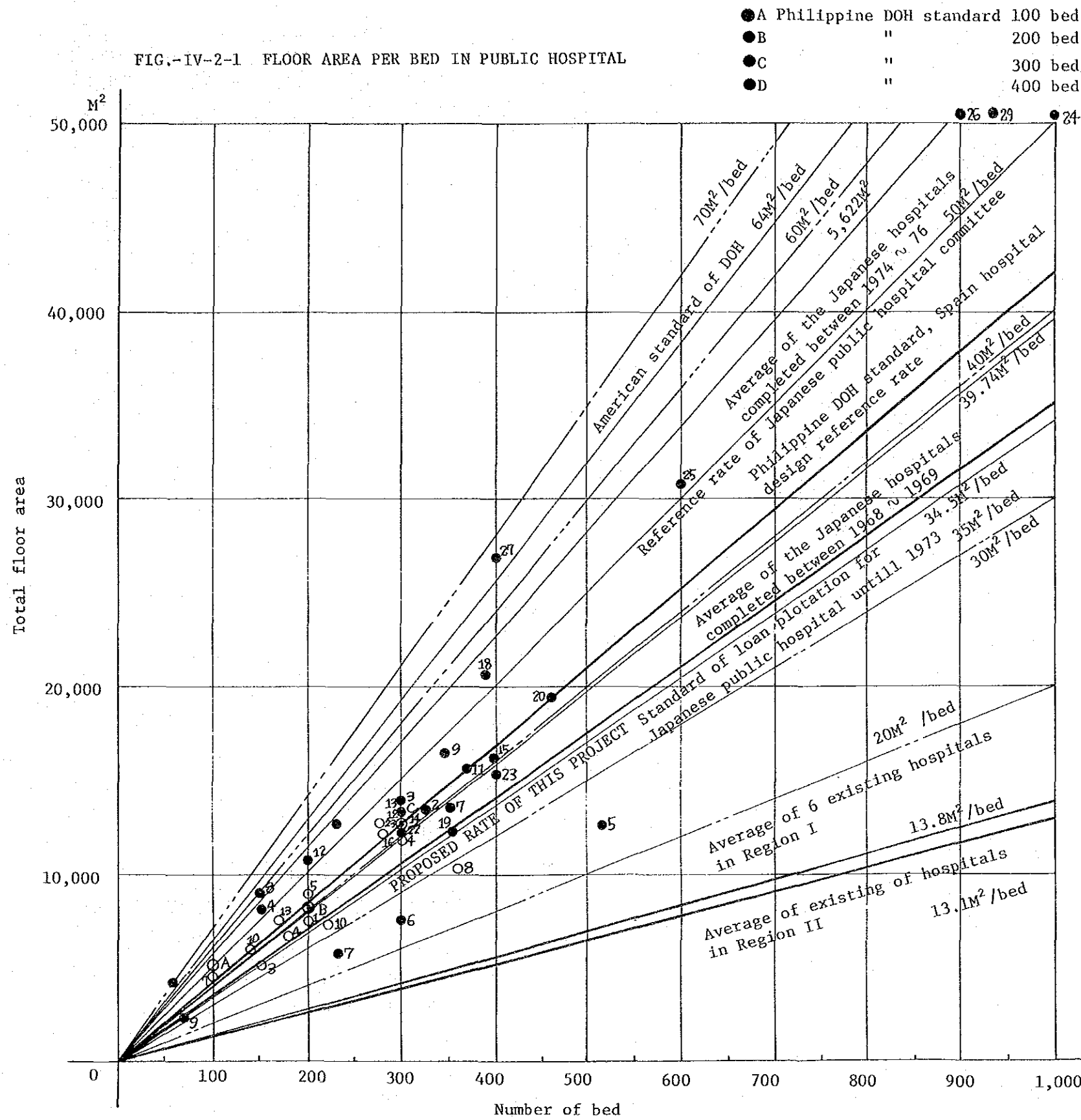
TABLE-IV-2-4 FLOOR AREA DISTRIBUTION IN EXISTING PROJECT HOSPITALS (Excludes corridor & passage spaces) 1/2

NAME OF HOSPITAL SECTION		Region I											
		Bontoc PH		Benguet PH		La Union RH		Abra PH		Gabriela Silang PH		Ilocos Norte RH	
		Area (M ²)	%	Area (M ²)	%	Area (M ²)	%	Area (M ²)	%	Area (M ²)	%	Area (M ²)	%
A	WARD	342.0	(34.4)	405.25	(38.0)	739.7	(41.1)	312.0	(30.0)	874.0	(48.8)	265.76	(20.0)
B	OPD	109.8	(11.1)	109.01	(10.2)	181.65	(10.1)	194.25	(18.7)	182.0	(10.2)	323.04	(23.8)
C	ANC	189.0	(19.0)	141.65	(13.3)	167.5	(9.3)	141.05	(13.6)	210.0	(11.7)	230.48	(17.0)
	OP	23.0	(2.3)	15.75	(1.5)	56.0	(3.1)	38.0	(3.7)	60.0	(3.4)	91.91	(6.8)
	DELIV.	35.0	(3.5)	20.2	(1.9)	27.0	(1.5)	9.6	(0.9)	37.0	(2.1)	24.57	(1.8)
	C. SUPPLY												
	RADIATION	30.0	(3.0)	18.0	(1.7)	22.5	(1.3)	21.0	(2.0)	25.0	(1.3)	36.0	(2.7)
	LAB.	60.0	(6.0)	67.5	(6.3)	30.0	(1.6)	28.6	(2.8)	43.0	(2.4)	32.0	(2.4)
	PHARM.	25.0	(2.5)	20.2	(1.9)	19.75	(1.1)	15.05	(1.4)	25.0	(1.4)	34.0	(2.5)
	REHABIL AUTOPSY OTHERS (EKG, EEG)	16.0	(1.6)					28.80	(2.8)	20.0	(1.1)	12.0	(0.9)
D	ADM	243.0	(24.5)	281.75	(26.4)	298.5	(16.6)	193.12	(18.6)	209.3	(11.7)	246.74	(18.2)
E	SERVICE	115.5	(11.6)	128.0	(12.0)	412.5	(22.9)	199.24	(19.2)	315.0	(17.6)	288.9	(21.3)
	DIET.	59.0	(5.9)	79.5	(7.5)	45.5	(2.5)	99.0	(9.5)	225.0	(12.6)	147.7	(10.9)
	DIN.									35.0	(2.0)	56.0	(4.1)
	LAUND	56.5	(5.7)	48.5	(4.6)			30.24	(2.9)	35.0	(2.0)	22.2	(1.6)
	MACH.					97.5	(5.4)						
	MAINTE.					211.0	(11.7)	45.0	(4.3)				
	GARAGE STORAGE					58.5	(3.2)	25.0	(2.4)	20.0	(1.1)	63.0	(4.7)
TOTAL	[INCL. 25% PASSAGE AREA]	[1,249.1]		[1,332.1]		[2,250.0]		[1,300.0]		[2,237.4]		[1,693.7]	
	M ² (Beds)	999.3	(100)	1,065.66	(119)	1,799.85	(150)	1,039.66	(110)	1,790.3	(88)	1,354.92	(16.3)
	M ² /Beds	<12.5>	10.0	<11.2>	9.0	<15.0>	12.0	<11.8>	9.5	<25.4>	20.8	<10.4>	8.3

FLOOR AREA DISTRIBUTION IN EXISTING PROJECT HOSPITALS (Excludes corridor & passage spaces) 2/2

NAME OF HOSPITAL SECTION		Region II												Total		
		Cagayan RH		Aparri EH		Kalinga Apayao PH		ISABELA PH		IFUGAO PH		NUEVA VIZCAYA PH				
		Area (M ²)	z	Area (M ²)	z	Area (M ²)	z	Area (M ²)	z	Area (M ²)	z	Area (M ²)	z			Area (M ²)
A	WARD	606.7	(49.9)	216.0	(35.8)	502.0	(50.5)	776.0	(59.3)	201.06	(27.2)	171.57	(16.3)	5,412.04	(38.8)	
														Region I	2,938.71	(36.5)
														Region II	2,473.33	(41.8)
B	OPD	-	-	36.0	(6.0)	13.5	(13.6)	24.0	(1.8)	58.99	(8.)	22.6	(2.1)	1,254.84	(9.0)	
														Region I	1,099.84	(13.7)
														Region II	155.0	(2.6)
C	ANC	208.05	(17.1)	66.4	(11.0)	152.8	(15.4)	169.0	(12.9)	261.12	(35.4)	202.76	(19.2)	2,139.81	(15.3)	
	OP	24.25	(2.0)	30.0	(5.0)	32.1	(3.2)			19.28	(2.6)	28.26	(2.7)	Region I		
	DELIV.	52.6	(4.3)	40.0	(6.6)	32.1	(3.2)			25.93	(3.5)	38.72	(3.7)	Region I	1,079.68	(13.4)
	C. SUPPLY													Region II		
	RADIATION	55.8	(4.6)			20.0	(2.0)			40.0	(5.4)	36.16	(3.4)	Region II		
	LAB.	61.2	(5.0)	18.0	(3.0)	21.6	(2.2)	16.0	(1.2)	11.03	(1.5)	20.02	(1.9)	Region II	1,060.13	(17.9)
	PHARM	14.2	(1.2)	18.0	(3.0)	27.0	(2.7)	15.0	(1.1)	151.54	(20.5)	13.66	(1.3)	Region II		
	REHABIL.													Region II		
	AUTOPSY					20.0	(2.0)	20.0	(1.5)	13.34	(1.8)	66.0	(6.3)	Region II		
	OTHERS (EKG, EEG)													Region II		
D	ADM	208.7	(17.2)	136.5	(22.6)	200.65	(20.2)	126.0	(9.6)	68.68	(9.3)	191.31	(18.1)	2,404.25	(17.2)	
														Region I	1,472.41	(18.3)
														Region II	931.84	(15.8)
E	SERVICE	191.25	(15.7)	148.9	(24.7)	124.5	(12.5)	214.0	(16.3)	148.57	(20.1)	466.82	(44.2)	2,753.18	(19.7)	
	DIEET.	30.0	(2.5)	120.0	(19.9)	94.0	(9.5)	104.0	(7.9)	97.07	(13.1)	174.82	(16.6)	Region I	1,459.14	(18.1)
	DIN.													Region II	1,294.04	(21.9)
	LAND			28.9	(4.8)	30.5	(3.1)	10.0	(0.7)			28.0	(2.7)	Total		
	MACH.	60.0	(4.9)											Region I	8,049.78	[10,062.21]
	MAINT.													Region II	730.8	-13.8m ² /B
	GARAGE	101.25	(8.3)					10.0	(7.6)	51.50	(7.0)	264.0	(25.0)	Region II	5,914.34	[7,392.9]
	STORAGE													Region II	563.8	-13.1m ² /B
TOTAL	[INCL. 25% PASSAGE AREA]	[1,518.4]		[754.8]		[1,241.8]		[1,636.3]		[923.0]		[1,318.3]			[17,455.2]	
	M ² (Beds)	1,214.7	(200)	603.8	(32)	993.65	(100)	1,309.0	(100)	738.42	(75)	1,055.06	(56)	13,964.12	(1,293)	
	M ² /Beds	<7.6>	0.1	<23.6>	18.9	<12.4>	9.9	<16.4>	13.1	<123>	9.8	<23.55>	18.8	<13.5>	10.8	

FIG.-IV-2-1 FLOOR AREA PER BED IN PUBLIC HOSPITAL



- A Philippine DOH standard 100 bed
- B " 200 bed
- C " 300 bed
- D " 400 bed

Years of Completion	Bed Capacity	Floor Area/Bed M ²
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○ JAPAN under 200 bed

1. Kobe Rosai	64	200	37.09
2. Insatou Kyoku Odawara	68	58	70.8
3. Anan Nagano P.H	68	150	33.95
4. Kuwana P.H	68	150	54.45
5. Yokohama MUN.H	68	200	32.35
6. Tougane Chiba P.H	69	100	38.58
7. Public H "g"	69	100	37.3
8. Asikaga Red Cross H	69	148	55.92
9. Municipal "A" H	70	63	34.3
10. Municipal "C" H	70	140	42.3
11. Municipal "D" H	71	180	37.4
12. Municipal "E" H	73	200	54.6
13. Omigawa Central H	74	167	43.75

○ JAPAN 200 bed up

1. Iida MUN H	65	229	26.66
2. Municipal "I"	65	322	40.2
3. Kyoto Medical C	65	300	40.63
4. Shimabara, Nagasaki P.H	65	300	39.75
5. Kyoto MUN.H	65	519	24.20
6. Kita Yamanashi P.H	66	300	25.50
7. Public "K"	66	352	39.10
8. Takaoka MUN.H	66	356	28.54
9. Shokuiki "J"	67	348	47.1
10. Nagami MUN.H	68	220	30.40
11. Shokuiki "L"	68	374	42.0
12. Aoyama Tokyo H	69	300	43.33
13. Fuchu P.H	69	300	43.09
14. Public H	69	306	42.2
15. Sakata MUN.H	69	400	30.01
16. Municipal "G"	70	281	43.1
17. Public "M"	70	287	53.3
18. Public "N"	70	443	53.5
19. Hirosaki MUN.H	71	256	34.45
20. Kagawa Central H	71	458	42.7
21. Municipal "F"	72	279	44.0
22. Kowan Yokohama MUN.H	73	300	42.93
23. Ichinomia MUN.H	73	400	38.74
24. Public "R"	73	1,002	50.5
25. Ehime Central P.H	74	600	51.17
26. Komagome P.H	74	900	56.09
27. Totou Central P.H	75	402	65.5
28. Chigasaki MUN.H	75	228	56.61
29. Public "P"	75	939	54.5
30. Public "Q"	75	986	58.7
31. Nisuki Medical C	76	1,000	56.79

TABLE-IV-2-5 RATIO OF MARRIED-SINGLE PERSONNEL & LIVE IN RATIO

Name of the Hospital	NURSE		NURSING ATTENDANT		PHYSICIAN		ADM STAFF		SERVICE STAFF		TOTAL		GRAND TOTAL
	Single	Married	Single	Married	Single	Married	Single	Married	Single	Married	Single	Married	
Pangasinan	45 (12)		22		38		24						
Bontoc	14 (8)		23		20		14						
Baguio	102 (22)		51		66		40						
Benguet	5 (0)	19	6 (0)	10	4	12	2	10	14	35	31 (0)	86	117
La Union	4 (12)	35	3	19	6	17	7	8	45	84	65	163	228 (25)
Abra	8	9	4	9	1	2	2	6	14	31	29	57	86 (8)
Gabriela Silang	12 (12)	13	5	9	11 (3)	(4)	12 (3)	(4)	31 (4)	(2)	(10)	(9)	
Don M. Marcos	23 (24)	15	8	14	7	6	7	17	16	44	61	96	157
Ilocos Norte	10 (9)	23	12	7									
Cagayan	(6)		(6)				(1)		(12)				
Kalinga Apayao	9 (2)	16	5	10	0	5	1	10	6	46			
Aparri													
Isabela	12 (14)	12	10	13	1	13	2	5	0	15			
Quirino	5 (6)	10 (1)	3	7	(3)		(2)		(3)	(2)	(17)		
Ifugao	9 (6)	9	6	7	1	2	0	8			(16)		
Maj. F. Marcos	6 (20)	17			2	9							
Nueva Vizcaya	4 (0)	6	0	6	1	3	2	6	15				
Batanes	8 (6)	7	3	9									

(): number of live-in staff

	Single : Married	Now	Future
		Nurse	1 : 1.66 (37.6% : 62.4%)
Nursing Attendant	" "	1 : 1.85 (35.1% : 64.9%)	→ 30% : 70%
Physician	" "	1 : 3.00 (25.0% : 75.0%)	→ 40% : 60%
ADM staff	" "	1 : 3.04 (24.8% : 75.2%)	→ 20% : 80%
Service Staff	" "	1 : 2.68 (27.2% : 72.8%)	→ 25% : 75%

SOURCES: Field Survey Questionnaire.

