

University of Strathclyde

Department of Management Science

**AN INTEGRATED PERFORMANCE MEASUREMENT
SYSTEM OF HEALTH CARE SERVICES: AN EMPIRICAL
STUDY OF PUBLIC AND PRIVATE HOSPITALS IN MALAYSIA.**

VOL II

ABDUL RAZAK IBRAHIM

A thesis submitted for the Degree of Doctor of Business Administration

2002

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LIST OF PUBLIC & PRIVATE HOSPITALS BY STATE (LESS THAN 25 BEDS)**Number of Beds****JOHOR**

1.	Tey Specialist Maternity & Gynae Centre	19
2.	Chia Maternity & Gynaecology Specialist	18
3.	Rakyat maternity Home	18
4.	Specialist Women Hospital	15
5.	Bougainvillae Nursing Home	15
6.	Bogainvillae Nursing Home (Branch)	15
7.	Pusat Pakar Perbidanan & Sakitpuan Raja	11
8.	Hoo Specialist Maternity & Surgery	10
9.	Qoay Specialist maternity Centre	10
10.	Century Specialist Maternity	10
11.	Ng Specialist Maternity Centre	10
12.	Klinik Tan Pakar Perbidanan	9
13.	Sri Santanville Nursing Home	9
14.	Hospital Pakar Siow	9
15.	Johor Maternity Specialist Centre	8
16.	CS Koh & Maternity Home	8
17.	Poliklinik & Rumah Bersalin Dr Latifah & Rakan-rakan	8
18.	Klinik Pakar Bersalin Chandra	7
19.	Klinik Pakar wanita & Hospital Bersalin Skudai	7
20.	Klinik & Hospital Bersalin Amar	6
21.	Johor Jaya Maternity Center	6
22.	Scudai Surgical Centre	6
23.	Klinik Dan Wisma Bersalin Rabbishfina	5
24.	Goh Maternity Centre	5
25.	Klinik Tawakal & Bersalin 24 Jam	5
26.	Klinik Dan Rumah Bersalin Sentosa	4
27.	Loke Specialist maternity Centre	4
28.	Klinik Pakar Sakit Puan Padma	3
29.	Klinik Setia & Surgery	3
	<i>TOTAL</i>	<u>263</u>

KEDAH

1.	Wisma Pakar Perbidanan & Sakit Puan (SP)	24
2.	Pusat Pakar Ngee	9
3.	Pusat Bersalin Mutiara	8
4.	Selasih Specialist Centre	7
5.	Klinik Dan Wisma Bersalin Dr Aishah Dr Fisol	6
6.	Pusat Bersalin & Klinik SN Lee	5
7.	Pakar Perubatan Langkawi	5
	<i>TOTAL</i>	<u>64</u>

Number of Bed**KELANTAN**

1.	Pusat Rawatan Islam An-Nisa	15
2.	Rumah Bersalin Klinik Pancho	2
	<i>TOTAL</i>	<u>17</u>

KUALA LUMPUR

1.	Ipoh Road Medical Center	22
2.	Chaudhury Medical Center	20
3.	Pudu Specialist Centre	19
4.	Tan Clinic Surgery & Maternity	18
5.	Dato Dr Harnam Ear, Nose & Throat Specialist Clinic	16
6.	Samuel Clinic & Surgery, maternity & Nursing Home	15
7.	Krishnan Clinic	14
8.	Klang Valley Orthopaedic & Trauma Centre	13
9.	Qualitas Medical Centre	13
10.	Pusat Pakar Perbidanan Sakitpuan & Kanak-kanak	13
11.	Cheras Specialist Maternity Centre	12
12.	Procure Nursing Home	11
13.	Kencana Maternity Home Centre	9
14.	Klinik Sarmukh & Pusat Bersalin	9
15.	Pusat Maternity Surgery Pertama	9
16.	Shukri & Singh Specialist Eye Centre	8
17.	Hospital telinga Hidung & Tekak Imran	7
18.	Klinik Telinga, Hidung & Tekak Kandiah	7
19.	Pusat Perubatan Taqwa	7
20.	Joe Medical Centre	6
21.	Joe Medical Centre (Branch)	6
22.	Chong & Partner Maternity	6
23.	Klinik Pakar Wanita Nara	5
24.	Hospital Bersalin & Pusat Pakar Wanita Ang	5
25.	Klinik Kita	4
	<i>TOTAL</i>	<u>274</u>

MELAKA

1.	Asia Maternity Home	13
2.	Damai Klinik & Heart Centre	8
3.	Damai Medical & Heart Clinic	8
4.	Pusat Perubatan Islam Ibnu Sina	7
5.	Klinik Noor Shila	4
	<i>TOTAL</i>	<u>40</u>

Number of Beds**NEGERI SEMBILAN**

1.	Toh Medical Center	10
2.	Klinik Pakar Wanita & Rumah Bersalin	9
3.	Pusat Pakar PD	8
4.	Klinik Pani & Associates	6
5.	Klinik Pakar Wanita Rekha & Rumah Bersalin	5
6.	Klinik Bersalin Amalina	4
	<i>TOTAL</i>	<u>42</u>

PAHANG

1.	WY Ko Specialist Maternity & Gynaecology Centre	9
2.	Sethu Maternity Centre	9
3.	Klinik Wanita Mentakab	9
4.	ST Chong Maternity & Surgery	9
	<i>TOTAL</i>	<u>36</u>

PERAK

1.	Appollo Medical Center	24
2.	Maxwell Maternity & Surgical Centre	13
3.	Pusat Pakar Rajindar	10
4.	Sitiawan Specialist Maternity Centre & Surgery	9
5.	Tan Specialist Womens' Clinic & Maternity	8
6.	Klinik & Wisma Bersalin Bhajan	7
7.	Lee Maternity & Specialist Centre for Women	6
8.	Perak Chinese Public Maternity Home	6
9.	Klinik Bersalin Islam Hasanah	6
10.	Mary Sim Maternity Home	5
	<i>TOTAL</i>	<u>94</u>

PULAU PINANG

1.	Peace Medical Center	24
2.	Penang Specialist Maternity Centre	16
3.	Tan & Tan Specialist Maternity	16
4.	KS Wan Specialist Maternity Centre	13
5.	Pantai Nursing Home	12
6.	Pusat Pakar Public	10
7.	Vong Maternity Centre	10
8.	BM Specialist Women Clinic & Maternity Centre	10
9.	Pusat Pakar Chua	8

	<u>Number of Beds</u>
10. Rumah Bersalin & Poliklinik Aman	8
11. Penawar Klinik & Dewan Bersalin Muslimah	5
<i>TOTAL</i>	<u>132</u>
SABAH	
1. Damai Specialist Centre	16
2. Kota Kinabalu Specialist Centre	15
3. Chin Women & Maternity Centre	14
4. Kim Fung Medical Centre	10
5. Teo Maternity Home & Specialist, Gynaecology, Surgery	8
6. Rajagopal Specialist Clinic	8
7. Verghese & Surgery	2
8. Thomas Klinik Pakar Surgeri	2
<i>TOTAL</i>	<u>75</u>
SARAWAK	
1. Sibu Medical Center	21
2. Rejang Medical Centre	16
3. Ong's Specialist Centre	14
4. Multimedica Specialist & maternity Centre	12
5. St Marians' Maternity Home	8
6. Helen Ngu Women Hospital	5
7. KJ Tan Clinic for Women, Specialist & Maternity Home	4
<i>TOTAL</i>	<u>80</u>
SELANGOR	
1. Klinik Damo & Pusat Bersalin	20
2. Damai Service Hospital (Melawati)	19
3. Kajang Specialist Maternity & Surgery	15
4. Pusat Bersalin & Pakar Wanita Lee	14
5. Pusat Perubatan QHC	12
6. Klinik Genga	10
7. Joe Medical Centre	10
8. Shah Alam Medical Centre	10
9. Klinik Pakar Wanita/Poliklinik Kotaraya	10
10. Poliklinik & Wisma Bersalin Al-Iiaaj	10
11. Pusat Rawatan Islam Az-Zahrah	9
12. Pertiwi Maternity	9

	<u>Number of Beds</u>
13. HMO Pacific Medical Centre	8
14. Lams' Surgery Maternity Home	8
15. Salina Clinic & Maternity Home	8
16. Klinik Bersalin Annur	7
17. Pusat Rawatan Mutiara	6
18. Pusat Rawatan Wanita Sg Ramal	6
19. Damansara Fertility Centre	5
20. Rumah Bersalin Bandar Baru Sungai Buloh	5
21. Kuldeep Maternity Centre Surgery	4
22. Lim Eye Specialist Hospital	4
23. Poliklinik & Surgeri Wanita	4
24. Pusat Pakar Wanita Chia & Tan	3
25. Pusat Bersalin Sulaiman	3
TOTAL	<u>219</u>
 TERENGGANU	
1. Terengganu Specialist Medical Centre	12
2. Pusat Perubatan Intan	5
TOTAL	<u>17</u>
 GRAND TOTAL	 <u>1,366</u>

LIST OF PUBLIC & PRIVATE HOSPITALS BY STATE (NON-RESPONSE SURVEY)

	<u>Number of Beds</u>	
	<u>Public</u>	<u>Private</u>
JOHOR		
1. Hospital Batu Pahat	314	
2. Hospital Segamat	219	
3. Hospital Pakar Johor		205
4. Hospital Kota Tinggi	158	
5. Hospital Pakar Puteri		87
6. Medical Specialist Centre (JB)		75
7. Hospital Tangkak	69	
8. Hospital Penawar		30
9. Century Medical Centre (JB)		26
10. Hospital Kulai	25	
TOTAL	785	423
KEDAH		
1. Hospital Kulim	224	
2. Hospital Langkawi	108	
3. Strand Hospital		75
4. Hospital Jitra	72	
5. Hospital Sik	72	
7. Metro Specialist Hospital		40
TOTAL	476	115
KELANTAN		
1. Hospital Tanah Merah	120	
2. Hospital Tumpat	119	
3. Hospital Pasir Mas	119	
4. Kota Bharu Medical Centre		48
5. Hospital Pasir Puteh	26	
6. Hospital Gua Musang	25	
TOTAL	409	48
KUALA LUMPUR		
1. Pantai Medical Centre		231
2. Sentosa Medical Centre		203
3. Pusat Pakar Tawakal		158
4. Taman Desa Medical Centre		128
5. Pantai Cheras Medical Centre		118
6. Pusat Rawatan Islam		111
7. CMH Medical Centre		90
8. Damai Service Hospital (HQ)		60
9. Kampung Baru Medical Centre		46
10. Damai Service Hospital		39
11. Roopi Medical Centre		38

		<u>Number of Beds</u>	
		<u>Public</u>	<u>Private</u>
12.	Lourdes Medical Centre		35
13.	Sentul Medical Centre		35
14.	Sambhi Clinic & Gynaecology Centre		33
	TOTAL	0	1,325
MELAKA			
1.	The Straits Hospital		54
2.	Hospital Alor Gajah	29	
	TOTAL	29	54
NEGERI SEMBILAN			
1.	Hospital Kuala Pilah	232	
2.	Hospital Port Dickson	94	
3.	Hospital Jelebu	76	
4.	NS Chinese Maternity Hospital	75	
5.	Hospital Columbia Pacific		64
	TOTAL	477	64
PAHANG			
1.	Hospital Mentakab	290	
2.	Hospital Bentong	162	
3.	Hospital Kuala Lipis	147	
4.	Hospital Pekan	110	
5.	Hospital Raub	89	
6.	Hospital Jerantut	77	
7.	Kuantan Specialist Centre		60
8.	Hospital Muadzam Shah	25	
	TOTAL	900	60
PERAK			
1.	Ipoh Specialist Centre		206
2.	Hospital Fatimah		168
3.	Hospital Lumut	166	
4.	Hospital Parit Buntar	150	
5.	Hospital Tanjung Malim	130	
6.	Kinta Medical center		105
7.	Hospital Selama	90	
8.	Perak Chinese Maternity Hospital		84
9.	Hospital Gerik	75	
10.	Hospital Sri Manjung	25	
	TOTAL	636	563