TABLE-IV-2-6 THE LIST OF THE STAFF ACCOMMODATION STANDARD

	POSITION	TYPE	UNIT AREA (M ²)	100 BED		200 BED		300 BED		450 BED	
				Urban Location	Remote Location	Urban Location	Remote Location	Urban Location	Remote Location	Urban Location	Remote Location
CHIEFS	Hospital Director's Residence	3 DK	61.5* ₁	1	1	1	1	1	1	1	1
	Administrative Officer's Residence		52.5* ₁	1	1	1	1	1	1	1	1
	Chief Nurse's Residence	2 DK	52.5* ₁	1	1	1	1	1	1	1	1
	Chief of Clinics Residence		52.5* ₁	0	0	1	1	1	1	1	1
PHYSICIAN	Med. Doctor (with family)	2 K	45.5* ₁	6	6	14	14	23	23	37	37
	Med. Doctor (unmarried or Sep. from family)	DUPLEX	49.0* ₁	4	4	8	8	16	16	24	24
FEMALE	Administrative Staff (unmarried)			0	1	0	2	0	3	0	4
	Nurse (unmarried)			7	7	12	12	22	22	32	32
	Nurse (married)	4 PERSONS ROOM	53.625* ₂	4	6	6	32	10	15	14	84
	Nurse Attendant (unmarried)			6	6	10	10	19	19	26	26
	Nurse Attendant (married)			3	5	4	7	9	15	12	19
	Services Staff			0	3	0	4	0	6	0	8
MALE	Administrative Staff (unmarried)			1	1	1	1	1	1	2	2
	Nurse Attendant (unmarried)	4 PERSONS ROOM	60.125* ₂	1	1	2	8	3	3	5	16
	Maintenance (unmarried)			3	3	2	2	4	4	5	5
	Driver (unmarried and married)			3	3	3	3	4	4	4	4
	Dormitory Manager	2 K	45.5* ₁	1	1	1	1	1	1	1	1

Note: Isabela uses 100 bed remote location standards. Also, La Union uses 200 bed remote location standards.

*1 Including the veranda area

*2 Including the outside hallway and bathroom area.

TABLE-IV-2-7 MEDICAL SERVICE (MOH STANDARD, EXISTING AND REQUESTED SERVICES)

x: EXISTING SERVICE
o: REQUESTED SERVICE

Standard & Hospital Name	Standard				Region I										Region II								
	Emergency Hospital (25-50 Beds)	Provincial Hospital (100 Beds)	Regional Hospital (300 Beds)	Medical Center (450 Beds)	Pangasinan Provincial Hospital	Bontoc Provincial Hospital	Baguio General Hospital & Medical Center	Benguet Provincial Hospital	La Union Provincial Hospital	Abra Provincial Hospital	Gabriela Silang Provincial Hospital	Don Mariano Marcos Memorial Hospital	Ilocos Norte Provincial Hospital	Cagayan Regional Hospital	(Regional Mental) (Non Existing)	Kalinga-Apayao Provincial Hospital	Aparri Emergency Hospital	Isabela Provincial Hospital	Quirino Provincial Hospital	Ifugao Provincial Hospital	Maj. F. Marcos Veteran Memorial Hospital	Nueva Vizcaya Provincial Hospital	Batanes Provincial Hospital
Service Diagnostic Treatment					P	P	M	P	P	P	P	R	P	R	-	P	E	P	P	P	R	P	P
					265	100	249	119	150	110	88	100	163	200	-	100	32	100	73	75	115	56	75
Basic Health Services;																							
- Material & Child Health	x	x	x	x	x	x	x	x	x	x	x	x	x	x		o	o	x	x	x	x	x	x
- Family Planning	x	x	x	x	x	x	x	x	x	x	x	x	x	x		o	o	x	x	x	x	x	x
- Health Education	x	x	x	x	x	x	x	x	x	x	x	x	x	x		o	o	x	x	x	x	x	x
- Environmental Sanitation					x		x	x	x	x	x	x	x	x		x	o	x	x	x	o	x	x
- Control of Communicable Diseases							x	x	x	x	x	x	x	x		x	o	x	x	x	o	x	x
- School Health							x	x	x	x	x	x	x	x				x	x	x		x	x
- Dental Health	x	x	x	x	x	x	x	x	x	x	x	x	x	x		o	o	x	x	x	x	x	x
- Medical Care, Ambulatory	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x
- Normal Delivery	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x
- First Aid	x	x			x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x
Diagnostic Services;																							
Laboratory -																							
Urine																							
. ALB	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x
. Sugar	x	x	x	x	x	o	x	o	x	o	x	o	x	x		x	o	x	x	x	x	o	x
. Cytology	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x
- Stool Examination for Intestinal Parasites	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x
- Sputum Microscopy for Tubercule Bacilli	x	x	x	x	x	x	x	x	x	x	x	o	x	x		o	x	x	x	x	x	x	x
- Microscopy of smears from urethra, throat, rectum, exudes from wounds, etc.	x	x	x	x	x	o	x	x	x	x	x	x	x	x		o	x	x	x	x	x	x	x
- Blood																							
. Complete Blood Count	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x
. Hemoglobin	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x
. Examination for Malaria Parasite	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x
. Typing and X-matching	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x
. RH and Other Factors							o	o	o	o	o	o	o	o		o	o	o	o	o	o	o	o
. Pro-thrombin Time		x	x	x			x	o	o	o	o	o	o	o		o	o	x	x	x	o	o	o
. Hematology					x		x	x	x	x	x	x	x	x		o	o	x	x	x	o	o	o

Standard & Hospital Name	Standard				Region I										Region II								
	Emergency Hospital (25-50 Beds)	Provincial Hospital (100 Beds)	Regional Hospital (300 Beds)	Medical Center (450 Beds)	Pangasinan Provincial Hospital	Bontoc Provincial Hospital	Baguio General Hospital & Medical Center	Benguet Provincial Hospital	La Union Provincial Hospital	Abra Provincial Hospital	Gabriela Silang Provincial Hospital	Don Mariano Marcos Memorial Hospital	Ilocos Norte Provincial Hospital	Cagayan Regional Hospital	(Regional Mental) Non Existing	Kalinga-Apayao Provincial Hospital	Aparri Emergency Hospital	Isabela Provincial Hospital	Quirino Provincial Hospital	Ifugao Provincial Hospital	Maj. F. Marcos Veteran Memorial Hospital	Nueva Vizcaya Provincial Hospital	Batanes Provincial Hospital
	P	P	M	P	P	P	P	P	P	P	P	R	P	R	-	P	E	P	P	P	R	P	P
265	100	249	119	150	110	88	100	163	200	-	100	32	100	73	75	115	56	75					
. Chemistry	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x
.. NPN	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x
.. BUN	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x
.. UREA	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x
.. Uric Acid	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x
.. Creatinine	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x
.. Sugar	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x
.. Cholesterol	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x
.. PBI		x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x
.. SGOT		x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x
.. SGPT		x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x
. Electrolytes		x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x
. Cases				x																			
- Bacteriology																							
. Culture for Identification of Micro-organism		x	x	x					x														
. Antibiotic Sensitivity Testing of Micro-organism		x	x	x				x	x														
. Special Cultures																							
.. Anaerobic Micro-organism			x	x																			
.. T.B.			x	x																			
.. Diptheria			x	x																			
.. Tissue Culture for Virus and Chromosome Study																							
- Pathology																							
. Anatomic	x	x	x	x												x							
. Microscopic																							
.. Cytopathology			x	x					x														
.. Tissue Pathology														x									
- Serology																							
. Blood			x	x																			
. CSP			x	x																			

Standard & Hospital Name	Standard				Region I									Region II									
	Emergency Hospital (25-50 Beds)	Provincial Hospital (100 Beds)	Regional Hospital (300 Beds)	Medical Center (450 Beds)	Pangasinan Provincial Hospital	Bontoc Provincial Hospital	Baguio General Hospital & Medical Center	Benguet Provincial Hospital	La Union Provincial Hospital	Abra Provincial Hospital	Gabriela Silang Provincial Hospital	Don Mariano Marcos Memorial Hospital	Ilocos Norte Provincial Hospital	Cagayan Regional Hospital	(Regional Mental) (Non Existing)	Kalinga-Apayao Provincial Hospital	Aparri Emergency Hospital	Isabela Provincial Hospital	Quirino Provincial Hospital	Ifugao Provincial Hospital	Maj. F. Marcos Veteran Memorial Hospital	Nueva Vizcaya Provincial Hospital	Batanes Provincial Hospital
Service Diagnostic Treatment					P	P	M	P	P	P	P	R	P	R	-	P	E	P	P	P	R	P	P
					265	100	249	119	150	110	88	100	163	200	-	100	32	100	73	75	115	56	75
Diagnostic Radiology;																							
- Chest	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x
- Fracture	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x
- KUD	x	x	x	x	x	o	x	x	x	x	x	x	x	x		x	o	x	o	x	x	x	x
- IVP	x	x	x	x	x	o	x	x	x	o	x	x	x	x		o	o	o	o	o	x	o	o
- Retrograde Pyelography		x	x	x	o	o	x	o	o	o	o	o	o	o		o	o	o	o		x	o	o
- Skeletal Studies		x	x	x	x	o	x	x	o	o	o	o	o	o		o	o	o	o		x	o	o
- Mammography			x	x			o		o	o	o	o	o	o		o	o	o	o		o	o	o
- G.I. Series				x																			
. Chole G.I.		x	x	x	x	o	x	x	x	o	x	x	x	x		o	o	x	o		x	x	x
. Barium Swallow Oreneme		x	x	x	x	o	x	x	x	o	x	x	x	x		o	o	x	o		x	x	x
- Angiography		x	x	x			o		o	o	o	o	o	o		o	o	o	o		o	o	o
- Angio-cardiography			x	x			o		o	o	o	o	o	o		o	o	o	o		o	o	o
Other Diagnostic Examinations;																							
- ECG		x	x	x	x	x	x	x	x	x	x	x	x	x		o	x	x			x	x	x
- EMR		x	x	x	o	o	o	o	o	o	o	o	o	o		o	o	o	o		o	o	o
- EEG				x	o	o	o	o	o	o	o	o	o	o		o	o	o	o		o	o	o
- EMG				x	o	o	o	o	o	o	o	o	o	o		o	o	o	o		o	o	o
- Echo-encephalogram				x	o	o	o	o	o	o	o	o	o	o		o	o	o	o		o	o	o
- Pulmonary Function Test				x	o	o	o	o	o	o	o	o	o	o		o	o	o	o		o	o	o
- Electrophoresis				x			o		o	o	o	o	o	o		o	o	o	o		o	o	o
- Nuclear Medicine				x			o		o	o	o	o	o	o		o	o	o	o		o	o	o
. Thyroid Uptake and Scan			x	x			o		o	o	o	o	o	o		o	o	o	o		o	o	o
. Renogram and Renal Scan				x			o		o	o	o	o	o	o		o	o	o	o		o	o	o
. Brain Scan				x			o		o	o	o	o	o	o		o	o	o	o		o	o	o
. Liver Scan				x			o		o	o	o	o	o	o		o	o	o	o		o	o	o
. Whole Body Scan				x			o		o	o	o	o	o	o		o	o	o	o		o	o	o
Patient Treatment Facility;																							
- Out-Patient (Ambulatory Care)	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x		x	x	x
- In-Patient	x	x	x	x	x	x		x	x	x	x	x	x	x		x	x	x	x		x	x	x
. General Care																							

Standard & Hospital Name	Standard				Region I										Region II								
	Emergency Hospital (25~50 Beds)	Provincial Hospital (100 Beds)	Regional Hospital (300 Beds)	Medical Center (450 Beds)	Pangasinan Provincial Hospital	Bontoc Provincial Hospital	Baguio General Hospital & Medical Center	Benguet Provincial Hospital	La Union Provincial Hospital	Abra Provincial Hospital	Gabriela Silang Provincial Hospital	Don Mariano Marcos Memorial Hospital	Ilocos Norte Provincial Hospital	Cagayan Regional Hospital (Regional Mental) (Non Existing)	Kalinga-Apayao Provincial Hospital	Aparri Emergency Hospital	Isabela Provincial Hospital	Quirino Provincial Hospital	Ifugao Provincial Hospital	Maj. F. Marcos Veteran Memorial Hospital	Nueva Vizcaya Provincial Hospital	Batanes Provincial Hospital	
	P	P	M	P	P	P	P	P	P	R	P	R	-	P	E	P	P	P	R	P	P		
				265	100	249	119	150	110	88	100	163	200	-	100	32	100	73	75	115	56	75	
Specialized Care																							
.. Medicine																							
... Nutritional Defficiency States		x	x	x	x	x	x	x	x	x	o	x	x	x	o	x	x				x	x	
... Cardiology		x	x	x	x	x	x	x	x	x	x	o	x	x	o	x	x				o	o	
... Neurology		x	x	x	x	x	x	x	x	x	o	x	x	x	o	x	x				o	o	
... Gastroenterology		x	x	x	x	x	x	x	x	x	o	x	x	x	o	x	x				o	o	
... Communicable Diseases		x	x	x	x	x	x	x	x	x	o	x	x	x	o	x	x				o	o	
... Psychiatry		x	x	x	x	x	x	x	x	x	o	x	x	x	o	x	x				o	o	
... Physiology, Chest Diseases			x	x	x	x	x	x	x	x	o	x	x	x	o	x	x				o	o	
... Metabolic Diseases			x	x	x	x	x	x	x	x	o	x	x	x	o	x	x				o	o	
... Dermatology		x	x	x	x	x	x	x	x	x	o	x	x	x	o	x	x				o	o	
... Endocrinology			x	x	x	x	x	x	x	x	o	x	x	x	o	x	x				o	o	
... Rheumatology			x	x	x	x	x	x	x	x	o	x	x	x	o	x	x				o	o	
... Oncology				x	x	x	x	x	x	x	o	x	x	x	o	x	x				o	o	
... Garontology			x	x	x	x	x	x	x	x	o	x	x	x	o	x	x				o	o	
... Infectious Diseases		x	x	x	x	x	x	x	x	x	o	x	x	x	o	x	x				o	o	
... Nephrology			x	x	x	x	x	x	x	x	o	x	x	x	o	x	x				o	o	
... Immunology			x	x	x	x	x	x	x	x	o	x	x	x	o	x	x				o	o	
... Nuclear Medicine				x							o				o						o	o	
.. Surgery																							
... General Surgery	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x				x	x	
... Chest																							
... Orthopedics		x	x	x	x	x	x	x	x	x	o	x	x	x	o	x	x				o	o	
... Neurosurgery											o										o	o	
... Head and Necks											o										o	o	
... Ophthalmology		x	x	x	x	x	x	x	x	x	o	x	x	x	o	x	x				o	o	
... Oto-laryngology		x	x	x	x	x	x	x	x	x	o	x	x	x	o	x	x				o	o	
... Phinology		x	x	x	x	x	x	x	x	x	o	x	x	x	o	x	x				o	o	
... Plastic and Reconstructive Surgery											o										o	o	
... Proctology											o										o	o	
... Pediatric Surgery											o										o	o	
... Cardio-vascular Surgery											o										o	o	
... Obstetrics & Gynecology	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x				x	x	

Standard & Hospital Name	Standard				Region I								Region II										
	Emergency Hospital (25x50 Beds)	Provincial Hospital (100 Beds)	Regional Hospital (300 Beds)	Medical Center (450 Beds)	Pangasinan Provincial Hospital	Bontoc Provincial Hospital	Baguio General Hospital & Medical Center	Benguet Provincial Hospital	La Union Provincial Hospital	Abra Provincial Hospital	Gabriela Silang Provincial Hospital	Don Mariano Marcos Memorial Hospital	Ilocos Norte Provincial Hospital	Cagayan Regional Hospital (Regional Mental) (Non Existing)	Kalinga-Apayao Provincial Hospital	Aparri Emergency Hospital	Isabela Provincial Hospital	Quirino Provincial Hospital	Ifugao Provincial Hospital	Maj. F. Marcos Veteran Memorial Hospital	Nueva Vizcaya Provincial Hospital	Batanes Provincial Hospital	
	P	P	M	P	P	P	P	P	P	P	R	P	R	-	P	E	P	P	P	R	P	P	
Service Diagnostic Treatment					265	100	249	119	150	110	88	100	163	200	-	100	32	100	73	75	115	56	75
<ul style="list-style-type: none"> .. Pediatrics ... Pediatrics Cardiology ... Pediatric Psychiatry . Rehabilitation .. Physical Medicine .. Occupational Therapy .. Vocational Rehabilitation - Special Patient Care Areas . Recovery Room . Intensive Care Unit . Coronary Care Unit . Hemodialysis Unit 		x	x	x x x	o	o	o	x	o		x	o	o	x	o	o				o	o	o	x

TABLE-IV-2-8 MANPOWER STANDARD OF PHILIPPINES. (MOH AND EXISTING MEDICAL STAFF OF PROJECT HOSPITALS)

II: Teaching and Training

STANDARD AND NAME OF PROJECT HOSPITALS	NAME OF STAFF																						
	100 BBD	100 BBD + IT	200 BBD + IT	300 BBD + IT	450 BBD + IT	Pangasinan	Bontoc	Baguio	Benguet	La Union	Abra	Gabriela Silang	Don Mariano Marcos	Ilocos Norte	Cagayan	Kalinga-Apayao	Apariti	Isabela	Quirino	Iligan	Maj Marcos Veteran	Nueva Vizcaya	Batanes
Chief of Hospital	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Chief of Clinics	0	0	1	1	1		1							1	1								
Medical Specialist	14	28	40	50	72	13	2	20		1	1		3	1	1		5				2		
Dentist	3	3	4	6	5			3	1	1	1	1	2	2	3	1	1	1	1	1		1	1
Resident Physician	23	29	67	114	107	23	16	41	15	24	1	8	9	6	21	4	1	7	3	2	12	4	
SUB TOTAL	41	61	113	172	186	37	19	66	17	27	4	10	15	11	27	6	2	14	5	4	15	6	
Chief Nurse	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Assistant Chief Nurse	1	1	1	1	1	1		1				1	1	1	1								
Nurse	34	43	75	118	171	43	22	100	22	12	15	21	38	31	10	25	3	23	15	18	24	9	
Nursing Attendant	26	28	47	82	115	22	14	51	17	23	13	14	20	19	2	16	3	21	11	13	17	6	
Midwife	0	0	0	0	15										1		1						
SUB TOTAL	62	72	124	202	303	67	37	153	40	36	29	37	60	52	15	42	8	45	27	32	42	16	
Pharmacist	3	3	6	6	7	3	1	5	2	2	2	2	3	2	3	1		2	1	1	1	1	
Pharmacy Aide	2	3	4	4	4	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1	1	
Dental Aide	2	3	3	4	3	1	1	1	1	1	1	1	1	1	2	1			1		1	1	
Medical Radiation Technologist	1	1	1	2	4	2				1													
Medical Radiation Technician	1	1	2	3	4			4	1	1	1			1		1				1	1	1	
Medical Radiation Aide	2	1	2	3	0					2													
Health Physicist	0	0	0	0	2																		
Medical Technologist	3	2	3	4	8	1	1	5	1	1	1		1	1		2	1		1			1	

2. Medical Service Standard

Table of Floor Area Standard prepared by Department of Health of Republic of the Philippines including the present condition and requirements of project hospitals.

3. Manpower Standard

1) Analysis of Ministry of Health Standard

According to the Ministry of Health standard, the total number of staff, as classified by the number of beds, is given below:

100 beds	200 persons
100 beds t/t (Teaching & Training)	239
200 beds t/t	424
300 beds t/t	594
450 beds t/t	786

This suggests that the target is set at two staffs per bed, but it would rather be advisable to compute a rough manpower ratio according to the "patient scale" for doctors, nurses and other divisions.

The computation of the patient scale will be based on the following guideline.

Number of staff is in proportion to "patient scale" (number of inpatient a day + 1/3 × number of out-patient a day) and the ideal bed occupancy rate will be set at 85%. The 85% is considered a yardstick to determine whether additional beds should be needed, but it might be considered most desirable that the hospital would be operated with this ratio.

(NOTE) At present, the ratio of the number of annual new admission to that of OPD consultation at public hospitals (at the tertiary level) in the Philippines is:

43,108 : 87,368 - 1 : 2 in Region I
40,037 : 14,911 - 1 : 4 in Region II,

roughly averaging 1:3. At present, the average stay of in-patient is about six days. If it is assumed here that this number will increase to nine days or so in the future, the patient-day ratio will be 9:3, say 3:1. If the projected bed capacity for each hospital is set at B, the patient scale a day will be $0.85 \times B + 1/3 \times 0.85B$.

On the basis of the foregoing premise, the patient scale will be:

100 beds	113
200 beds	227
300 beds	340
450 beds	510

The ratio of the number of staff members to every 100 patient scale is going to be used herein after for the comparison of manpower datum.

(1) Total Number of Hospital Staff

Total Number of Staff per 100 Patient Scale

Hospital scale	Ministry of health standard (A)	Proposed standard plan (B)	Present situation: mean value of Region I and II (C)	Mean value of hospitals affiliated with local autonomous bodies with the balance kept in the black. (D)	A/D	B/D	C/D
100 BED	211.5	116.8	73.5	36.3	5.8	3.2	2.0
200 BED	186.8	90.7	24.2	41.6	4.5	2.2	0.6
300 BED	174.7	105.6	34.2	43.6	4.0	2.4	0.8
450 BED	154.1	94.7	—	47.9	3.2	2.0	—

According to the standard plan of the Ministry of Health, the total number of staff is designed to be 3.2 to 5.8 times that of the hospital affiliated with local autonomous bodies in Japan with the balance kept in the black. The proposed Standard is 2.0 to 3.2 times higher. The mean values of Regions I and II are 0.6 to 2.0 times higher. In general terms, it might be said that the manpower target which is about 2.5 times that of the hospitals affiliated with local autonomous bodies in Japan with the balance kept in the black is appropriate. The proposed manpower standard is for Region I eventually somewhat higher, whereas there will be considerable increase in manpower for Region II.

TABLE-IV-2-9 MANPOWER STANDARD OF MOH

STATION		BED CAPACITY						
		100 bed	100 bed T/T	200 bed T/T	300 bed T/T	450 bed T/T		
CHIEFS		CHIEF OF HOSPITAL	1	1	1	1	1	
		CHIEF OF CLINIC	-	-	1	1	1	
		MEDICAL SPECIALIST	1	2	1	1	1	
MEDICINE DEPT.	GENERAL MEDICINE	TEACHING MEDICAL SPECIALIST	1	1	1	1	1	
		MEDICAL SPECIALIST	1	3	4	5	8	
		RESIDENT PHYSICIAN	4	4	8	12	(*)	
	PSYCHIA-TRY	TEACHING MEDICAL SPECIALIST	-	-	-	1	1	
		MEDICAL SPECIALIST	-	-	1	1	1	
		RESIDENT PHYSICIAN	-	-	1	12	(*)	
	NEUROLOGY	TEACHING MEDICAL SPECIALIST	-	-	-	-	1	
		MEDICAL SPECIALIST	-	-	-	-	1	
		RESIDENT PHYSICIAN	-	-	-	-	(*)	
	FAMILY HEALTH	TEACHING MEDICAL SPECIALIST	-	-	-	-	1	
		MEDICAL SPECIALIST	-	-	-	-	1	
		RESIDENT PHYSICIAN	-	-	-	-	(*)	
	SURGERY DEPT.	GENERAL SURGERY	TEACHING MEDICAL SPECIALIST	1	1	1	1	1
			MEDICAL SPECIALIST	2	2	4	5	8
			RESIDENT PHYSICIAN	4	4	8	12	(*)
ORTHO-PEDICS		TEACHING MEDICAL SPECIALIST	-	-	1	1	1	
		MEDICAL SPECIALIST	-	1	1	2	1	
		RESIDENT PHYSICIAN	-	-	4	12	(*)	
UROLOGY		TEACHING MEDICAL SPECIALIST	-	-	-	-	1	
		MEDICAL SPECIALIST	-	-	-	-	1	
		RESIDENT PHYSICIAN	-	-	-	-	(*)	
OTHERS	OB-GYNE	TEACHING MEDICAL SPECIALIST	1	1	1	1	1	
		MEDICAL SPECIALIST	-	2	4	4	6	
		RESIDENT PHYSICIAN	4	4	8	12	(*)	

STATION		BED CAPACITY	100	100	200	300	450
			bed	bed T/T	bed T/T	bed T/T	bed T/T
OTHERS	PEDIA	TEACHING MEDICAL SPECIALIST	1	1	1	1	1
		MEDICAL SPECIALIST	-	2	4	4	6
		RESIDENT PHYSICIAN	4	4	8	12	(*)
	EENT	TEACHING MEDICAL SPECIALIST	-	-	1	1	1
		MEDICAL SPECIALIST	-	1	1	2	4
		RESIDENT PHYSICIAN	-	-	4	12	(*)
DENTAL		DENTIST	3	3	4	6	5
ANCILLARY DEPT	LABOLA- TORY	TEACHING MEDICAL SPECIALIST	-	1	1	1	1
		MEDICAL SPECIALIST	3	1	2	4	4
		RESIDENT PHYSICIAN	-	3	6	6	8
	RADIATION	TEACHING MEDICAL SPECIALIST	-	1	1	1	1
		MEDICAL SPECIALIST	1	2	4	5	6
		RESIDENT PHYSICIAN	2	4	8	6	7
	ANESTISIA	TEACHING MEDICAL SPECIALIST	-	1	1	1	1
		MEDICAL SPECIALIST	1	1	2	4	4
		RESIDENT PHYSICIAN	3	3	6	9	-
	REHABILI- TATION	TEACHING MEDICAL SPECIALIST	-	-	-	-	1
		MEDICAL SPECIALIST	-	-	-	-	1
		RESIDENT PHYSICIAN	-	-	-	-	(*)
	OPD	TEACHING MEDICAL SPECIALIST	-	1	1	1	1
		MEDICAL SPECIALIST	1	1	2	2	1
		RESIDENT PHYSICIAN	2	3	6	9	-
	EMERGENCY	TEACHING MEDICAL SPECIALIST	-	-	-	-	1
		MEDICAL SPECIALIST	-	-	-	-	1
	TOTAL		HOSPITAL DIRECTOR	1	1	1	1
CHIEF OF CLINIC			-	-	1	1	1
TEACHING MEDICAL SPECIALIST			4	8	10	11	16
MEDICAL SPECIALIST			10	20	30	39	56
RESIDENT PHYSICIAN			23	29	67	114	107

Total of (*) is 92 Resident Physicians.

TABLE-IV-2-10 PROPOSED MANPOWER STANDARD

STATION		BED	100 bed T/T	200 bed T/T	300 bed T/T	450 bed T/T
CHIEF	CHIEF OF HOSPITAL		1	1	1	1
	CHIEF OF CLINIC		-	1	1	1
	TEACHING MEDICAL SPECIALIST		-	-	-	1
MEDICINE	TEACHING MEDICAL SPECIALIST		* ₁	* ₁	1	1
	MEDICAL SPECIALIST		1	1	2	4
	RESIDENT PHYSICIAN		1	3	5	10
SURGERY	TEACHING MEDICAL SPECIALIST		* ₂	* ₂	1	1
	MEDICAL SPECIALIST		1	1	1	1
	RESIDENT PHYSICIAN		1	3	4	6
OB-GYNE	TEACHING MEDICAL SPECIALIST		* ₂	* ₂	* ₄	* ₄
	MEDICAL SPECIALIST		-	1	1	1
	RESIDENT PHYSICIAN		1	2	2	3
PEDIATRICS	TEACHING MEDICAL SPECIALIST		* ₁	* ₁	* ₄	* ₄
	MEDICAL SPECIALIST		-	1	1	1
	RESIDENT PHYSICIAN		1	2	3	3
OPHTHALMOLOGY	TEACHING MEDICAL SPECIALIST				* ₄	* ₄
	MEDICAL SPECIALIST				1	1
	RESIDENT PHYSICIAN				1	2
ENT	TEACHING MEDICAL SPECIALIST				* ₄	* ₄
	MEDICAL SPECIALIST				1	1
	RESIDENT PHYSICIAN				1	2

STATION		BED			
		100 bed T/T	200 bed T/T	300 bed T/T	450 bed T/T
LABORATORY	TEACHING MEDICAL SPECIALIST	* ₁	* ₁	* ₁	* ₄
	MEDICAL SPECIALIST	-	-	-	1
	RESIDENT PHYSICIAN	1	1	2	2
RADIATION	TEACHING MEDICAL SPECIALIST	* ₃	* ₃	* ₃	* ₄
	MEDICAL SPECIALIST	-	-	-	1
	RESIDENT PHYSICIAN	1	2	3	4
ANESTHESIA	TEACHING MEDICAL SPECIALIST	* ₂	* ₂	* ₂	* ₄
	MEDICAL SPECIALIST	-	-	-	1
	RESIDENT PHYSICIAN	-	1	2	3
REHABILITATION	TEACHING MEDICAL SPECIALIST	-	-	* ₂	* ₄
	MEDICAL SPECIALIST	-	-	-	1
	RESIDENT PHYSICIAN	-	-	1	1
DENTAL	DENTIST	1	1	2	2
TRAINING	MEDICAL SPECIALIST	-	-	-	5
TOTAL	CHIEF OF HOSPITAL	1	1	1	1
	CHIEF OF CLINIC	-	1	1	1
	TEACHING MEDICAL SPECIALIST	-	-	2	3
	DENTIST	1	1	2	2
	MEDICAL SPECIALIST	2	5	10	18
	RESIDENT PHYSICIAN	7	16	25	38

NOTE One training medical specialist is assigned per 450 beds and his main duty is to provide guidance in training. The clinic chief serves as training medical specialist for 200-300 beds and the chief of hospital for 100 beds.

- *1 The chief of hospital, chief of clinic or internal medicine specialist serves as teaching medical specialist.
- *2 The chief of hospital, chief of clinic or surgeon serves as teaching medical specialist.
- *3 The chief of hospital, chief of clinic or internal medicine specialist and surgeon serve as teaching medical specialists.
- *4 A medical specialist of a given department serves as teaching medical specialist.

2) Staffing Pattern of Medical Specialists and Resident Trainees

Excluding the chief of hospital, chief of clinic and dentists, the standard plan of the Ministry of Health sets the number of medical specialists at 61 for 100 beds, 113 for 200 beds, 172 for 300 beds and 186 for 450 beds, and these figures prove to be far apart from the present situation. Only the number of the Baguio General Hospital is close to that which is indicated in the standard plan. Particularly, the shortage of medical specialists in Region II is serious, and there are a total of five hospitals where only the chief of hospital is a medical specialist.

The ratio of medical specialists per 100 patients scale is compared below against the hospitals affiliated with local autonomous bodies in Japan with the balance kept in the black.

BED	MOH Standard plan (A)	Proposed standard plan (B)	Mean value of Regions I and II at present (C)	Government Hospital in Japan with the balance kept in the black (D)	A/D	B/D	C/D
100 BED	54.0	9.7	9.2	3.0	18.00	3.23	3.06
200 BED	49.8	10.6	8.8	3.3	15.09	3.21	2.67
300 BED	50.6	12.1	15.1	4.0	12.65	3.03	3.78
450 BED	36.5	12.4	-	4.7	7.77	2.64	-

The table indicates that the ratios are 8 to 18 times higher than those contained in the Japanese government hospitals average, suggesting that they are unrealistic, and that the way the standard plan of the Philippines had been formulated is problematical. Problems are posed in respect to the way in which manpower is to be organized for the establishment of a departmental hierarchy of regular medical specialists and resident physicians when each clinic is departmentalized. There is a need to reorganize manpower in such a flexible manner as to enable medical specialists to serve concurrently as teaching medical specialists. It is also necessary to reconsider the training method with due consideration given to the present situation in which resident physicians also play the role of medical specialists as a matter of fact.

It may not be considered realistic to enforce a man-to-man training system between medical specialists and resident trainees in each department of a 100-bed hospital, when the present situation in which the degree of dependency is high at public hospitals (with the medical specialists-to-resident trainees ratio standing at 1:9 at present) even in near future. And also because even the distribution of young resident to local public hospital will be realized, experienced medical specialist will hardly increase in local public hospital in near future. So it is advisable to adopt a system whereby all medical specialists (including the chief of hospital) will provide advice to resident trainees who work virtually as medical specialists at each department for a 100-bed level hospital. For a 200-bed hospital, it is advisable to adopt a system whereby one medical specialist each will be assigned to four principal departments (medicine, surgery, obstetrics and gynecology, and pediatrics) to enable medical specialists to give man-to-man training to resident trainees. At other departments, it is advisable to adopt a wholesome advice system as in the case of 100-bed hospitals. It is also better to set the framework of one medical specialist or so from a lower-level hospital.

At a 300-bed hospital, a total of seven medical specialists (three for five internal medicine departments, two for two surgical departments, one for the obstetric and gynecological department, and one for the pediatric department) will be assigned to four principal departments, whereas one to five resident physicians will be assigned to various departments for training. The

training framework of medical specialists from lower-level hospitals is set at three persons.