		<u>Number of Beds</u>	
		<u>Public</u>	<u>Private</u>
PULAU PINANG			
1.	Loh Guan Lye Specialist Centre		170
2.	Island Hospital	145	
3.	Hospital Sungai Bakap	130	
4.	Bagan Specialist Centre		120
5.	Medicare Specialist Centre		90
6.	Srigim Medical Centre		45
7.	Mount Miriam Hospital		40
8.	Tanjung Medical Centre		30.
	<i>TOTAL</i>	<i>275</i>	<i>495</i>
SABAH			
1.	Hospital Kudat	180	
2.	Hospital Keningau	150	
3.	Sabah Medical Centre		134
4.	Hospital Kota Belut	128	
5.	Hospital Lahad Datu	112	
6.	Hospital Tenom	92	
7.	Hospital Kota Marudu	66	
8.	Hospital Semporna	61	
	<i>TOTAL</i>	<i>789</i>	<i>134</i>
SARAWAK			
1.	Hospital Sri Aman	145	
2.	Normah Medical Centre		132
3.	Hospital Bintulu	129	
4.	Hospital Saratok	106	
5.	Hospital Kapit	100	
6.	Hospital Kanowit	100	
7.	Hospital Serian	84	
8.	Timberland Medical Centre		72
9.	Hospital Bau	68	
10.	Hospital Mukah	62	
11.	Hospital Marudi	54	
12.	Hospital Lundu	46	
13.	Selesa Medical Centre		45
14.	Hospital Lawas	38	
15.	Hospital Simunjung	25	
	<i>TOTAL.</i>	<i>957</i>	<i>249</i>
SELANGOR			
1.	Pusat Perubatan Subang Jaya		326
2.	Hospital Kajang	250	

		Number of Beds	
		Public	Private
3.	Ampang Putri Specialist Hospital		168
4.	Hospital Kuala Kubu Bahru	150	
5.	Assunta Hospital		144
6.	Pantai Klang Specialist Medical Centre		69
7.	Pusat Perubatan Andalas		37
8.	Pusat Perubatan PMMC		34
9.	Tee Maternity & Gynae Specialist Centre		33
10.	Pusat Perubatan Mawar		31
11.	Geriatric Specialty Hospital		30
12.	Hospital Tengku Amjan Jemaah	25	
	TOTAL	425	872
TERENGGANU			
1.	Hospital Besut	140	
2.	Hospital Kemaman	100	
3.	Hospital Dungun	92	
	TOTAL	332	0
	GRAND TOTAL	6,490	4,402

LIST OF PUBLIC & PRIVATE HOSPITALS BY STATE (RESPONSE SURVEY)

		<u>Case No</u>	<u>Number of Beds</u>		<u>CSF Index</u>
			<u>Public</u>	<u>Private</u>	
JOHOR					
1.	Hospital Sultan Aminah	68	989		8.9
2.	Hospital Muar	72	405		8.9
3.	Hospital Kluang	59	244		9.0
4.	Hospital Pontian	56	120		10.1
5.	Hospital Temenggong Seri Maharaja	58		100	8.9
6.	The Southern Hospital (Batu Pahat)	45		84	13.6
7.	Hospital Mersing	03	55		10.5
	TOTAL		<u>1,813</u>	<u>184</u>	
KEDAH					
1.	Hospital Alor Setar	71	812		8.8
2.	Hospital Sungai Petani	83	392		7.8
3.	Hospital Baling	14	140		12.2
4.	Hospital Kuala Nerang	53	100		8.4
5.	Pusat Pakar Utara	23		100	12.2
6.	Hospital Yan	63	93		9.5
7.	Putra Medical Centre	18		62	12.6
8.	Pusat Pakara Neong Perbidanan	37		25	13.8
9.	Klinik Mata & Pembedahan Sandhu	35		25	21.9
	TOTAL		<u>1,537</u>	<u>212</u>	
KELANTAN					
1.	Hospital Kota Bahru	48	750		14.8
2.	Hospital Kuala Krai	81	120		9.6
3.	Hospital Tengku Anis	65	100		10.3
4.	Hospital Machang	43	66		13.1
	TOTAL		<u>1,036</u>	<u>0</u>	
KUALA LUMPUR					
1.	Hospital Kuala Lumpur	67	2,528		8.8
2.	Hospital Tung Shin	77	282		8.8
3.	Institut Jantung Negara	19		211	14.2
4.	Gleneagles Intan Medical Centre	42		136	10.8
5.	City Medical Centre	25		74	10.4
6.	Cheras Geriatric Centre	47		45	13.2
	TOTAL		<u>2,810</u>	<u>466</u>	
MELAKA					
1.	Hospital Melaka	72	881		8.9
2.	Mahkota Medical Centre	66		356	9.6
3.	Ayer Keroh Medical Specialist Centre	20		141	13.8

		<u>Case No</u>	<u>Number of Beds</u>		<u>CSF</u>
			<u>Public</u>	<u>Private</u>	<u>Index</u>
4.	Hospital Southern	45		94	13.6
5.	Hospital Jasin	06	25		13.9
	TOTAL		906	591	
NEGERI SEMBILAN					
1.	Hospital Seremban	04	800	12.4	12.4
2.	Hospital Tampin	05	134	12.4	12.4
	TOTAL		934	0	
PAHANG					
1.	Hospital Tengku Ampuan Afzan	50	587		13.8
2.	Hospital Jengka	01	50		10.4
3.	Kuantan Medical Center	24		44	14.1
4.	Pusat Rawatan Keluarga MUIP	39		25	13.1
5.	Klinik Pakar Wanita Chan	28		25	12.3
	TOTAL		637	94	
PERAK					
1.	Hospital Ipoh	74	990		9.1
2.	Hospital Taiping	62	608		8.5
3.	Hospital Teluk Intan	08	548		12.5
4.	Hospital Batu Gajah	82	350		9.7
5.	Hospital Kuala Kangsar	07	320		15.1
6.	Hospital Tapah	13	217		13.1
7.	Hospital Kampar	44	100		10.6
8.	Hospital Sungai Siput	61	100		9.7
9.	Hospital Pantai Puteri	21		100	9.8
10.	Hospital Changkat Melintang	02	50		7.8
	TOTAL		3,283	100	
PERLIS					
1.	Hospital Kangar	32	404		13.8
	TOTAL		404	0	
PULAU PINANG					
1.	Hospital Pulau Pinang	69	1,390		8.8
2.	Hospital Bukit Mertajam	57	426		9.8
3.	Hospital Lam Wah Ee	78		345	8.8
4.	Penang Advertiser Hospital	60		212	10.4
5.	Hospital Seberang Jaya	49	162		9.1
6.	Gleneagles Medical Center	42		132	10.8
7.	Hospital Balik Pulau	11	71		11.5
8.	Hospital Pantai Mutiara	36		50	9.3