At a 450-bed hospital, which has 300 beds level ancillary and OPD services with additional 150 beds, medical specialists will be assigned to four principal departments (five for five departments of internal medicine, two for two surgical departments, one for the obsteric and gynecological department and one for the pediatric department) and also to other departments (one for the ophthamological department, one for the ENT department, one for rehabilitation, one for the anesthetic department, one for the laboratory and one for the radio logical department) and training will be conducted with 2 ~ 10 trainees assigned to each department. The training framework of medical specialists from lower-level hospitals is set at five or so.

3) Staffing Pattern of Nurses and Nursing Attendants

According to the present standard plan of the MOH the number of nurses is 34-43 for 100 beds, 75 for 200 beds, 118 for 300 beds and 171 for 450 beds. The staffing pattern is so designed that one nurse and one nursing attendant will be assigned under a three-shifts-a-day system on six work days a week in a nursing unit of 25 persons.

Even though the personnel cost of nurses is low and their labor is readily accessible at present, future rises in the personnel cost are fully likely to lie heavier on hospital management. As things now stand, the average number of nurses is about 19 for a 100-bed hospital and 48 for hospitals with 200-250 beds, suggesting the existence of a twofold difference. The ratio of nurses per 100 patient scale is compared below against that of the hospitals affiliated with local autonomous bodies in Japan with the balance kept in the black.

BED	MOH standard plan (A)	Proposed standard plan (B)	Mean value of Regions I and II at present (C)	Government Hospital in Japan with the balance kept in the black (D)	A/D	B/D	C/D
100 BED	63.7	40.7	34.3	14.6	4.36	2.79	2.35
200 BED	54.6	33.5	16.0	18.6	2.94	1.80	0.86
300 BED	59.4	41.5	32.4	21.2	2.80	1.96	1.53
450 BED	59.4	37.6	—	25.1	2.37	1.50	—

The table suggests differences of 2.4 to 4.4 times.

Next, the breakdown of nurses and nursing attendants is as follows:

(1) Nurses

BED	MOH standard plan (A)	Proposed standard plan (B)	Mean value of Regions I and II at present (C)	Government Hospital in Japan with the balance kept in the black (D)	A/D	B/D	C/D
100 BED	38.1	21.1	20.0	12.6	3.02	1.68	1.59
200 BED	33.0	18.5	8.5	16.9	1.95	1.09	0.50
300 BED	34.7	21.7	21.0	19.5	1.78	1.12	1.08
450 BED	33.5	19.4	—	22.6	1.48	0.86	—

(2) Nursing Attendants

BED	MOH standard plan (A)	Proposed standard plan (B)	Mean value of Regions I and II at present (C)	Government Hospital in Japan with the balance kept in the black (D)	A/D	B/D	C/D
100 BED	24.8	19.5	13.6	2.0	12.40	9.75	6.80
200 BED	20.7	15.0	6.7	1.7	12.18	8.82	3.94
300 BED	24.1	19.7	10.7	1.7	14.18	11.52	6.29
450 BED	22.5	18.2	—	2.5	9.00	7.28	—

This table suggests that the degree of dependency on nursing attendants in the Philippines is exceedingly high.

We have suggested that the nursing unit shall be set at 50 persons and the staffing pattern shall be a three-shifts-a-day system of one nurse and two nursing attendants on a six work days a week so that a flexible

assignment may be realized to prevent excessive hard work with due consideration paid to the sick leave and absence of nurses. Thus, there is a need to assign four persons per nursing unit in wards. With an additional person authorized, the framework will be set at five persons altogether. In the future, the assignment will be planned so that one nurse and one nursing attendant may work in a shift system for each nursing unit. Furthermore, one senior nurse will be assigned for each nursing unit. The assignment of 3-10 nurses for each department (outpatient service, surgery, delivery and central supply) according to the standard plan, of MOH but this assignment seems excessive when the present situation is taken into consideration. It is better to assign 10-39 persons for all departments, depending on the scale, whereas senior nurses will be assigned at a rate of one per 100 beds, one for 200 beds for outpatient and emergency care quarters, and one each for the surgical operation, delivery, central supply and nursery department. In the case of 300-450 beds, one person will be assigned for the outpatient and emergency care departments, one for the surgery, delivery and central supply and one for the neonate and ICU.

For the overall control of the nursing division of a hospital, one chief nurse, assistant chief nurses and supervising nurses will be assigned. In the case of 100 beds, neither assistant chief nurses nor supervising nurses will be assigned. Only a chief nurse and an assistant chief nurse will be assigned for a 200-bed hospital, whereas one chief nurse, one assistant chief nurse and one supervising chief nurse will be assigned for a hospital with 300-450 beds. This time, no consideration is given to the assignment of training instructors, and the chief nurse, assistant chief nurse or supervising nurse or the senior nurse of each department will serve as training instructor, depending on the scale and circumstances.

TABLE-IV-2-11 COMPUTATION OF MAPPOWER OF NURSES AND NURSING ATTENDANTS

SECTION		STAFF	MOH STANDARD						PROPOSED STANDARD			
			100	100 T/T	200 T/T	300 T/T	450 T/T		100 T/T	200 T/T	300 T/T	450 T/T
MANAGEMENT	Chief Nurse		1	1	1	1	1	MANAGEMENT	1	1	1	1
	Assistant Chief Nurse		1	1	1	1	1		0	1	1	1
	Supervising Nurse		-	1	2	1	4		0	0	0	1
	Nurse Instructor		-	2	4	4	6		0	0	0	0
WARD	Supervising Nurse		3	4	6	8	6	WARD	2	4	6	9
	Senior Nurse		4	4	8	12	18		8	16	24	36
	Nurse		14	14	28	45	65		2	4	6	9
	Nursing Trainee		-	2	2	15	15		8	16	24	36
	Nursing Attendant		14	14	28	45	60		2	4	6	9
	Nursing Attendant trainee		-	2	2	15	15		12	14	37	48
OPERATION	Supervising Nurse		-	-	1	1	1	OTHERS	1	2	3	3
	Senior Nurse		1	1	2	2	6		10	14	32	39
	Nurse		3	3	6	8	10		12	14	37	48
	Nursing Attendant		3	3	6	8	8					
DELIVERY	Supervising Nurse		-	-	-	1	1					
	Senior Nurse		1	1	2	3	3					
	Nurse		3	3	4	6	6					
	Nursing Attendant		3	3	4	6	8					
OPD	Supervising Nurse		-	1	1	1	1		* See Note (1)	* See Note (2)	* See Note (3)	* See Note (4)
	Senior Nurse		1	1	1	3	2					
	Nurse		3	3	4	8	6					
	Nursing Attendant		3	3	4	8	8					
EMERGENCY	Supervising Nurse		-	-	-	-	1					
	Senior Nurse		-	-	-	-	2					
	Nurse		-	-	-	-	8					
	Nursing Attendant		-	-	-	-	8					
CENTRAL SUPPLY	Senior Nurse		-	-	1	-	2					
	Nurse		1	3	3	-	5					
	Nursing Attendant		3	3	3	-	4					

	SHIFT	NOTE
* 1	7:00 ~ 15:00	Surgery division: 2 persons + 2 persons (concurrently for the delivery division); outpatient division: 2 persons + 4 persons; central supply division: 1 person + 1 person; neonate division: 1 person + 1 person
	15:00 ~ 23:00	1 person + 1 person for emergency care, delivery, central supply and neonate divisions
	23:00 ~ 7:00	1 person + 1 person for emergency care, delivery, central supply and neonate divisions
* 2	7:00 ~ 15:00	Surgery and delivery division: 3 persons + 3 persons; outpatient division: 4 persons + 4 persons; central supply division: 2 persons + 2 persons; neonate division: 1 person + 1 person
	15:00 ~ 23:00	1 person + 1 person for emergency care, delivery, central supply and neonate divisions
	23:00 ~ 7:00	1 person + 1 person for emergency care, delivery, central supply and neonate divisions
* 3	7:00 ~ 15:00	Surgery and delivery division: 5 persons + 5 persons; outpatient division: 9 persons + 11 persons, central supply division: 3 persons + 4 persons; neonate division: 1 person + 2 persons; emergency care division: 1 person + 1 person; ICU: 1 person + 1 person
	15:00 ~ 23:00	Delivery, emergency care and central supply division: 2 + 2 persons; neonate division: 1 person + 1 person; ICU: 1 person + 1 person
	23:00 ~ 7:00	Delivery and emergency care division: 1 person + 1 person; neonate division: 1 person + 1 person; ICU: 1 person + 1 person
* 4	7:00 ~ 15:00	Surgery and delivery division: 6 persons + 6 persons; outpatient care division: 11 persons + 11 persons; central supply division: 5 persons + 5 persons; neonate division: 1 person + 2 persons; emergency care division: 1 person + 2 persons; ICU: 1 person + 2 persons
	15:00 ~ 23:00	Delivery, emergency care and central supply division: 3 persons + 3 persons; neonate division: 1 person + 2 persons; ICU: 1 person + 2 persons
	23:00 ~ 7:00	Delivery and emergency care division: 1 person + 2 persons; neonate division: 1 person + 2 persons; ICU: 1 person + 2 persons

4) Staffing Pattern of Paramedicals

TABLE-IV-2-12 MOH STANDARD

SECTION		BED	100	100 T/T	200 T/T	300 T/T	450 T/T
Pharmacy	Pharmacist		3	3	6	6	7
	Pharmacy Aide		2	3	4	4	4
Dental Aide			2	3	3	4	3
Radiation	Medical Radiation Tech- nologist		1	1	1	2	4
	Medical Radiation Technician		1	1	2	3	4
	Medical Radiation Aide		2	1	2	3	-
	Health Pysicist		-	-	-	-	2
Laboratory	Laboratory Technologist		3	2	3	4	8
	Laboratory Technician		-	2	3	3	-
	Laboratory Aide		2	2	4	3	4
	Physiological Test Technician		-	-	-	-	3
Other Medical Technicians for Surgery Dept.			-	-	-	-	2
Other Medical Technicians for Re- habilitation			-	-	-	-	1
Autopsy Attendant			-	-	-	-	1
Guidance Psychologist			-	-	1	1	4
Medical Social Worker			2	-	3	4	6
Rehabili- tation	Physical Therapist		-	-	1	1	1
	Physical Therapy Aide		-	-	1	1	3
	Occupational Therapist		-	-	-	-	1
	Occupational Therapy Technician		-	-	-	-	1
Total			18	18	34	39	59

TABLE-IV-2-13 PROPOSED STANDARD

SECTION		BED	100 BED T/T	200 BED T/T	300 BED T/T	450 BED T/T
Pharmacy	Pharmacist		1	2	3	4
	Pharmacy Aide		2	5	5	6
Dental Aide			2	2	4	5
Radiation	Medical Radiation Technician		2	3	4	5
	Medical Radiation Aide		2	3	4	5
Laboratory	Laboratory Technician		2	3	5	6
	Laboratory Aide		3	6	8	10
	Physiological Test Technician		1	2	3	4
Other Medical Technician for Surgery dpt.			-	-	1	1
Autopsy Attendant			-	-	-	1
Guidance Psychologist			-	-	1	1
Medical Social Worker			2	2	3	3
Rehabilita- tion	Physical Therapist		-	-	1	2
	Physical Therapy Aide		-	-	2	2
Total			17	28	44	55

According to the standard plan of the Ministry of Health, the number of paramedicals is 18 for 100 beds, 34 for 200 beds, 39 for 300 beds and 59 for 450 beds. The ratio of paramedicals per 100 patient scale is compared below against that of the hospitals affiliated with local autonomous bodies in Japan with the balance kept in the black.

BED	MOH standard plan (A)	Proposed standard plan (B)	Mean value of Regions I and II at present (C)	Government Hospital in Japan with the balance kept in the black (D)	A/D	B/D	C/D
100 BED	15.9	15.0	8.0	4.4	3.61	3.41	1.81
200 BED	15.0	12.3	4.3	4.7	3.19	2.62	0.91
300 BED	11.5	12.9	5.4	4.4	2.61	2.93	1.22
450 BED	11.6	10.8	—	4.9	2.37	2.20	—

The ratios classified by pharmacy, radiation and laboratory are as follows:

(1) Pharmacy Section

	(A)	(B)	(C)	(D)	A/D	B/D	C/D
100 BED	5.3	2.7	2.4	1.8	2.94	1.50	1.33
200 BED	4.4	3.1	1.3	1.8	2.44	1.72	0.72
300 BED	2.9	2.4	1.5	1.5	1.93	1.60	1
450 BED	2.2	2.0	—	1.6	1.38	1.25	—

(2) Radiation Section

	(A)	(B)	(C)	(D)	A/D	B/D	C/D
100 BED	2.7	3.5	0.5	1.1	2.45	3.18	0.45
200 BED	2.2	2.6	0.6	1.0	2.20	2.60	0.60
300 BED	2.4	2.4	0.9	1.0	2.40	2.40	0.90
450 BED	2.0	2.0	—	1.0	2.00	2.00	—

(3) Laboratory Section

	(A)	(B)	(C)	(D)	A/D	B/D	C/D
100 BED	5.3	5.3	1.8	1.5	3.53	3.53	1.20
200 BED	4.4	4.8	0.8	1.9	2.32	2.53	0.42
300 BED	2.9	4.7	1.9	1.9	1.53	2.47	1.00
450 BED	2.9	3.9	—	2.3	1.26	1.70	—

These tables suggest that the numbers are 2-2.5 times greater on the average.

Larger ratios than those described in the standard plan will lie heavier on hospital management in the future. As it is taken into consideration that there is a surplus of paramedicals at present, there are few job opportunities for them and there are many cases in which paramedicals drift to urban areas for jobs in the pharmaceutical and other industries or to have access to other vocations, and also that the present personnel cost is low at present and, more important, the level of these paramedicals is low throughout the nation and its early improvement is desired, it might be said that the number of paramedicals fairly close to these ratios shall be assigned.

In terms of the substance of medical care, the following may be pointed out.

- o In the pharmacy section, there has been an increase in the number of prescriptions in proportion to the patient scale, so that there seems to be a need to assign 2.5 persons per 100 patient scale.
- o The radiation section is, something which shall be replenished in the future. In the case of 100 beds, one radiation technician plus one radiation aide will be assigned for general and cross-sectional radiation, and one radiation technician and one radiation aide for TV X-ray.

In the case of 200 beds, there will be a need to assign one radiation technician plus one radiation aide for general, cross-sectional and mammography, one radiation technician plus one radiation aide for TV X-ray, and one radiation technician plus one radiation aide for the radiography of the circulatory system. In the case

of 300 beds, the number of persons for general, cross-sectional and mammography will be increased to two radiation technicians plus two radiation aides.

In the case of 450 beds, the assignment will be made with an additional training framework of one radiation technician and one radiation aide.

- o The laboratory section particularly requires a full replenishment. There is a need to provide full manpower, including that for the training.

In the laboratory test system, two laboratory technicians will be assigned for general, chemical and bacteriological tests in the case of 100 beds, two laboratory technicians plus two laboratory aides for general and chemical tests and one laboratory technician and one laboratory aide for bacteriological tests in the case of 200 beds. In the case of 300 beds, two laboratory technicians and two laboratory aide will be assigned for general tests, one laboratory technicians and two laboratory aides for chemical tests and one laboratory technician and two laboratory aides for bacteriological tests, and an additional training framework of one laboratory technician and two laboratory aides will be made available. In the case of 450 beds, the training framework will be increased to two laboratory technicians and four laboratory aides.

In the physiological test section, there are many cases in which medical specialists themselves are engaged in ECG, EEG, etc., but it is important to assign technicians.

In the case of 100 beds, one technician will be assigned for ECG, electrocardiophonograph echo-encephalogram and pulmonary function test.

In the case of 200 beds, one technician will be added for EEG and EMG.

In the case of 300 beds, one technician will be assigned for scan and ultrasonoscope.

In the case of 450 beds, one technician will be added for training framework.

- o Dental aides will be assigned at a rate of two per dental chair. In the case of 450 beds, the training framework will be added by one person.

- o An additional surgical technician will be assigned for the orthopedic department in the case of 300 and 450 beds.
- o One autopsy attendant will be assigned in the case of 450 beds.
- o One guidance psychologist will be assigned for the first time when the number of beds reaches 450.
- o In respect to rehabilitation, one technician and one aide will be assigned in the case of 300 beds and one technician and two aides in the case of 450 beds with consideration given only to physical therapy.
- o One social worker will be assigned for family planning and malnutrition for hospitals with 100 to 450 beds. In the case of 300 and 450 beds, however, an additional social worker will be assigned for training.

5) Staffing Pattern of Dietary Service Staff

MOH STANDARD

SECTION BED	Dietician	Food Service Supervisor	Cook	Food Service Worker	Total
100	3	1	2	6	12
100 T/T	3	1	2	6	12
200 T/T	8	1	8	12	29
300 T/T	5	1	5	14	25
450 T/T	5	1	6	15	27

PROPOSED STANDARD

SECTION BED	Dietician	Food Service Supervisor	Cook	Food Service Worker	Total
100 T/T	1	1	2	4	8
200 T/T	1	1	3	8	13
300 T/T	2	1	5	12	20
450 T/T	2	1	8	15	26

According to the standard plan of the Ministry of Health, the number of food service personnel is 12 for 100 beds, 29 for 200 beds, 25 for 300 beds and 27 for 450 beds, suggesting that the gravity of dieticians is generally high. It must be said that this gravity is too high when consideration is given to the present situation and even to the training of dieticians. At least in Regions I and II, a central dietary system is adopted whereby all food service personnel work in one kitchen. At many hospitals, food service personnel share cooking, food serving and dish washing.

There are some hospitals with mal ward where food are cooked and served inside the hospital by the mother of patient, and the quantity of food to be served by the hospital food service may be reduced that much.

Next, the ratio per 100 patient scale is compared below against that of hospitals affiliated with local autonomous entities in Japan with the balance kept in the black.

BED	MOH standard plan (A)	Proposed standard plan (B)	Mean value of Region I and II at present (C)	Government Hospital in Japan with the balance kept in the black (D)	A/D	B/D	C/D
100 BED	10.6	7.1	6.2	4.3	2.47	1.65	1.44
200 BED	12.8	5.7	4.4	4.4	2.91	1.30	1.00
300 BED	7.4	5.9	4.9	3.6	2.06	1.64	1.36
450 BED	5.3	5.1	—	3.2	1.66	1.59	—

This table suggests that the ratio is 2.5 times higher on the average.

6) Staffing Pattern of Service, Maintenance and Transportation Staff

A comparison is made below per 100 patient scale.

BED	MOH standard plan (A)	Proposed standard plan (B)	Mean value of Region I and II at present (C)	Government Hospital in Japan with the balance kept in the black (D)	A/D	B/D	C/D
100 BED	42.5	28.3	17.4	3.6	11.8	7.6	4.83
200 BED	37.9	18.9	13.9	4.4	8.6	4.3	3.16
300 BED	28.2	20.3	11.9	4.7	6.0	4.6	2.53
450 BED	25.3	16.3	—	4.1	6.2	4.2	—

This table suggests that the ratio is 6 to 12 time higher, meaning that there is much difference from Japan. This is scribable to the facts that it is difficult to commission maintenance technology to sub contractors, from out side of hospital, that there is little progress in the mechanization of the service sector, that the hospital site is normally larger than in Japan, requiring greater manpower for the maintenance, and that manpower is readily accessible. Therefore, it would be unrealistic to reduce manpower in hasty manner.

MOH STANDARD

SECTION BED	Laundry Worker	Seamstress	Institution Worker	Dormitory Manager	House-keeper	Security Guard	Janitor	TOTAL
100	6	2	12	0	1	4	3	28
100 T/T	6	3	15	1	1	4	4	34
200 T/T	12	6	24	1	4	8	10	65
300 T/T	9	9	30	1	3	12	15	79
450 T/T	2	6	51	1	0	14	16	90

PROPOSED STANDARD

SECTION BED	Laundry worker	Seam- stress	Insti- tution Worker	Dormitory Manager	House- keeper	Security guard	Janitor	TOTAL
100 T/T	3	1	12	1	-	3	3	23
200 T/T	4	2	20	1	-	3	3	33
300 T/T	6	3	30	1	-	6	6	52
450 T/T	8	3	41	1	-	6	6	65

(1) Service Staff

A large cut in the number of laundry workers will be contemplated in preparation for mechanization in proposed standard. The sorting, carrying and taking in and out of linen goods depends heavily on manpower. Attention has to be paid to this point. At many hospitals with 100-200 beds, seamstresses virtually serve a laundry workers. The number of institutional workers is based on the following yardstick.

BED	WARD	OPD	ANC	ADM	DORMITORY & OTHERS
100 BED	4	2	2	2	2
200 BED	8	3	3	3	3
300 BED	12	4	6	4	4
450 BED	18	5	8	5	5

In the inpatient quarters, two institutional workers will be assigned for each nursing unit. For the central treatment sector, there is a need to pay special attentions because of its speciality. In respect to the cleaning method, it is desirable to have experienced workers, and their full assignment is also desirable.

- o One dormitory manager will be assigned, and this manager will concurrently serve as foreman for the maintenance of all hospital buildings.

- o No housekeepers will be assigned as at present, and it is realistic that other types of workers will supplement the housekeeping work.
- o Three security guards will be assigned in a three-shifts-a-day system at a night time receptionist desk which will be put near the emergency entrance.
- o Janitors will be assigned to a guard house near the entrance to the hospital site in the same manner as security guards.

(2) Maintenance Staff

MOH STANDARD

BED	Plumber	Carpenter	Painter	Electrician	Medical Equipment Maintenance Engineer	Hospital Engineer	Building Maintenance Man	Gardener	Total
100	1	1	0	1	0	1	1	3	8
100 T/T	1	1	1	1	0	1	1	4	10
200 T/T	1	1	1	2	0	5	1	4	15
300 T/T	1	3	0	1	0	2	1	4	12
450 T/T	1	2	0	1	1	6	1	1	13

PROPOSED STANDARD

BED	Plumber	Carpenter	Painter	Electrician	Medical Equipment Maintenance Engineer	Hospital Engineer	Building Maintenance Man	Gardener	Total
100 T/T	-	1	-			3		2	6
200 T/T	-	1	-			4		2	7
300 T/T	1	2	1			5		3	12
450 T/T	1	2	1			6		3	13

The manpower available for maintenance work is exceedingly little at present. Particularly, there seems to be a shortage of machine and electric technicians. Furthermore the lack of medical equipment maintenance engineer gives the severe problem for medical services at present. Considering the insufficient condition of medical equipment maintenance network of whole country, it is advisable that to each hospital sufficient staff shall be assigned. In many cases, electricians are able to do simple repair work on medical equipments and machines, so their availability is of use. In this proposed standard 3 staffs in 100 beds, 4 staffs in 200 beds, 5 staffs in 300 beds and 6 staffs in 450 beds will be adequate as electrician, medical equipment maintenance engineer, hospital engineer and building maintenance man altogether. For hospitals with more than 300 beds, one plumber and one painter may be additionally assigned.

The assignment of gardeners depends on the scale of a given hospital. As neither the garden nor the site increases in proportion to bed capacity, it will be sufficient if two men are available for hospitals with 200 beds and three for those with 300-450 beds.

(3) Transportation staff

MOH Standard

SECTION BED	Driver	Automotive Mechanic	Total
100	3	1	4
100 T/T	3	1	4
200 T/T	4	2	6
300 T/T	4	1	5
450 T/T	8	3	11

Proposed Standard

SECTION BED	Driver	Automotive Mechanic	Total
100 T/T	3	-	3
200 T/T	3	-	3
300 T/T	4	1	5
450 T/T	4	1	5

In respect to drivers, arrangements shall be made that personnel for ambulance may be available for 24 hours a day, and a system is adopted whereby all drivers may live within the compounds. For hospitals with 100-200 beds, it is desirable that each driver can do a certain extent of car maintenance work, and it would be necessary to have one automechanic for hospitals with 300-450 beds.

7) Staff Pattern of Administrative Staff

In the case of the Philippines, an auditing office is put in a hospital in many cases. Due consideration is required in this respect. The breakdown by department is as follows:

TABLE-IV-2-14 MOH STANDARD

SECTION		BED	100	100 T/T	200 T/T	300 T/T	450 T/T
Office of the Chief	Secretary		-	1	1	1	1
	Clerk		-	-	-	1	1
Central Administrative Office	Administrative Officer		1	1	1	1	1
	Assistant Administrative Officer		-	-	-	1	2
	Secretary (Stenographer)		-	-	-	-	1
	Clerk		*1	*2	*3	6	4
	Clerical Aide		-	-	-	1	3
Personnel Section	Personnel Officer		1	1	1	1	1
	Senior Personnel Aide		-	-	-	-	1
	Record Officer		-	-	-	1	1
	Clerk		*1	*2	*3	5	7
Accounting Section	Accountant		1	1	2	2	3
	Bookkeeper		1	1	1	1	2
	Accounting Clerk		1	1	1	3	5
	Accounting Clerical Aide		-	-	-	-	-
Budget and Finance Section	Budget Officer		1	1	2	1	1
	Cashier		2	2	2	2	3
	Cash Clerk		*1	*2	1	1	3
	Clerical Aide		-	-	-	2	2
	Budget Examiner		-	-	-	1	1
	Clerk		*1	*2	*3	3	3
	Budget Aide		-	-	-	-	2
Legal Section	Statistician		-	-	-	-	1
	Legal Officer		-	-	-	1	2
	Secretary		-	-	-	1	1
	Clerk		*1	*2	*3	1	1
Property and Supply Section	Supply Officer		1	1	1	2	2
	Senior Storekeeper		-	-	-	1	1
	Assistant Buyer		-	-	-	1	1
	Supplies Checker		-	-	-	1	1
	Storekeeper		1	1	1	1	2
	Clerk		*1	1	*3	3	4
Medical Record Section	Record Officer		1	1	2	4	4
	Statistician		0	0	1	1	1
	Medical Record Librarian		0	0	1	1	3
	Medical Record Clerk		4	4	6	6	7
Department Office (Clerk)	Training Service & Research		-	-	-	-	6
	OPD		-	-	-	-	1
	Pharmacy		-	-	-	-	1
	Radiation		-	-	-	-	3
	Laboratory		-	-	-	-	2
	OB-GYNE		-	-	-	-	1
	Surgery		1	-	-	-	1
	Neurology		-	-	-	-	1
	Psychiatry		-	-	-	-	1
	Internal Medicine		-	-	-	-	1
	Medical Service Office		-	-	-	-	1
Medical Social Service		1	-	1	2	-	
Total			27	27	38	60	97

NOTE. (*1) 10 persons in all (*2) 10 persons in all (*3) 12 persons in all

8) Consideration of size of quarters

- o If the hospital is situated in a location outside of the city live-in quarters will become an important necessity, and additional consideration will be needed.

Among the project hospitals following hospital site may be regarded as remote location.

CAGAYAN (PH), IFUGAO (PH), MAJ F. MARCOS (PH), NUEVA VISCAYA (PH).

- o The number of staff from each position requiring live-in quarters is assessed on the basis of the following policies.
- o With the administrative staff's male/female ratio considered to be 1:3, and the work hours to be as a general rule 8 hours, it is expected that the provision of accommodations is not particularly necessary as most employees will commute; yet, considering, of remote location, the difficulty in commuting in the case of remote location, it is advisable that additional 10% of the staff shall be accommodated.
- o The nurses and nursing attendants ordinarily work in 3 shifts. All the unmarried are expected to live-in. Moreover, while married personnel are considered as a general rule to commute, considering their work schedule and other circumstances rooms for night-duty-like use shall be provided for 20% of the married personnel in the case of an urban location and 30% in the case of a remote location.

As male nurse attendants are employed in some places and not in others, 5% of the attendants total number shall be added to bachelor quarters for male attendants.

- o Institutional workers, launders, and dietary service staff, are generally women, predominantly middle aged. There are also some younger female employees who are expected to commute from their homes. In the case of remote location approximately 10% of the employees are assumed to live-in. The janitors, security guard, and transportation-related personnel are generally male. Live-in accommodations are provided for the bachelors and all of the ambulance drivers among them.
- o The doctors, as a rule, are all to be provided with live-in quarters or housing. According to the survey the ratio of unmarried/married doctors is on the order of 1:3. While the married doctors are 3 times more numerous and considering that they often live apart from their families in the course of their duty, and that it is strongly expected in near future the legislation of newly

graduated resident physicians to work a year in local hospitals, etc., the ratio of doctors requiring duplex type one-man rooms to that of doctors needing family-use residences is calculated to be on the order of 2:3.

- o A residence for dormitory manager who also serves as a hospital building maintenance foreman should be considered.
- o Depending upon the hospital, there will on occasion be nursing schools and other activities, thus the additional accommodations shall be needed by the individual hospitals.
- o The possibility of expansion in future to comply with changes in the family composition and changes of unmarried/married ratio shall be considered in the construction plan.

TABLE-IV-2-15 PROPOSED STANDARD

SECTION		BED	100 T/T	200 T/T	300 T/T	450 T/T
Office of the Chief	Secretary		-	-	1	1
	Clerk		-	-	1	1
Central Administrative Officer	Administrative Officer		1	1	1	1
	Assistant Administrative Officer		-	-	1	1
	Secretary (Stenographer)		-	-	-	-
	Clerk		3	4	7	9
Personnel Section	Personnel Officer		-	-	1	1
	Record Officer		-	-	-	1
	Clerk		1	1	2	2
Accounting Section	Accountant		1	1	1	1
	Bookkeeper		1	1	1	1
	Accounting Clerk		2	3	4	6
Budget & Finance Section	Budget Officer		1	1	1	1
	Budget Examiner		-	-	-	1
	Clerk		1	1	2	2
	Cashier		1	1	1	1
	Cash Clerk		1	1	2	2
	Statistician		-	-	-	-
Legal Section	Legal Officer		-	-	1	1
	Secretary		-	-	-	-
	Clerk		-	-	1	1
Property & Supply Section	Supply Officer		1	1	1	1
	Supplies Checker		-	-	1	1
	Assistant Buyer		-	-	-	-
	Storekeeper		1	1	2	2
	Clerk		1	2	3	4
Medical Record Section	Record Officer		-	-	1	1
	Statistician		-	-	-	1
	Medical Record Librarian		-	-	-	1
	Medical Record Clerk		2	3	4	6
Department Office (Clerk)	Internal Medicine		-	-	1	1
	Radiation		-	-	2	2
	Medical Social Service		-	-	1	1
Total			18	22	44	55

In Japan, administrative work falls roughly into 2 classifications (general administrative and medical administration), but in the Philippines, as the health insurance system is not yet fully developed and there are a large proportion of charity patients, etc. the relative importance of the medical administrative work is diminished and this classification is not made. Actual medical administration work is maybe performed by the staff of the accounting section and other sections which carry out the tasks of receiving outpatients and admitting and discharging in patients and calculating insurance fees etc..

The classification as per the Philippine manner are as follows:

- Office of the Chief
- Central Administrative Office
- Personnel Section
- Accounting Section
- Budget and Finance Section
- Legal Section
- Property and Supply Section
- Medical Record Section
- Department Office

In the present re-view as well, staff are provided for medical administration work in the Central Administrative Office and the Accounting Section. The calculations call for 2 staff members for the first 100 beds, 3 for 200 beds, 5 for 300 beds, and 7 for 450 beds for the purpose of the reception of out-patients and the admitting and discharging of in-patients. When the hospitals bed capacity exceeds 300, one administration staff member each is to be provided for the internal medicine, X-Ray and laboratory departments; and one to be shared by family planning, malnutrition and under-6. (totaly 4 persons)

A comparison of the staff per 100 patient scale in the Philippines with that in financial solvent public hospitals in Japan:

BED	MOH Standard plan (A)	Proposed standard plan (B)	Mean value of Regions I and II at present (C)	Government Hospital in Japan with the balance kept in the black (D)	A/D	B/D	C/D
100 BED	23.9	15.9	9.9	6.5	3.7	2.4	1.5
200 BED	16.7	9.7	7.6	6.3	2.7	1.5	1.2
300 BED	17.6	12.9	9.1	5.7	3.1	2.1	1.6
450 BED	19.0	10.8	—	5.8	3.3	1.8	—

The Philippine standard figures are 3.5 times that of the solvent Japanese hospitals and 2 times that of the proposed standards.

Manpower Calculations for Each Project Hospital

When the proposed bed capacity in each project hospital is equivalent to the standard bed capacity the standard placement of personnel is adopted as is. At other times, the distribution ratio used is derived from the original patient scale.

4. Medical Equipment

A table of standard medical equipment and supplies is provided herewith where functions of each hospital surveyed this time are indicated as upgraded functions over present conditions.

Most of diseases presently treated in the hospitals surveyed recently are the infectious diseases. However, by means of enrichment of public health and medical services presently being carried out by Department of Health of Republic of the Philippines and upgrading plan expected to be carried out for the public hospitals surveyed this time, the disease structure to be handled at these hospitals will greatly change in near future. Thus, this table shows the medical equipment and supplies which can be suited to the change forecasted for the near future.