		<u>Case No</u>	<u>Number of Beds</u>		<u>CSF Index</u>
			<u>Public</u>	<u>Private</u>	
TOTAL			<u>2,049</u>	<u>739</u>	
SABAH					
1.	Hospital Queen Elizabeth	17	589		10.9
2.	Hospital Dutches of Kent	79	323		9.5
3.	Hospital Beaufort	15	275		9.9
4.	Hospital Tawau	80	260		9.3
5.	Hospital Ranau	10	91		11.4
6.	Hospital Beluran	64	52		8.1
7.	Hospital Tambunan	55	49		9.9
8.	St Joseph Maternity Home	33		25	13.0
9.	Puan Medinah Women's Hospital	30		25	10.3
10.	KK Specialist Centre	26		25	14.1
TOTAL			<u>1,639</u>	<u>75</u>	
SARAWAK					
1.	Hospital Umum Sarawak	09	736		11.1
2.	Hospital Sibul	75	545		8.7
3.	Hospital Miri	41	269		10.7
4.	Hospital Sarikei	12	108		10.0
5.	Hospital Limbang	40	100		11.1
6.	Hospital Daro	52	100		8.6
7.	Hospital Betong	16	68		10.9
TOTAL			<u>1,926</u>	<u>0</u>	
SELANGOR					
1.	Hospital Tengku Ampuan Rahimah	70	811		8.8
2.	Selangor Medical Center	51		252	9.5
3.	Hospital Banting	38	151		10.2
4.	Hospital Tanjung Karang	46	114		11.4
5.	Hospital Mata Tun Hussein Onn	22		46	14.5
6.	Rawang Medical Center	84		25	9.5
7.	Pusat Perubatan Kohilal	34		25	12.3
8.	Pusat Pakar Wanita Ong & Thum	29		25	12.5
9.	Kajang Medical Center	27		25	10.8
10.	Klinik Puravi	31		25	0.0
TOTAL			<u>1,076</u>	<u>423</u>	
TERENGGANU					
1.	Hospital Kuala Terengganu	76	761		9.1
2.	Hospital Hulu Terengganu	54	100		12.1
TOTAL			<u>861</u>	<u>0</u>	
GRAND TOTAL			<u>20,911</u>	<u>2,884</u>	

RESPONSE RATE BY NUMBER OF HOSPITALS AND STATE

No.	State	Population	Sample	Percent
1.	Johor	17	7	41.2
2.	Kedah	15	9	60.0
3.	Kelantan	10	4	40.0
4.	Kuala Lumpur	20	6	30.0
5.	Melaka	7	5	71.5
6.	Negeri Sembilan	7	2	28.6
7.	Pahang	13	5	38.5
8.	Perak	20	10	50.0
9.	Perlis	1	1	100.0
10.	Pulau Pinang	16	8	50.0
11.	Sabah	18	10	55.6
12.	Sarawak	22	7	31.8
13.	Selangor	22	10	45.5
14.	Terengganu	5	2	40.0
TOTAL		193	86	44.6

RESPONSE RATE BY BED SIZE AND STATE

No.	State	Population	Sample	Percent
1.	Johor	3,230	1,997	61.8
2.	Kedah	2,344	1,749	74.6
3.	Kelantan	1,497	1,036	69.4
4.	Kuala Lumpur	4,601	3,276	71.2
5.	Melaka	1,580	1,497	94.5
6.	Negeri Sembilan	1,475	934	63.3
7.	Pahang	1,691	731	43.2
8.	Perak	4,607	3,383	73.4
9.	Perlis	404	404	100.0
10.	Pulau Pinang	3,558	2,788	78.4
11.	Sabah	2,632	1,714	65.2
12.	Sarawak	3,142	1,926	61.3
13.	Selangor	2,821	1,499	53.1
14.	Terengganu	1,193	861	72.2
TOTAL		34,775	23,795	68.4

SPECIAL MEDICAL INSTITUTION

<i>HOSPITALS</i>	<i>STATE</i>	<i>BED SIZE</i>
1. Hospital Bahagia	Perak	3,000
2. Hospital Permai	Johor	2,080
3. Pusat Kawalan Kusta Negara	Selangor	836
4. Pusat Tibi Negara	Selangor	116
5. Sarawak Mental Hospital	Sarawak	338
6. RCBM Hospital	Sarawak	40
7. Hospital Sakit Jiwa	Sabah	302

LIST OF PUBLIC & PRIVATE HOSPITALS THAT CANNOT BE CONTACTED

	<i>Hospital Name</i>	<i>State</i>	<i>Mode</i>
1.	Hospital Tangkak	Johor	Fax cannot get through
2.	Hospital Muar	Johor	Fax cannot get through
3.	Rama Klinik	Kedah	Status change (no inpatients facilities)
4.	Hospital Gua Musang	Kelantan	Fax cannot get through
5.	Hospital Gerik	Kelantan	Fax cannot get through
6.	Hospital Muadzam Shah	Pahang	Fax cannot get through
7.	Hospital Raub	Pahang	Fax cannot get through
8.	Srigim Medical Centre	Pulau Pinang	Returned envelop
9.	Hospital Tenom	Sabah	Returned envelop
10.	Hospital Semporna	Sabah	Returned envelop
11.	Medicare Specialist Centre	Sarawak	Returned envelop
12.	Hospital Marudi	Sarawak	Returned envelop
13.	Hospital Simunjung	Sarawak	Returned envelop
14.	Klinik Anis	Selangor	Status change (no inpatient facilities)
15.	Hospital Pakar Damansara	Selangor	Returned envelop
16.	Rawang Medical Centre	Selangor	Returned envelop