The main point of the table is the medical examination and treatment departments where special emphasis was made on the improvement of accuracy of examination department, enrichment of sterilization department, and extra upgrading particularly for surgery, care-after-surgery and premature and new-born baby departments. According to the table, it is very clear that existing conditions found by the survey can be considerable graded up.

Generally speaking, when preparing such upgrading plan for public hospitals, the following basic concept is used in making selection table for the equipment and supplies: Since upgrading is usually performed on continued basis and by step-by-step method, medical equipment and supplies should be added or supplemented to meet the actual conditions of each hospital as various requirements for public medical services (personnel and economic elements) are gradually fulfilled, for the purpose of doubling the effects of the upgrading.

Preliminary floor plan for showing spaces which are effective for properly accepting medical equipment and supplies shown on the table and for providing effective hospital functions has been made.

This plan has an average value of 35 m² per bed which is very close to 40 m² per bed indicated in the standard of hospital space requirements prepared by the Philippines.

An average area of space per bed of 19 hospitals surveyed is about 14 m² which is very low so that good medical services cannot be provided even now by such spaces.

Therefore, we have tried to put priority over the ability of hospital to respond to the change of medical trend and ability to expand easily in response to the change. Particularly, expansion of ward section is easy and functional expansion of central examination department where quick responding to the change of medical quality is highly needed is also easily possible by remodeling or replacement of interior equipment. Thus, this preliminary plan needs area of 35 m² per bed described above basing upon the forecast and probable space expansion in future.

TABLE-IV-2-16 MEDICAL EQUIPMENT STANDARD BY DOH

Hospital Service	Equipment	Quantity Used by Bed Capacity					
		25	50	100	200	300	400 & over
1. ADMINISTRATIVE SERVICE							
1.1 Director's Office							
	Office Table, Executive	1	1	1	1	1	1
	Office Chair, Swivel	1	1	1	1	1	1
	Office Chair, Straight	2	2	2	2	4	4
	Settes, Three Passenger	1	1	1	1	2	2
	Filing Cabinet, 4-Drawers	1	1	2	2	4	4
	Typewriter, Standard	-	-	1	1	2	2
	Typist Table	-	-	1	1	2	2
	Waste Can, Feet Lever with Cover	1	1	2	2	4	4
1.2 Business Office							
	Adding Machine	1	1	2	2	3	3
	Filing Cabinet, 4-Drawer	1	1	2	2	4	4
	Calculating Machine	-	-	1	1	2	2
	Office Table	1	1	2	2	4	4
	Office Chair Swivel or Straight	1	1	2	2	4	4
	Typewriter, Standard	1	1	2	2	4	4
	Typist Table	1	1	2	2	4	4
	Duplicating or Memographing Machine	-	-	1	1	1	1
	Posting and Billing Machine	-	-	1	1	1	1
	Safe	1	1	1	1	1	1
1.3 Information and Admitting Section							
	Settes, Three Passenger	1	1	1	1	1	1
	Ash Tray with Stand	1	1	2	2	4	4
	Telephone for Paging System	-	-	1	1	1	1
	Microphone for Paging System	-	-	1	1	1	1
	Patient Chart and Directory	1	1	1	1	1	1
	Doctor's In and Out Register	1	1	1	1	1	1
	Steel 30 High	1	1	2	2	3	3
	Office Chair Straight	2	2	4	4	6	6
	Office Table	1	1	2	2	3	3
	Filing Cabinet, 4-Drawers	1	2	4	4	6	6
	Typewriter, Standard	1	1	2	2	3	3
	Typist Table	1	1	2	2	3	3
1.4 Conference Room, Staff Lounge & Library							
	Settes, Three Passenger	1	1	2	2	4	4

Hospital Service	Equipment	Quantity Used by Bed Capacity					
		25	50	100	200	300	400 & over
	Bookcase	1	1	2	2	3	3
	Bulletin Board, 26" x 24"	1	1	1	1	2	2
	Doctor's Paging System	-	-	1	1	2	2
	Conference Table	1	1	1	1	2	2
	Conference Chair, Straight	6	6	8	8	16	16
	Table Lamp	1	1	1	1	2	2
	Ash Tray with Stand	1	1	2	2	3	3
<p>Note: If there are existing offices for the Administrative, Chief of Clinics, Chief Dorso, Office of the Medical Social Worker, Business Office and Others, equipment needed will be same as those provided for in the Office of the Director.</p>							
<p>2. <u>MEDICAL SERVICE</u></p>							
<p>2.1 <u>Surgical Suite</u></p>							
<p>2.1.a <u>Operating Room</u></p>							
	Anesthesia Apparatus, Surgical Type	1	1	2	2	2	3
	Electro Surgical Unit with Attachment	-	1	2	2	3	3
	Operating Table, Hydraulic Type Controlling Mechanism with Head and Control	-	1	2	2	3	3
	Arm Rest, Adjustable	-	1	2	2	3	3
	Revolving Steal, One Stool	-	1	2	2	3	3
	Foot Steel, One Step	1	1	2	2	3	3
	Conducting Slippers						
	Surgeon's Gloves						
	Surgical Operating Suit, Waterproof						
	Surgical Operating Own and Cap						
	Restraining Strap						
	Operating Table Pillow						
	Waste Receptable, Foot Lever with Cover	1	1	2	2	3	3
	Kickbucket	1	1	2	2	3	3
	Baumanometer with Stand	1	1	2	2	4	4
	Stethoscope	1	1	2	2	4	4
	Oxygen Apparatus Complete with Attachment	1	1	2	2	4	4

Hospital Service	Equipment	Quantity Used by Bed Capacity					
		25	50	100	200	300	400 & over
	Major Operating Light, Shadowless	1	1	1	1	2	2
	Minor Operating Light, Shadowless	-	-	1	1	2	2
	Spotlight, Gooseneck with Stand	1	1	2	2	3	3
	Instrument Cabinet	1	1	2	2	3	3
	Instrument Table	1	1	2	2	3	3
	Anesthetist Table	1	1	2	2	3	3
	Sterilizing Board Table	1	1	1	1	1	1
	Suction Pressure Unit, Heavy Duty	1	1	1	1	2	2
	Suction Pressure Unit, Portable	-	-	1	1	2	2
	Portable Sprayer, Inhaler	1	1	2	2	4	4
	Drainage Aspirating Apparatus (Resuscitate)	1	1	2	2	3	3
	Irrigator Stand, Double Hock	1	1	2	2	4	4
	Wall Clock with Interval Timer	1	1	2	2	3	3
	Air Conditioner	1	1	2	2	3	3
	Emergency Light Service	1	1	2	2	3	3
	Laundry Hamper	1	1	2	2	3	3
	Operating Instrument Set (See Central Sterilizing and Supply room)	1	1	2	2	4	4
2.1.b	<u>Sub-Sterilizing Room</u>						
	Sink and Drain Board	1	1	1	2	2	2
	Autoclave, Pressure Type, Gas or Electric	1	1	2	2	3	3
	Water Sterilizer	1	1	1	1	2	2
	Instrument Sterilizer	1	1	1	2	2	2
2.1.c	<u>Serub-Up Area</u>						
	Dispenser, Brush, Surgical Type	1	1	2	2	4	4
	Dispenser, Liquid Soap, Double	1	1	2	2	4	4
2.1.d	<u>Recovery Room</u>						
	Bed, Recovery, Adjustable	1	2	4	6	8	8
	Bedside Rails, Safety, Adjustable	1	2	4	6	8	8
	Bedside Cabinet	1	2	4	6	8	8
	Chair, Straight Metal	1	2	4	6	8	8
	Examining Light	1	1	2	2	4	4
	Irrigator Stand, Double Hook	1	1	2	2	4	4
	Sphygmomanometer	1	1	2	2	4	4
	Stethoscope	1	1	2	2	4	4

Hospital Service	Equipment	Quantity Used by Bed Capacity					
		25	50	100	200	300	400 & over
2.1.e	<u>Intensive Care Unit</u> (If any)						
2.2	<u>Obstetrical Suite</u>						
2.2.a	<u>Delivery Room</u>						
	Anesthesia Apparatus, Obstetrical Type	1	1	2	2	3	3
	Resuscitator, Complete with Gas Cylinder	1	1	2	2	3	3
	Suction Pressure Unit with Stand	1	1	2	2	3	3
	Obstetrical Table with Mattress, Hydraulic	1	1	2	2	3	3
	Operating Room Light, Shadowless	1	1	2	2	3	3
	Kickbucket	1	1	2	2	4	4
	Kick Basin	1	1	2	2	3	3
	Laundry Hamper	1	1	2	2	4	4
	Stand, Solution, Basin, Single Steel, Adjustable, Anesthetist	1	1	2	2	4	4
	Anesthesia Table	1	1	1	2	2	2
	Instrument Table	1	1	1	2	2	2
	Infant Scale	1	1	1	2	2	2
	Infant Scale Table with Railings Around	1	1	1	2	2	2
	Obsterical and Cynecological Instrument Set (See Central Sterilizing) and Supply Room)						
2.2.b	<u>Labor Room</u>						
	Bed, Labor with Mattress	1	2	4	6	8	8
	Beside Cabinet	1	2	4	6	8	8
	Chair, Straight, Metal	1	2	4	6	8	8
	Examining Light	1	1	2	2	4	4
	Overbed Table	1	3	4	6	8	8
	Steel, One Step, Bedroom Type	1	1	2	2	4	4
	Waste Can, Foot Lever with Cover	1	1	2	2	4	4
2.3	<u>Nurse</u>						
2.3.a	<u>Nursery</u>						
	Bassinet with Stand or Cabinet Type with Mattrass						

Hospital Service	Equipment	Quantity Used by Bed Capacity					
		25	50	100	200	300	400 & over
	Bedside Cabinet	1	1	2	2	4	4
	Laundry Hamper	1	1	2	2	4	4
	Waste Can, Foot Lever with Cover	1	1	2	2	4	4
2.3.b	<u>Work Pace, Examination & Treatment Room</u>						
	Office Chair, Swivel	1	1	1	1	1	1
	Nurse's Desk Chart with Rack	1	1	1	1	1	1
	Chart Holder						
	Hotplate, Electric	1	1	2	2	4	4
	Waste Can, Foot Lever with Cover	1	1	1	1	4	4
	Refrigerator, 6 cu. ft.	-	-	1	1	1	1
	Instrument Sterilizer	1	1	2	2	4	4
	Hebulizer	-	-	1	1	1	1
2.3.c	<u>Premature Nursery</u>						
	Baby Incubator with Oxygen						
	Limiting Di	1	1	2	2	4	4
	Hotplate, Electric	1	1	2	2	4	4
	Waste Can, Feet Lever with Cover	1	1	2	2	4	4
	Bedside Cabinet	1	1	2	2	4	4
	Laundry Hamper						
2.3.d	<u>Suspect Nursery</u>						
	Bessinet with Mattress						
	Bedside Cabinet						
	Waste Can, Foot Lever with Cover	1	1	2	2	4	4
	Laundry Hamper	1	1	2	2	4	4
	Infant Scale with Stand	1	1	2	2	4	4
2.3.e	<u>Formula and Preparation Room</u>						
	Bottle Washer	1	1	2	2	4	4
	Bottle Carriage	1	1	2	2	4	4
	Waste Can, Foot Lever with Cover	1	1	2	2	4	4
	Bottle Sterilizing	1	1	2	2	4	4
	Hotplate, Electric	1	1	2	2	4	4
	Refrigerator, 6 cu. feet	1	1	2	2	4	4

Hospital Service	Equipment	Quantity Used by Bed Capacity					
		25	50	100	200	300	400 & over
<u>2.4 Emergency Room</u>							
<u>2.4.a Emergency Operating Room</u>							
	Stretcher wheeled	1	1	2	2	4	4
	Wheelchair, reclining	1	1	2	2	4	4
	Anesthesia Apparatus, surgical Type	-	-	1	1	2	2
	Waste Can, Foot Lever with Cover	1	1	2	2	4	4
	Liquid Soup Dispenser, Double	1	1	2	2	4	4
	Surgical Brush Dispenser	1	1	2	2	4	4
	Kickbucket	1	1	2	2	4	4
	Examining Table with Pad	1	1	2	2	4	4
	Portable Operating Light	1	1	1	2	2	2
	Resuscitator	1	1	2	2	3	3
	Instrument Sterilizer	1	1	2	2	3	3
	Anesthetist Stool, Adjustable	1	1	2	2	3	3
	Suction Apparatus	1	1	2	2	3	3
	Oxygen Apparatus Complete with Attachment	1	1	2	2	3	3
	Instrument Table	1	1	2	2	3	3
	Anesthesia Table	1	1	2	2	3	3
<u>2.4.b Observation Room</u>							
	Observation Bed with Mattress	1	1	2	2	4	4
	Overbed Table	1	1	2	2	4	4
	Bedside Rails, Safety, Adjustable	1	1	2	2	4	4
	Bedside Cabinet	1	1	2	2	4	4
	Chair, Straight, Metal	1	1	2	2	4	4
<u>2.5 Out-patient Department</u>							
<u>2.5.a Consultation Office</u>							
	Office Desks	1	1	2	2	4	4
	Office Chair, Swivel	1	1	2	2	4	4
	Filing Cabinet, 4-Drawer	1	1	2	2	4	4
	Examining Light	1	1	2	2	4	4
	Foot Stool	1	1	2	2	4	4
	Wood Bench, Passenger Type	1	1	2	2	2	2
	Magazine Table	1	1	1	2	2	2

Hospital Service	Equipment	Quantity Used by Bed Capacity					
		25	50	100	200	300	400 & over
2.5.b	<u>Examination and Treatment Room</u>						
	Waste Can, Foot Lever with Cover	1	1	2	2	4	4
	Chair, Straight, Metal	1	1	2	2	4	4
	Clinical Scale	1	1	2	2	4	4
	Examining Light	1	1	2	2	4	4
	Instrument Sterilizer	1	1	2	2	4	4
	Stool, Adjustable	1	1	2	2	4	4
	Examining Table, Metal with Pad	1	1	2	2	4	4
	Laundry Hamper	1	1	2	2	4	4
	Hotplate, Electric	1	1	2	2	4	4
	Refrigerator, 6 cu. ft.	1	1	2	2	4	4
	Kickbucket	1	1	2	2	4	4
	Irrigator Stand, Double Book	1	1	2	2	4	4
	Instrument Table						
2.5.c	<u>E.E.N.T. Clinic</u>						
	Supply Cabinet	-	-	1	1	2	2
	Treatment Cabinet with Bottle Rack	-	-	1	1	2	2
	Waste Can, Foot Lever with Cover	-	-	1	1	2	2
	Office Chair, Straight	-	-	1	1	2	2
	Office Desk	-	-	1	1	2	2
	Specialist Chair, BNT	-	-	1	1	2	2
	Instrument Sterilizer	-	-	1	1	2	2
	Stool, Adjustable	-	-	1	1	2	2
	Instrument Table	-	-	1	1	2	2
	B.E.N.T. Instrument Set	-	-	1	1	1	1
2.5.d	<u>Dental Clinic</u>						
	Dental Chair, Hydraulic Adjustable	-	1	1	1	2	2
	Analgamator, Electric, Complete with Timer and Water Dispenser	-	1	1	1	2	2
	Instrument Cabinet	-	1	1	1	3	3
	Filing Cabinet, 4-Drawers	-	1	1	1	2	2
	Receptacles, Towel & Waste with Cover	-	1	1	1	2	2
	Instrument Sterilizer	-	1	1	1	2	2
	Instrument Table	-	1	1	1	2	2
	Office Desk	-	1	1	1	2	2
	Office Chair, Swivel	-	1	1	1	2	2

Hospital Service	Equipment	Quantity Used by Bed Capacity					
		25	50	100	200	300	400 & over
3. ANCILLARY SERVICE							
3.1 Laboratory Room							
	Office Desk	1	1	2	2	4	4
	Office Chair, Swivel	1	1	2	2	4	4
	Office Chair, Straight	1	1	2	2	4	4
	Filing Cabinet, 4-Drawer	1	1	2	2	4	4
	Typist Table	1	1	2	2	4	4
	Typewriter, Standard	1	1	2	2	3	3
	Waste Can, Foot Lever with Over	1	1	2	2	4	4
	Stool, Adjustable	1	1	2	2	4	4
	Stool, Analytical Balance	1	1	2	2	3	3
	Water Bath, Gerological, Inactivating 3-Rack	1	1	2	2	3	3
	Block Bank Refrigerator	-	-	1	1	2	2
	Centrifuge, Blood Typing Clinical	1	1	2	2	2	2
	Centrifuge, Micro-Hematocrit	-	-	1	1	2	2
	Electrophoresis	-	-	1	1	1	1
	Hemoglobinometer	1	1	1	1	1	1
	Hotplate, Electric	1	1	2	2	3	3
	Laboratory Incubator	1	1	2	2	3	3
	Microscope, Monocular	1	1	1	1	2	2
	Microscope, Binocular	-	-	1	1	2	2
	Microtome, Rotary, Complete with Freezing Attachment	-	-	1	1	1	1
	Laboratory Ove, Sterilizing with Blower	-	-	1	1	1	1
	P.H. Meter	-	-	1	1	1	1
	Photometer	1	1	1	2	2	2
	Pipette, Electric, Automatic	1	1	1	2	2	2
	Refrigerator, 8 cu. ft.	1	1	1	2	2	2
	Scale, Dispensing, 110 gms. Capacity	1	1	1	1	1	1
	Scale, Harvard, 200 gms. Capacity	-	-	1	1	1	1
	Shaking Machine, 3-Rack Test Tube	1	1	2	2	3	3
	Spectrophotometer	-	1	1	1	2	2
	Pipette Washer	1	1	1	1	1	1
	Pipette Drier	1	1	1	1	1	1
	Basal Metabolism Apparatus	-	-	1	1	1	1
	Electrocardiograph	1	1	1	2	2	2
	Clinic Scale with Measuring Rod	1	1	1	1	1	1
	Instrument Sterilizer	1	1	1	1	1	1

Hospital Service	Equipment	Quantity Used by Bed Capacity					
		25	50	100	200	300	400 & over
<u>3.2 X-Ray Room</u>							
	Office Desk	1	1	1	2	2	2
	Office Chair, Swivel	1	1	1	2	2	2
	Office Chair Straight	1	1	1	2	2	2
	Filing Cabinet, 4-Drawer	1	1	2	2	4	4
	Waste Can, Foot Lever with Cover	1	1	2	2	4	4
	Radiographic and Fluoroscope Unit:						
	Portable X-Ray	1	1	1	1	1	1
	Diagnostic X-Ray	-	-	1	1	1	1
	Mass Radiography X-Ray						
	X-Ray Control Unit	1	1	2	2	2	2
	Stool, Adjustable, Operator's	1	1	2	2	3	3
	Film Dryers						
	Developing Hangers						
	Illuminator, Wet Film, Fluorescent						
	Safelight						
	Developing Tank						
	Cassette Changer						
	Film Markers						
	X-Ray Protective Accessories						
<u>3.3 Pharmacy</u>							
	Analytical Balance	1	1	1	1	1	1
	Filing Cabinet, Card Size, 1-Drawer	1	1	1	1	1	1
	Filing Cabinet, 4-Drawer	1	1	1	2	2	2
	Waste Can, Foot Lever with Cover	1	1	2	2	3	3
	Office Desk	1	1	2	2	3	3
	Office Chair, Swivel	1	1	2	2	3	3
	Hotplate, Electric	1	1	2	2	3	3
	Refrigerator, 8 cu. ft.	1	1	1	1	2	2
	Safe, Narcotic & Prohibited Drugs	1	1	1	1	1	1
	Typewriter, Standard	1	1	1	2	2	2
	Typist Table	1	1	1	2	2	2
	Mixer, Electric, Portable	1	1	1	2	2	2
	Bottle Cleaner, Pressure Type	1	1	1	1	1	1
	Sterilizer, Pressure Type	-	1	1	1	1	1
	Sterilizing Oven	-	-	1	1	1	1
<u>3.4 Medical Records</u>							
	Office Desk	1	1	2	2	3	3
	Office Chair, Swivel	1	1	1	1	1	1

Hospital Service	Equipment	Quantity Used by Bed Capacity					
		25	50	100	200	300	400 & over
	Office Chair, Straight	1	1	2	2	4	4
	Typist Table	1	1	2	2	4	4
	Typewriter, Standard	1	1	2	2	4	4
	Filing Cabinet, 4-Drawers	1	1	2	2	4	4
	Filing Cabinet, Cardsize, 1-Drawer	-	-	1	1	1	1
	Lader, Stop, Pentry Type	1	1	1	1	1	1
	Waste Can, Foot Lever with Cover	1	1	2	2	4	4
3.5	<u>Morgue and Autopsy</u>						
	Autopsy Table with Sink	1	1	1	1	1	1
	Operating Light	1	1	1	1	1	1
	Refrigerator, Mortuary, 2-Bodies	-	-	1	1	2	2
	Kickbucket	1	1	1	1	1	1
	Autopsy Scale	1	1	1	1	1	1
	Instrument Sterilizer	1	1	1	1	1	1
	Foot Steel	1	1	1	1	1	1
	Wheeled Stretcher	1	1	1	1	1	1
	Instrument Table	1	1	1	1	1	1
	Laundry Hamper	1	1	1	1	1	1
	Dissecting Instrument Set	1	1	1	1	1	1
	Autopsy Instrument Set	1	1	1	1	1	1
	Post Mortam Dissecting Instrument Set	1	1	1	1	1	1
	Waste Can, Foot Lever with Cover	1	1	1	1	1	1
4.	<u>NURSING SERVICES</u>						
4.1	<u>Nurse's Station</u>						
	Office Desk						
	Office Chair						
	Chart Holder, Metal	25	50	100	200	300	400 & up
	Stool, Adjustable						
	Chart Rack						
	Wheeled Stretcher						
	Wheel Chair						
	Call System						
	Waste Can, Foot Lever with Cover						

Hospital Service	Equipment	Quantity Used by Bed Capacity					
		25	50	100	200	300	400 & over
4.1.a	<u>Treatment Room</u> Office Desk Office Chair, Straight Waste Can, Foot Lever with Cover Dressing Carriago Hotplate, Electric, Heavy Duty Kickbucket Examining Light Clinic Scale Irrigator Stand Baumanometer with Stand Foot Steel, One Step Stool, Operator's, Adjustable Examining table, Flat Top with Bad Instrument Table Instrument Steriliser Stethoscope						
4.1.b	<u>Utility and Line Room</u> Waste Can, Foot Lever with Cover Dressing Carriage Laundry Hamper Hotplate, Heavy Duty Ladder, Pentry Type Sterilizer, Utensil Refrigerator, 6 cu. ft.						
Note:	Equipment listed above under the Nurse's station should be found in every Nurse station available. Therefore the quantity needed depends upon the number of Nurse's Station within the hospital.						
4.2	<u>Central Sterilizing and Supply Room</u> Autoclave, Dressing Type, Gas or Electric Supply Carriage Needle Cleaner Drainage Apparatus, Gastro-Intestinal Dryer & Powderer, Glove, Portable Inhalator Irrigator Stand, Double Hook						

Hospital Service	Equipment	Quantity Used by Bed Capacity					
		25	50	100	200	300	400 & over
	Ophthalmoscope-Otoscope Set Sterilising Oven, Laboratory Type Oxygen Apparatus, Complete with Attachment Broast Pump, Electric Sharpener, Needle, Electric Sphygmanometer Stethoscope Suction Apparatus, Portable Basic Operating Instrument Set Surgical Dissecting Set (Laparotomy) Laceration Set Thoradotomy Set Tracheotomy Set Gastro-Intestinal Set Skull-Fracture Set Limb-Amputation Set Obstetric Set Specialist Operating Instrument Set Dental Set Special Orthopedic Set General Orthopedic Set Brain and Nerve Set Genito-Urinary Set Ear, Nose and Throat Set Eye Set Chest Set						
	Note: Quantity for items listed above for the Central Sterilizing and Supply soon depends upon the need of the hospital.						
	4.4 <u>Wards</u> (Pay Ward, Medicare Ward, Charity Ward and Pediatrics Ward, etc.)						
	Patient Bed with Mattress	25	50	100	200	300	400
	Bedside Cabinet	25	50	100	200	300	400
	Overbed Table	25	50	100	200	300	400
	Utility Cabinet	25	50	100	200	300	400
	Chair Straight	25	50	100	200	300	400

Hospital Service	Equipment	Quantity Used by Bed Capacity					
		25	50	100	200	300	400 & over
4.5	<u>Isolation Room</u>						
	Isolation Bed with Mattress, Adjustable, Safety	2	2	4	4	8	8
	Bedside Cabinet	2	2	4	4	8	8
	Chair, Essay Posture, Seat and Back Cushion	2	2	4	4	8	8
	Overbed Table	2	2	4	4	8	8
5.	<u>DISTARY SERVICE</u>						
5.1	<u>Dietician's Office</u>						
	Office Table	1	1	1	2	2	2
	Office Chair, Straight	1	1	1	2	2	2
	Filing Cabinet, 4-Drawers	1	1	1	2	2	2
	Typewriter, Standard	1	1	1	1	1	1
	Typist Table	1	1	1	1	1	1
	Waste Can, Foot Lever with Cover	1	1	1	1	1	1
5.2	<u>Utility and Janitor's Closet</u>						
	Utility Cabinet	1	1	1	2	2	2
	Utility Truck	1	1	1	2	2	2
	Mop Rack	1	1	1	1	1	1
	Ladder, Step, Pantry Type	1	1	1	2	2	2
	Trash Can, Mounted on Caster with Cover	1	1	2	2	3	3
5.3	<u>Kitchen</u>						
	Platform Scale, 500-1000 lbs. cap	-	-	1	1	1	1
	Dietetic Scale, 1 kg cap.	1	1	1	1	1	1
	Stool, Adjustable	1	1	2	2	3	3
	Platform Truck	-	-	1	1	1	1
	Refrigerator, 12 cu. ft.	1	1	1	1	1	1
	Preparation Table, with Drawer and Undershelf	1	1	1	2	2	2
	Cooking Range, Gas or Electric	1	1	2	2	3	3
	Utility Caddy, Mounted on Caster	-	1	1	2	2	2
	Kitchen Tool Rack	1	1	2	2	3	3
	Exhaust Fan and Hood	1	1	1	2	2	2
	Soap Dispenser	1	1	1	2	2	2

Hospital Service	Equipment	Quantity Used by Bed Capacity					
		25	50	100	200	300	400 & over
	Trash Can, Mounted on Caster with Cover	1	1	1	2	2	2
	Tray Truck, Open, 25-Tray Cap	1	2	4	8	12	16
	Food Conveyor, 25-Patient Cap	1	2	4	8	12	16
	Kitchen Utensil Set	1	1	2	2	4	4
5.4	<u>Dining Room</u>						
	Dining Table	1	2	4	6	8	10
	Dining Chair, Straight	8	16	32	48	64	30
	Coffee Maker, 5-gal. cof. & 10 gal. w.	-	-	1	1	1	1
	Milk Dispenser, 2-qtt. cap.	2	2	4	4	8	8
	Drinking Glass Back	1	1	1	2	2	2
	Bread Toaster, Electric	1	1	1	1	1	1
	Tray Truck, Open	1	1	1	1	1	1
	Water Cooler	1	1	1	1	1	1
	Utility Caddy	1	1	1	1	1	1
	Set of Tablewares						
	Set of Silverwares						
	Waste Can, Foot Lever with Cover						
6.	<u>MAINTENANCE SERVICES</u>						
6.1	<u>Engineer's Office</u>						
	Office Table	-	-	1	1	1	1
	Office Chair, Swivel	-	-	1	1	1	1
	Office Chair, Straight	-	-	2	2	2	2
	Filing Cabinet, 4-Drawers	-	-	1	1	1	1
	Typewriter, Standard	-	-	1	1	1	1
	Typist Table	-	-	1	1	1	1
	Waste Can, Foot Lever with Cover	-	-	1	1	2	2
6.2	<u>Maintenance Section</u>						
	Desk Table for Electrician	1	1	1	1	1	1
	Desk Table for Mechanic	-	-	1	1	1	1
	Wall Cabinet, w/Shelving & Doors	1	1	1	2	2	2
	Cupboard for Spare Parts	1	1	1	2	2	2
	Tool Board for Electrician & Mechanic, w/Heavy plastic Top Slide Drawers and Cabinet Below	1	1	1	1	1	1

Hospital Service	Equipment	Quantity Used by Bed Capacity					
		25	50	100	200	300	400 & over
	Wash Basin	1	1	1	2	2	2
	Wall Ventilator	1	1	1	2	2	2
	Water Boiler	1	1	1	2	2	2
	Welding Equipment	-	-	1	1	1	1
	Battery Charger	-	-	1	1	1	1
	Clean Water Tank	-	-	1	1	1	1
	Set of Table for Electrician and Mechanics and for General Use	1	1	1	1	1	1
	Buffer and Grinder	-	-	1	1	1	1
	Drill Press	-	-	1	1	1	1
	Test Board with Large and Bell Transformer	1	1	1	1	1	1
	Vise Machinest, Portable	1	1	2	2	3	3
	Set of Carpentry and Plumbing Tools	1	1	1	1	1	1
	Ladder, Step, Pantry Type	1	1	2	2	2	2
	Bath Faucets	1	1	1	2	2	2
	Fire Extinguishers	3	5	8	12	16	20
	Service Vehicle	-	-	1	1	1	1
	Ambulance	1	1	1	1	1	1
	Power Generating Unit (in kva.)	12.5	25.0	30.0	100	125	150
	Water Tank Capacity (in 1000 gal.)	2-4	6-8	5-15	10-30	35-40	45-50
6.3 Laundry Section							
	Wash Table	1	1	1	2	2	2
	Wall Shelves, for Storage of Buffer Stock and Linens, etc.,	1	1	1	2	2	2
	Cupboard for Storage of Soap and Other Chemicals	1	1	1	1	1	1
	Wash Trelleys	1	1	1	2	2	2
	Flat: Iron with Ironing Board	1	1	1	2	2	2
	Ladder, Stop, Pantry Type	1	1	1	1	1	1
	Truck, Laundry Type	1	1	1	1	1	1
	Laundry Marker with Necessaries	-	-	1	1	1	1
	Waste Buckets	1	1	1	2	2	2
6.4 Housekeeping Section							
	Cabinet, Filing, 4-Drawers	1	1	1	2	2	2
	Office Chair, Straight	1	1	2	2	4	4
	Work Table	1	1	1	2	2	2
	Cars, Said, Cleaning Supplies	1	1	1	2	2	2
	Floor Polisher	1	1	2	2	4	4
	Vacuum Cleaner	-	-	1	1	1	1

Hospital Service	Equipment	Quantity Used by Bed Capacity					
		25	50	100	200	300	400 & over
	Ladder, Step, Pantry Type	1	1	1	1	1	1
	Sewing Machine	1	1	1	2	2	2
	Truck, Linen	1	1	1	2	2	2
	Set of Garden Tools	1	1	1	1	1	1
	Wheel Borrow	1	1	2	2	4	4
	Carden Water Hose						
	Waste Buckets with Cover	1	1	2	2	4	4
	<u>Supplies</u>						
	Blanket, Bassinet, Cotton	75	150	300	600	900	1,500
	Blanket, 72 x 108 inches	75	150	300	600	900	1,500
	Diaper, 27 x 27 inches	100	200	350	700	1,000	2,000
	Gown Isolation						
	Gown, Patients, Age 1yr.						
	Gown, Patients, Age 6 yrs.						
	Gown, Patients, Age 12 yrs.						
	Gown, Patients, Large						
	Gown, Patients, Medium						
	Gown, Patients, Small						
	Gown, Surgical Large						
	Gown, Surgical Medium						
	Linens, Muslims, Basinet						
	Mask, Surgical						
	Pillow	30	60	120	240	350	500
	Pillow Case	15	150	300	600	400	1,500
	Sheet, Beds	150	300	600	1,200	1,800	2,700
	Sheets, Crib	75	150	300	600	900	1,500
	Towel, Bath, Patients,						
	22 x 24 inches	75	150	300	600	900	1,500
	Towel, Hand and Face, 6 x 12 inches	75	150	300	600	900	1,500
	Brush, Bed Pan	6	12	12	18	36	48
	Brush, Bottle Nursing	6	12	12	24	36	36
	Brush, Hand, Surgery	3	6	12	16	20	48
	Basin, Emesis	5	8	20	40	50	60
	Basin, Wash	10	20	40	60	80	100
	Bowl, Solution	2	4	6	10	12	14
	Pan, Bed, Adult	10	20	30	60	100	150
	Urinal, Male	5	10	20	30	40	60