CSF INDEX FOR MALAYSIAN PRIVATE HOSPITALS

Qts	Weight	Hosp 18		Hosp 19		Hosp 20		Hosp 21		Hosp 22		Hosp 23		Hosp 24	
		CSF	Total	CSF	Total	CSF	Total	CSF	Total	CSF	Total	CSF	Total	CSF	Total
1	5	5	25	5	25	4	20	4	20	5	25	4	20	4	25
2	5	4	20	5	25	5	25	4	20	5	25	3	15	4	20
3	5	4	20	5	25	4	20	5	25	5	25	4	20	4	20
4	5	5	25	4	20	5	25	3	15	5	25	4	20	3	15
5	5	5	25	5	25	5	25	3	15	5	25	4	20	3	15
6	5	4	20	5	25	4	20	3	15	5	25	4	20	3	15
7	4	5	20	4	16	5	20	3	12	5	20	5	20	3	12
8	4	5	20	5	20	5	20	3	12	5	20	5	20	3	12
9	4	5	20	5	20	5	20	5	20	5	20	5	20	3	12
10	4	4	16	5	20	5	20	3	12	5	20	5	20	3	12
11	4	2	8	5	20	3	12	3	12	5	20	5	20	3	12
12	4	1	4	4	16	5	20	2	8	4	16	2	8	2	8
13	2	2	4	1	2	1	2	1	2	1	2	1	2	2	8
14	2	4	8	5	10	2	4	3	6	5	10	5	10	3	6
15	2	5	10	4	8	5	10	2	4	4	8	4	8	2	4
16	2	3	6	5	10	4	8	3	6	4	8	2	4	2	4
17	2	5	10	4	8	5	10	3	6	5	10	5	10	4	8
18	1	5	5	4	4	5	5	3	3	1	1	5	5	4	4
19	1	4	4	1	1	5	5	2	2	1	1	1	1	4	4
20	1	3	3	5	5	5	5	2	2	1	1	4	4	5	5
21	1	3	3	1	1	2	2	2	2	5	5	1	1	3	3
22	1	1	1	1	1	4	4	3	3	5	5	1	1	3	3
23	3	4	12	5	15	4	12	3	9	5	15	4	12	4	12
24	3	4	12	5	15	4	12	2	6	5	15	3	9	2	6
25	3	5	15	5	15	5	15	3	9	5	15	5	15	4	12
26	3	5	15	5	15	5	15	3	9	5	15	3	9	2	12
27	3	5	15	5	15	5	15	3	9	5	15	4	12	2	6
28	3	2	6	5	15	5	15	3	9	5	15	5	15	2	6
Grand Total		352		397		386		273		407		341		266	
Index		12.57		14.18		13.79		9.75		14.54		12.18		9.5	

CSF CALCULATION

$$\text{CSF index} = \frac{(w1*csf1) + (w2*csf2) + (w3*csf3) + \dots + (w28*csf28)}{\text{Number of questions attempted}}$$

Number of questions attempted

w1 – weighting to question 1

w2 – weighting to question 2

w3 – weighting to question 3

csf1 – critical success factors questions 1 answered by respondents

csf2 – critical success factors questions 2 answered by respondents

csf3 – critical success factors questions 3 answered by respondents

Qts	Weight	Hosp 25		Hosp 26		Hosp 27		Hosp 28		Hosp 29		Hosp 30		Hosp 31	
		CSF	Total	CSF	Total	CSF	Total	CSF	Total	CSF	Total	CSF	Total	CSF	Total
1	5	4	20	5	25	3	15	4	20	5	25	4	20	0	0
2	5	4	20	5	25	3	15	4	20	5	25	5	25	0	0
3	5	4	20	5	25	4	20	4	20	5	25	4	20	0	0
4	5	3	15	5	25	4	20	4	20	5	25	5	25	0	0
5	5	3	15	5	25	3	15	5	25	5	25	4	20	0	0
6	5	3	15	2	10	3	15	4	20	5	25	3	15	0	0
7	4	2	8	5	20	4	16	4	16	5	20	5	20	0	0
8	4	4	16	5	20	4	16	5	20	5	20	1	4	0	0
9	4	5	20	5	20	5	20	5	20	5	20	5	20	0	0
10	4	4	16	5	20	4	16	5	20	5	20	5	20	0	0
11	4	4	16	5	20	3	12	4	16	4	16	1	4	0	0
12	4	2	8	5	20	3	12	4	16	1	4	1	4	0	0
13	2	2	4	1	2	3	6	2	4	1	2	1	2	0	0
14	2	4	8	5	10	3	6	4	8	5	10	1	2	0	0
15	2	3	6	5	10	2	4	3	6	3	6	3	6	0	0
16	2	1	2	1	2	2	4	3	6	1	2	1	2	0	0
17	2	0	0	5	10	3	6	4	8	5	10	4	8	0	0
18	1	1	1	1	1	1	1	4	4	3	3	1	1	0	0
19	1	2	2	1	1	3	3	4	4	3	3	1	1	0	0
20	1	3	3	5	5	5	5	3	3	3	3	2	2	0	0
21	1	2	2	5	5	2	2	3	3	1	1	1	1	0	0
22	1	2	2	4	4	3	3	4	4	3	3	1	1	0	0
23	3	4	12	5	15	4	12	3	9	3	9	5	15	0	0
24	3	3	9	5	15	3	9	3	9	2	6	2	6	0	0
25	3	3	9	5	15	4	12	4	12	3	9	4	12	0	0
26	3	4	12	5	15	5	15	3	9	3	9	3	9	0	0
27	3	4	12	5	15	4	12	4	12	3	9	3	9	0	0
28	3	3	9	5	15	3	9	3	9	5	15	5	15	0	0
Grand Total			282	395		301		343		350		289		0	
Index			10.44	14.11		10.75		12.25		12.50		10.32		0.00	

Qts	Weight	<i>Hosp 51</i>		<i>Hosp 33</i>		<i>Hosp 34</i>		<i>Hosp 35</i>		<i>Hosp 36</i>		<i>Hosp 37</i>		<i>Hosp 39</i>	
		CSF	Total												
1	5	3	15	3	15	4	20	4	20	5	25	4	20	4	20
2	5	5	25	3	15	4	20	4	20	3	15	4	20	4	20
3	5	4	20	5	25	4	20	4	20	4	20	4	20	4	20
4	5	2	10	4	20	4	20	4	20	4	20	4	20	3	15
5	5	4	20	2	10	4	20	4	20	1	5	5	25	5	25
6	5	4	20	5	25	4	20	2	10	4	20	4	20	5	25
7	4	4	16	0	0	4	16	2	8	3	12	5	20	5	20
8	4	3	12	0	0	5	20	4	16	3	12	5	20	5	20
9	4	5	20	0	0	5	20	5	20	0	0	5	20	5	20
10	4	4	16	5	20	5	20	5	20	1	4	5	20	5	20
11	4	4	16	5	20	4	16	2	8	3	12	5	20	3	12
12	4	2	8	1	4	1	4	2	8	3	12	4	16	2	8
13	2	2	4	1	2	1	2	1	2	4	8	2	4	1	2
14	2	4	8	5	10	4	8	3	6	3	6	5	10	3	6
15	2	3	6	1	2	3	6	2	4	3	6	5	10	5	10
16	2	4	8	0	0	4	8	2	4	4	8	1	2	5	10
17	2	4	8	0	0	4	8	0	0	4	8	5	10	5	10
18	1	2	2	0	0	4	4	3	3	3	3	5	5	5	5
19	1	3	3	0	0	3	3	3	3	3	3	5	5	4	4
20	1	2	2	0	0	3	3	4	4	2	2	4	4	4	4
21	1	3	3	0	0	3	3	3	3	1	1	5	5	4	4
22	1	2	2	0	0	3	3	3	3	3	3	5	5	3	3
23	3	3	9	4	12	4	12	3	9	4	12	5	15	4	12
24	3	4	12	3	9	4	12	2	6	3	9	3	9	4	12
25	3	5	15	3	9	5	15	3	9	2	6	5	15	5	15
26	3	4	12	4	12	5	15	3	9	1	3	5	15	5	15
27	3	4	12	3	9	5	15	3	9	1	3	5	15	5	15
28	3	4	12	5	15	4	12	2	6	4	12	5	15	5	15
Grand Total		316		234		345		270		250		385		367	
Index		11.29		13.00		12.32		10.00		9.26		13.75		13.11	