Hospital Service	Equipment	Quantity Used by Bed Capacity																			
		25	50	100	200	300	400 & over														
<p>Note: Items listed with no quantity indicated are also required but the number depends upon the need of the hospital, I is listed with a dash (-) are not necessary.</p> <p>Approximate Amount Needed by Bed Capacity:</p> <table border="1"> <thead> <tr> <th>Bed Capacity</th> <th>Amount</th> </tr> </thead> <tbody> <tr> <td>25</td> <td>430,000</td> </tr> <tr> <td>50</td> <td>525,000</td> </tr> <tr> <td>100</td> <td>2,100,000</td> </tr> <tr> <td>200</td> <td>2,800,000</td> </tr> <tr> <td>300</td> <td>4,900,000</td> </tr> <tr> <td>400</td> <td>5,950,000</td> </tr> </tbody> </table> <p>PREPARED BY: Bureau of Medical Services</p> <p>RECOMENDED : PATRICIO I. RI Officer-in-Charge</p>								Bed Capacity	Amount	25	430,000	50	525,000	100	2,100,000	200	2,800,000	300	4,900,000	400	5,950,000
Bed Capacity	Amount																				
25	430,000																				
50	525,000																				
100	2,100,000																				
200	2,800,000																				
300	4,900,000																				
400	5,950,000																				

IV-3 BASIC PLAN FOR STANDARDIZATION

1. Basic Policies

- 1) In preparing the scheme for standardization, the following basic policies have been established:
 - (1) Realization of higher functions of medical examination and treatment than existing ones is aimed, and enrichment of particularly the ancillary department is being planned. (medical examination & treatment)
 - (2) Conference room will be provided to put emphasis on education of medical staffs. (education)
 - (3) Tropical architecture will be incorporated....natural ventilation, natural lighting and shielding of direct sun light. (climate)
 - (4) Layout easily usable and understandable to patients and medical staffs. (layout and traffic line)
 - (5) Each department is to be assembled as an unit, and construction is to be carried out wing by wing. (method of construction of department)
 - (6) Proper relationship is to be made between departments.
 - (7) Growth and change are to be possible as required in future. (future)
 - (8) Low-rise building is to be planned to provide easier emergency evacuation and construction. (cost and fire prevention)
 - (9) Facilities are to be actually usable and easily maintained. (maintenance)
 - (10) Rooms requiring cleanness for sanitation and sterilization are to be concentrated and utilities are to be combined. (cost system)
- 2) Following items have been established for bed capacities (100, 200 and 300 beds):
 - (1) Departments are layed out for each of 100, 200 and 300 bed capacities, and block plans are prepared for each of these bed capacities (ranks) by changing hospital shapes depending upon the bed capacity (or rank). Therefore, when departments of hospital of each rank are expanded, each department of hospital will be

expanded without changing original rank instead of carrying to next higher rank (example: from 100 beds to 200 beds).

- (2) Standard scheme is prepared in such a manner that hospitals of three ranks will have medical examination and treatment functions corresponding to one of bed capacities. Thus, standard scheme is not prepared for each of provincial hospital, regional hospital and medical center but the scheme will correspond to each of three ranks described above.
- (3) Hospital with number of beds between two adjacent bed capacities (example: La Union) and hospital exceeding 300 bed capacity (example: Pangasinan..... 450 beds) will be handled as hospital with added wards, added partial mechanical room, etc.

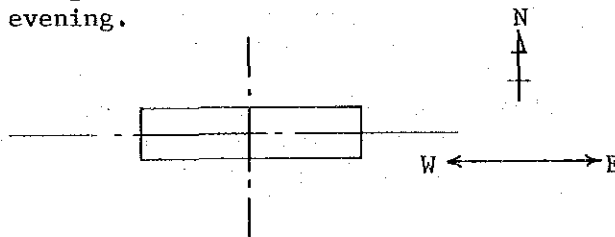
2. Environmental Planning

1) Climatic characteristics

Natural phenomena such as strong sunshine, frequent rainfall and typhoon peculiar to tropical type Asian monsoon weather must be well taken into consideration. That is, consideration for sunshine, complete weather-proofing, and design of element with sufficient strength are all needed.

2) Architectural consideration

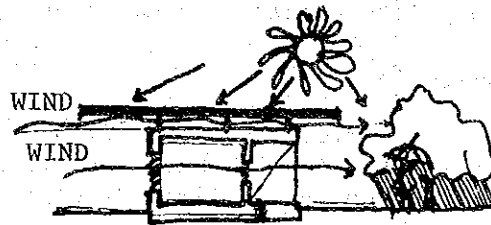
Orientation of building shall be made in such a manner that longitudinal axis will be set in east to west direction for reducing sunshine received to a minimum in the morning and evening.



Corridor shall be located along only one side of building with good natural ventilation through the corridor transversely. In addition, planted courtyard should be provided and surrounded by two corridors facing each other for giving additional coolness psychologically. Courtyard deck should be finished with brick and applied with dry coat for sanitary purpose. For ventilation purpose, louvered sash with the largest size possible shall be properly located in living area.



For strong sunshine during day, direct sunlight shall be received once by material other than building structure for removing heat, just like having parasol for walking lady.



3. Functional Planning

1) Zoning

Apparent separation is made between hospital and group of quarters and between living area, and administration, examination and treatment departments for maintaining independence of each wing.

2) Planning for exterior traffic lines

Traffic lines of people from and to building are separated from traffic lines of commodities and supplies, and general parking area is separated from service yard.

3) Planning for interior traffic lines

Traffic for medical examination and treatment activities is separated from traffic for other services.

4) Evacuation and hazard prevention

5) Vertical traffic and transportation

Machines such as elevator should not be used since it may be difficult to quickly repair the trouble. When multi-story construction is adopted, two story building with ramps is highly desirable. And mechanical transporting means should not be used even for moving case history sheets.

6) Toilet facilities

Since sanitation problems are anticipated depending upon the method of water supply, method of cleaning and uses by patients and attendants, toilets should be concentrated at particular locations restricted for easier management.

7) Module

6 meters should be used as standard module.

8) Building law

It was tried to conform fire escape distance and others to building law but these will be reconfirmed in more detail during preliminary planning stage.

4. Planning for Individual Spaces

1) Medical wards

(1) Concentration of medical wards

In some relevant hospitals, certain medical ward is attached to out-patient department by utilizing existing beds, existing treatment and existing facilities, but medical wards are generally put together for assuring effective nursing by concentration of living areas.

(2) Allocation of medical wards

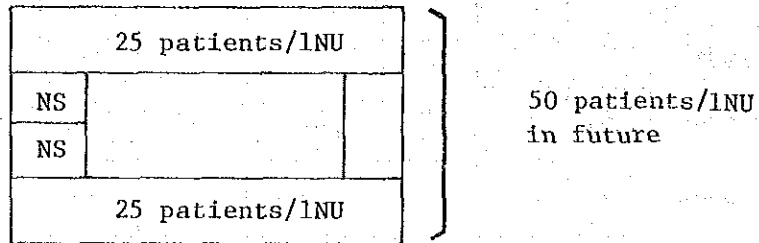
Following allocation is presumed (refer to calculating data.):

Department Beds	Medicine	Surgery	EENT	OB-GYNE	Pediat- rics	Tubercu- losis	Epidemic
100B	33	23	5	14	19	4	2
200B	66	46	10	28	38	8	4
300B	99	69	15	42	57	12	6
(450B)							

(Note: Allocation is to be re-coordinated for each hospital during preliminary design.)

(3) INU (nursing unit)

After analyzing current INU of existing relevant hospitals, 25 beds/INU was established. However, personnel expenses of nurses are expected to rise in near future so that operation with 50 beds/INU will be permitted if required.



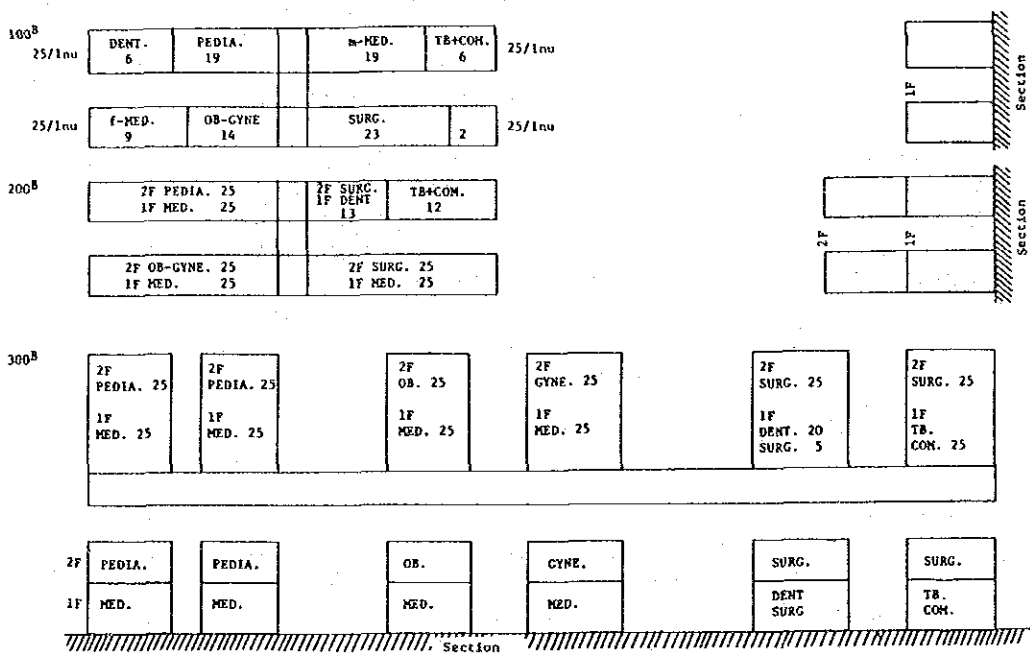
(Note: Since certain hospitals desire 30 to 35 beds/INU, this INU will be re-coordinated during preliminary design.)

(4) Sizes of wards

General ratio: (excluding neonates and ICU)

Dept. Beds	MED.	SURG.	DENT.	OB-GYNE.	PEDIA.	Sub-Total	TB.	COM. Disease	Total
100 beds	35	25	5	15	20	100	5	2	107 persons
Converted in 100%	33	23	5	14	19	—	4	2	100
200 beds	66	46	10	28	38	—	8	4	200 persons
300 beds	99	69	20	42	57	—	12	6	300 persons

Standard plan:



Note: It is hoped that the number of OB and Paediatric cases will decrease with the improvement in regional medical care.

(5) Configuration of wards

Wards are to be divided into private room, semi-private room, 4-bed room and ward for nursing hospitalized patients depending upon their conditions of diseases.

(6) Sizes of wards

Slightly larger room sizes should be maintained for providing sufficient spaces for many attendants and patients who may increase during particular seasons. Size of 6 m x 5.4 m is required for 4-bed room.

(7) Separation of sexes

Medical ward should be arranged for each department, and male and female patients should be separated to each other in different rooms. Therefore, there must be two wards for each department. However, in hospital where bed capacity is large, some department may have nursing unit greater than 2NU. In such a case, it is desirable to separated male and female.

(8) Pay ward

Since difference in number of beds between pay wards and charity wards seems to be reduced in future due to change of system, pay wards should not be considered as exceptional case. Rooms smaller than 4-bed room should be provided for the pay ward.

(9) TB ward

Number of beds is insufficient to form INU for TB ward so that this ward should be provided at an end of ward of other department by separating them with door. TB ward must have independent toilets, food serving corner and others.

(10) Isolation (epidemic) ward

This should be the same as (9) above. In case when an infectious disease is overwhelming, whole ward of unit to which isolation ward belongs should be used as temporary isolation ward. In hospital larger than 200 beds, wards of (9) plus (10) should constitute INU.

(11) Psychopathological ward

This ward should be provided only in mental hospital. This ward should be included in internal medicine ward.

(12) Mal nutrition ward

This should be included in internal medicine ward.

(13) Nursery and premature ward

A close relation with obstetrics ward and delivery room is required. However, nursery and premature ward is located near delivery room this time and better nursing and sanitary facilities will be provided for the ward. New born baby and premature baby should be in the same room and two separate rooms should be provided for normal babies and infected babies. Number of babies in the ward should not be included in standard number of beds but be handled as "plus beds".

(14) ICU

This will be also used as recovery room of surgery department and be located in central examination and treatment department for enriching nursing activities and facilities. Number of patients will not be included in standard number of beds and be handled as "plus beds".

2) Out-patients department

(1) For OB-GYNE and family planning, privacy should be considered and waiting room or separated corners should be provided.

(2) Emergency room

An entrance separated from main entry should be provided and emergency room should be used also as surgical treatment room. In 300-bed medical center, the emergency department must have the scale sufficient to provide medical services as out-patient department serving beyond normal hospital hours.

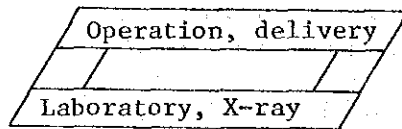
(3) Waiting area

Waiting area should be provided in corridor since number of out-patients is relatively small.

3) Central treatment facilities

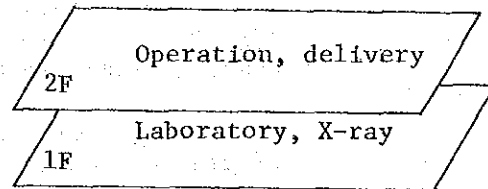
Medical examination and treatment functions are to be centralized, and quality of medical services, equipment and facilities, and education must be leveled up. Central facilities should consist of approximately 3 groups of G₁ [Laboratory, X-ray], G₂ [Operation, delivery] and G₃ [morgue, autopsy], and G₁ and G₂ should be divided in the following manner depending upon medical services offered and degree of cleanness:

100 Beds



200 Beds

300 Beds



Main divisions and targets of the central treatment facilities are indicated below.

(1) Medical laboratory test division

This division include physiological tests, clinical tests, pathological tests, etc. Technicians should be trained in technicians' room or conference room.

(2) X-ray examination

Operating or control corridor should be provided to improve operating performance.

(3) Operation and delivery

Deliveries by Caesarean operation are frequently performed and, thus, delivery room must be located next to operation rooms. These rooms should be treated as clean zone and working corridor should be handled as semi-clean zone. ICU (also as recovery room) and nursery room should be located near delivery room and 24-hour observation and nursing system should be provided for these rooms.

(4) Central supply room

Medical instruments and equipment used in the hospital will be sterilized, stored and supplied in this room. Since this room is mainly related to

surgery and delivery rooms, central supply room must be located near these rooms. Since a considerable time seems to be needed for repairing autoclave, more than two autoclaves should be provided.

(5) Pharmacy

This should be located near out-patient treatment department.

(6) Rehabilitation room

This should be provided in regional hospital and medical center. Exercise and training will be mainly performed in this room.

(7) Radio-isotope, RI treatment room

These rooms should be provided in certain hospitals of medical center class. These rooms should be closely connected with diagnostic X-ray room. These rooms should be considered as part of future upgrading.

(8) Internal viewing instrument

No special room or division will be provided. This should be used in departments such as out-patient.

(9) Morgue and autopsy

Because of its functions and offensive smell, these rooms should be located to other building at an end of hospital lot away from eyes of patients.

4) Administration department

(1) Two types of work will be performed in this area; work directly related to patients and general office work. In hospitals with 200 and 300 beds, this work should be divided into 1st floor and 2nd floor, and general office work area should be located at 2nd floor.

(2) Library and conference room

One room should serve as library and conference room in 100-bed hospital. Conference room should be placed at a location convenient for holding lectures for preventing infection.

(3) Case history room

This room should be provided separately from library in order to assure control of case history sheets and to perform statistical work.

(4) Locker room

Locker rooms should be provided separately for male and female though there is a security problem.

(5) Night-duty room

Guard room is to be provided for off-duty hours. Doctors' residences are to be located within hospital lot, and sleeping corners for nurses should be provided in nurses' working rooms in medical wards.

5) General services

This department should be centrally located in a separate building for preventing medical wards from noise and odor, protecting medical functions and providing high efficiency. It is not required to have all rooms in one building.

(1) Mechanical room

(2) Generator, Electrical power room

(3) Laundry

Refer to planning for mechanical equipment.

(4) Kitchen

Foods shall be distributed to each ward by central dietary system.

(5) Dining room

This room is to be used also as an assembly room.

(6) Main storage

Stored materials must be well monitored.

(7) Work shop