Qts	Weight	<i>Hosp 42</i>		<i>Hosp 45</i>		<i>Hosp 47</i>		<i>Hosp 58</i>		<i>Hosp 60</i>		<i>Hosp 66</i>		<i>Hosp 77</i>	
		CSF	Total												
1	5	4	20	5	25	5	25	4	20	5	25	5	25	2	10
2	5	4	20	5	25	4	20	4	20	5	25	5	25	1	5
3	5	4	20	5	25	5	25	3	15	5	25	4	20	2	10
4	5	3	15	2	10	5	25	3	15	4	20	4	20	1	5
5	5	4	20	0	0	5	25	2	10	2	10	2	10	5	25
6	5	3	15	5	25	0	0	5	25	4	20	5	25	1	5
7	4	4	16	5	20	0	0	5	20	5	20	5	20	3	12
8	4	4	16	5	20	0	0	1	4	5	20	1	4	3	12
9	4	4	16	5	20	4	16	2	8	1	4	1	4	5	20
10	4	4	16	5	20	5	20	1	4	1	4	1	4	2	8
11	4	3	12	5	20	1	4	3	12	2	8	3	12	2	8
12	4	3	12	5	20	0	0	2	8	3	12	1	4	5	20
13	2	2	4	2	4	5	10	1	2	3	6	1	2	4	8
14	2	3	6	4	8	1	2	4	8	4	8	3	6	3	6
15	2	4	8	2	4	1	2	1	2	4	8	5	10	5	10
16	2	4	8	5	10	1	2	3	6	4	8	5	10	2	4
17	2	3	6	5	10	5	10	1	2	2	4	2	4	4	8
18	1	3	3	2	2	0	0	3	3	2	2	3	3	3	3
19	1	2	2	2	2	0	0	0	0	2	2	3	3	5	5
20	1	4	4	4	4	0	0	4	4	3	3	3	3	2	2
21	1	3	3	4	4	1	1	3	3	3	3	3	3	5	5
22	1	3	3	4	4	1	1	2	2	3	3	3	3	4	4
23	3	3	9	5	15	5	15	4	12	3	9	3	9	4	12
24	3	3	9	5	15	5	15	4	12	4	12	3	9	5	15
25	3	4	12	4	12	5	15	1	3	2	6	1	3	2	6
26	3	3	9	4	12	5	15	1	3	2	6	1	3	1	3
27	3	3	9	5	15	5	15	1	3	2	6	3	9	1	3
28	3	3	9	5	15	5	15	5	15	4	12	5	15	4	12
Grand Total		302		366		278		241		291		268		246	
Index		10.79		13.56		13.24		8.93		10.39		9.57		8.79	

Qts	Weight	<i>Hosp 78</i>		<i>Hosp 84</i>	
		CSF	Total	CSF	Total
1	5	2	10	2	10
2	5	1	5	1	5
3	5	2	10	2	10
4	5	1	5	1	5
5	5	5	25	5	25
6	5	1	5	1	5
7	4	3	12	3	12
8	4	3	12	3	12
9	4	5	20	5	20
10	4	2	8	2	8
11	4	2	8	2	8
12	4	5	20	5	20
13	2	4	8	4	8
14	2	3	6	3	6
15	2	5	10	5	10
16	2	2	4	2	4
17	2	4	8	4	8
18	1	3	3	3	3
19	1	5	5	5	5
20	1	2	2	2	2
21	1	5	5	5	5
22	1	4	4	4	4
23	3	4	12	5	15
24	3	5	15	2	6
25	3	2	6	1	3
26	3	1	3	1	3
27	3	1	3	3	9
28	3	4	12	4	12
Grand Total		246		243	
Index		8.79		8.68	

CSF INDEX FOR MALAYSIAN PUBLIC HOSPITALS

Qts	Weight	<i>Hosp 1</i>		<i>Hosp 2</i>		<i>Hosp 3</i>		<i>Hosp 4</i>		<i>Hosp 5</i>		<i>Hosp 6</i>		<i>Hosp 7</i>		<i>Hosp 8</i>	
		CSF	Total														
1	5	3	15	3	15	4	20	4	20	4	20	5	25	5	25	5	25
2	5	3	15	2	10	4	20	4	20	4	20	5	25	4	20	5	25
3	5	3	15	2	10	4	20	4	20	4	20	5	25	5	25	5	25
4	5	5	25	3	15	2	10	3	15	5	25	5	25	3	15	4	20
5	5	4	20	1	5	4	20	3	15	5	25	2	10	5	25	5	25
6	5	3	15	4	20	4	20	5	25	4	20	5	25	5	25	5	25
7	4	2	8	3	12	4	16	1	4	5	20	5	20	5	20	5	20
8	4	4	16	3	12	4	16	5	20	5	20	5	20	5	20	5	20
9	4	5	20	3	12	3	12	5	20	5	20	5	20	5	20	5	20
10	4	4	16	4	16	4	16	5	20	4	16	5	20	4	16	5	20
11	4	3	12	3	12	4	16	5	20	3	12	5	20	0	0	1	4
12	4	2	8	1	4	0	0	2	8	0	0	1	4	0	0	3	12
13	2	3	6	1	2	2	4	5	10	4	8	1	2	1	2	5	10
14	2	3	6	2	4	4	8	5	10	4	8	5	10	5	10	1	2
15	2	4	8	2	4	4	8	5	10	3	6	5	10	5	10	1	2
16	2	3	6	3	6	4	8	4	8	2	4	5	10	3	6	3	6
17	2	3	6	3	6	2	4	4	8	2	4	5	10	5	10	5	10
18	1	2	2	5	5	2	2	2	2	4	4	5	5	3	3	1	1
19	1	1	1	5	5	2	2	2	2	2	2	1	1	0	0	1	1
20	1	1	1	1	1	2	2	2	2	1	1	5	5	0	0	1	1
21	1	2	2	4	4	2	2	4	4	3	3	1	1	0	0	1	1
22	1	2	2	1	1	4	4	4	4	5	5	5	5	0	0	1	1
23	3	4	12	2	6	4	12	5	15	4	12	5	15	0	0	2	6
24	3	3	9	1	3	4	12	4	12	3	9	5	15	2	6	3	9
25	3	4	12	3	9	2	6	5	15	3	9	5	15	5	15	5	15
26	3	4	12	1	3	2	6	4	12	5	15	5	15	5	15	5	15
27	3	4	12	1	3	2	6	4	12	5	15	5	15	5	15	5	15
28	3	3	9	4	12	4	12	5	15	4	12	5	15	5	15	5	15
Grand Total		291		217		284		348		335		388		318		351	
Index		10.39		7.75		10.52		12.43		12.41		13.86		15.14		12.54	

Qts	Weight	<i>Hosp 9</i>		<i>Hosp 10</i>		<i>Hosp 11</i>		<i>Hosp 12</i>		<i>Hosp 13</i>		<i>Hosp 14</i>		<i>Hosp 15</i>		<i>Hosp 16</i>	
		CSF	Total	CSF	Total	CSF	Total	CSF	Total	CSF	Total	CSF	Total	CSF	Total	CSF	Total
1	5	4	20	4	20	4	20	3	15	5	25	5	25	3	15	4	20
2	5	4	20	4	20	4	20	3	15	4	20	5	25	3	15	4	20
3	5	4	20	5	25	3	15	3	15	4	20	5	25	3	15	4	20
4	5	3	15	3	15	3	15	4	20	5	25	5	25	3	15	3	15
5	5	3	15	4	20	4	20	3	15	5	25	1	5	4	20	5	25
6	5	2	10	5	25	4	20	3	15	5	25	5	25	4	20	4	20
7	4	4	16	5	20	4	16	4	16	5	20	5	20	4	16	5	20
8	4	4	16	5	20	4	16	4	16	5	20	5	20	4	16	5	20
9	4	3	12	5	20	2	8	4	16	5	20	5	20	4	16	5	20
10	4	4	16	3	12	4	16	3	12	5	20	5	20	3	12	4	16
11	4	3	12	4	16	3	12	4	16	5	20	5	20	3	12	3	12
12	4	4	16	2	8	3	12	1	4	1	4	1	4	2	8	2	8
13	2	2	4	1	2	3	6	1	2	4	8	1	2	2	4	1	2
14	2	3	6	4	8	5	10	2	4	2	4	3	6	3	6	4	8
15	2	5	10	5	10	5	10	3	6	5	10	4	8	4	8	5	10
16	2	4	8	3	6	3	6	3	6	5	10	2	4	2	4	3	6
17	2	4	8	3	6	5	10	4	8	5	10	4	8	4	8	4	8
18	1	2	2	1	1	2	2	3	3	1	1	4	4	2	2	1	1
19	1	2	2	1	1	2	2	2	2	1	1	5	5	2	2	1	1
20	1	2	2	3	3	3	3	1	1	1	1	1	1	2	2	1	1
21	1	3	3	1	1	2	2	4	4	3	3	1	1	3	3	1	1
22	1	4	4	1	1	4	4	4	4	1	1	2	2	3	3	1	1
23	3	4	12	4	12	3	9	3	9	3	9	3	9	3	9	4	12
24	3	5	15	5	15	3	9	3	9	2	6	3	9	2	6	1	3
25	3	4	12	4	12	5	15	4	12	5	15	4	12	2	6	5	15
26	3	3	9	2	6	5	15	5	15	5	15	4	12	3	9	2	6
27	3	4	12	2	6	5	15	4	12	5	15	4	12	4	12	2	6
28	3	5	15	3	9	5	15	3	9	5	15	4	12	4	12	3	9
Grand Total		312		320		323		281		368		341		276		306	
Index		11.14		11.43		11.54		10.04		13.14		12.18		9.86		10.93	

Qts	Weight	<i>Hosp 17</i>		<i>Hosp 38</i>		<i>Hosp 40</i>		<i>Hosp 41</i>		<i>Hosp 43</i>		<i>Hosp 44</i>		<i>Hosp 46</i>		<i>Hosp 49</i>	
		CSF	Total														
1	5	4	20	4	20	3	15	5	25	4	20	4	20	4	20	2	10
2	5	4	20	4	20	4	20	5	25	4	20	4	20	4	20	1	5
3	5	4	20	4	20	4	20	5	25	4	20	4	20	4	20	3	15
4	5	3	15	4	20	4	20	0	0	4	20	4	20	4	20	2	15
5	5	2	10	2	10	3	15	3	15	4	20	5	25	4	20	5	25
6	5	3	15	3	15	2	10	3	15	3	15	4	20	4	20	1	5
7	4	4	16	4	16	5	20	3	12	0	0	0	0	4	16	3	12
8	4	5	20	3	12	5	20	1	4	0	0	0	0	4	16	3	12
9	4	4	16	2	8	5	20	2	8	5	20	5	20	4	16	3	12
10	4	4	16	2	8	5	20	0	0	4	16	5	20	4	16	5	20
11	4	1	4	4	16	2	8	3	12	0	0	1	4	4	16	3	12
12	4	4	16	4	16	4	16	5	20	0	0	0	0	2	8	1	4
13	2	2	4	4	8	2	4	3	6	3	6	1	2	2	4	4	8
14	2	1	2	4	8	2	4	3	6	0	0	1	2	2	4	4	8
15	2	5	10	4	8	4	8	0	0	0	0	4	8	4	8	5	10
16	2	4	8	4	8	3	6	4	8	4	8	4	8	4	8	5	10
17	2	3	6	2	4	4	8	1	2	5	10	5	10	4	8	5	10
18	1	1	1	4	4	1	1	1	1	0	0	1	1	2	2	4	4
19	1	1	1	3	3	1	1	1	1	0	0	1	1	4	4	4	4
20	1	5	5	4	4	1	1	1	1	2	2	1	1	2	2	3	3
21	1	1	1	3	3	1	1	1	1	3	3	1	1	2	2	5	5
22	1	4	4	3	3	4	4	5	5	3	3	4	4	4	4	5	5
23	3	4	12	3	9	4	12	3	9	4	12	4	12	4	12	3	9
24	3	5	15	4	12	3	9	4	12	3	9	2	6	2	6	3	9
25	3	5	15	2	6	5	15	5	15	5	15	4	12	4	12	3	9
26	3	3	9	2	6	5	15	5	15	5	15	2	6	4	12	3	9
27	3	4	12	2	6	5	15	3	9	5	15	2	6	4	12	2	6
28	3	4	12	4	12	1	3	5	15	4	12	5	15	4	12	2	6
Grand Total		305		285		311		267		261		264		320		253	
Index		10.89		10.18		11.11		10.68		13.05		10.56		11.43		9.10	

Qts	Weight	<i>Hosp 50</i>		<i>Hosp 48</i>		<i>Hosp 51</i>		<i>Hosp 52</i>		<i>Hosp 53</i>		<i>Hosp 54</i>		<i>Hosp 55</i>		<i>Hosp 56</i>	
		CSF	Total														
1	5	3	15	5	25	4	20	4	20	4	20	5	25	5	25	4	20
2	5	2	10	5	25	4	20	3	15	4	20	4	20	5	25	4	20
3	5	4	20	5	25	4	20	3	15	4	20	5	25	5	25	4	20
4	5	1	5	5	25	4	20	4	20	3	15	5	25	3	15	5	25
5	5	2	10	5	20	3	15	3	15	1	5	2	10	1	5	2	10
6	5	1	5	5	25	2	10	3	15	5	25	5	25	5	25	5	25
7	4	4	16	5	25	2	8	5	20	0	0	0	0	5	20	5	20
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11	4	1	4	3	12	2	8	2	8	4	16	5	20	3	12	5	20
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18	1	2	2	5	5	3	3	2	2	1	1	0	0	1	1	1	1
19	1	2	2	5	5	3	3	5	5	3	3	0	0	5	5	3	3
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26	3	3	9	4	12	3	9	3	9	1	3	1	3	5	15	1	3
27	3	3	9	5	15	3	9	3	9	1	3	1	3	4	12	1	3
28	3	3	9	5	15	2	6	3	9	5	15	5	15	4	12	5	15
Grand Total		247		415		257		232		210		241		277		283	
Index		9.15		14.82		9.52		8.59		8.40		12.05		9.89		10.11	

Qts	Weight	<i>Hosp 57</i>		<i>Hosp 59</i>		<i>Hosp 61</i>		<i>Hosp 62</i>		<i>Hosp 63</i>		<i>Hosp 64</i>		<i>Hosp 65</i>		<i>Hosp 67</i>	
		CSF	Total														
1	5	4	20	5	25	5	25	5	25	4	20	4	20	4	20	2	10
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27	3	3	9	1	3	3	9	1	3	3	9	2	6	1	3	1	3
28	3	4	12	5	15	5	15	4	12	4	12	2	6	2	6	4	12
Grand Total		225		252		272		238		228		170		164		246	
Index		9.78		9.00		9.71		8.50		9.50		8.10		10.25		8.79	

Qts	Weight	<i>Hosp 68</i>		<i>Hosp 69</i>		<i>Hosp 70</i>		<i>Hosp 71</i>		<i>Hosp 72</i>		<i>Hosp 73</i>		<i>Hosp 74</i>		<i>Hosp 75</i>	
		CSF	Total														
1	5	2	10	2	10	2	10	2	10	2	10	2	10	2	10	2	10
2	5	1	5	1	5	1	5	1	5	1	5	1	5	1	5	1	5
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26	3	1	3	1	3	1	3	1	3	1	3	1	3	5	15	1	3
27	3	1	3	1	3	1	3	1	3	1	3	1	3	2	6	1	3
28	3	4	12	4	12	4	12	4	12	4	12	4	12	1	3	4	12
Grand Total		239		246		246		246		248		246		256		244	
Index		8.85		8.79		8.79		8.79		8.86		8.79		9.14		8.71	

Qts	Weight	<i>Hosp 76</i>		<i>Hosp 79</i>		<i>Hosp 80</i>		<i>Hosp 81</i>		<i>Hosp 82</i>		<i>Hosp 83</i>		<i>Hosp 85</i>		<i>Hosp 86</i>	
		CSF	Total														
1	5	2	10	2	10	2	10	5	25	2	10	1	5	3	15	4	20
2	5	1	5	1	5	1	5	4	20	1	5	4	20	5	25	2	10
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6	5	1	5	1	5	2	10	4	20	4	20	5	25	4	20	1	5
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16	2	5	10	2	4	5	10	3	6	2	4	3	6	4	8	1	2
17	2	2	4	4	8	4	8	1	2	1	2	5	10	4	8	5	10
18	1	4	4	3	3	4	4	2	2	4	4	2	2	2	2	4	4
19	1	3	3	5	5	5	5	5	5	2	2	4	4	3	3	2	2
20	1	5	5	2	2	2	2	1	1	4	4	1	1	2	2	3	3
21	1	2	2	5	5	1	1	3	3	2	2	1	1	3	3	3	3
22	1	5	5	3	3	1	1	2	2	2	2	1	1	2	2	0	0
23	3	4	12	5	15	4	12	4	12	1	3	2	6	3	9	0	0
24	3	0	0	4	12	2	6	3	9	2	6	2	6	4	12	0	0
25	3	5	15	4	12	1	3	1	3	5	15	4	12	5	15	5	15
26	3	2	6	4	12	4	12	2	6	4	12	2	6	4	12	5	15
27	3	4	12	5	15	5	15	1	3	2	6	2	6	4	12	4	12
28	3	1	3	2	6	1	3	5	15	3	9	1	3	4	12	2	6
Grand Total		245		266		250		269		233		218		316		230	
Index		9.07		9.50		9.26		9.61		9.71		7.79		11.29		9.20	

Response Breakdown by Sectors and Bed Size and State

No.	State	Sample	Public	%	Private	%
1.	Johor	1,997	1,813	90.8	184	9.2
2.	Kedah	1,749	1,537	87.9	212	12.8
3.	Kelantan	1,036	1,036	100.0	0	0
4.	Kuala Lumpur	3,276	2,810	85.8	466	14.2
5.	Melaka	1,497	906	60.5	591	39.5
6.	Negeri Sembilan	934	934	100.0	0	0
7.	Pahang	731	637	87.2	94	12.8
8.	Perak	3,383	3,283	97.1	100	2.9
9.	Perlis	404	404	100.0	0	0
10.	Pulau Pinang	2,788	2,049	73.5	739	26.5
11.	Sabah	1,714	1,639	95.6	75	4.4
12.	Sarawak	1,926	1,926	100.0	0	0
13.	Selangor	1,499	1,076	71.8	423	28.2
14.	Terengganu	861	861	100.0	0	0

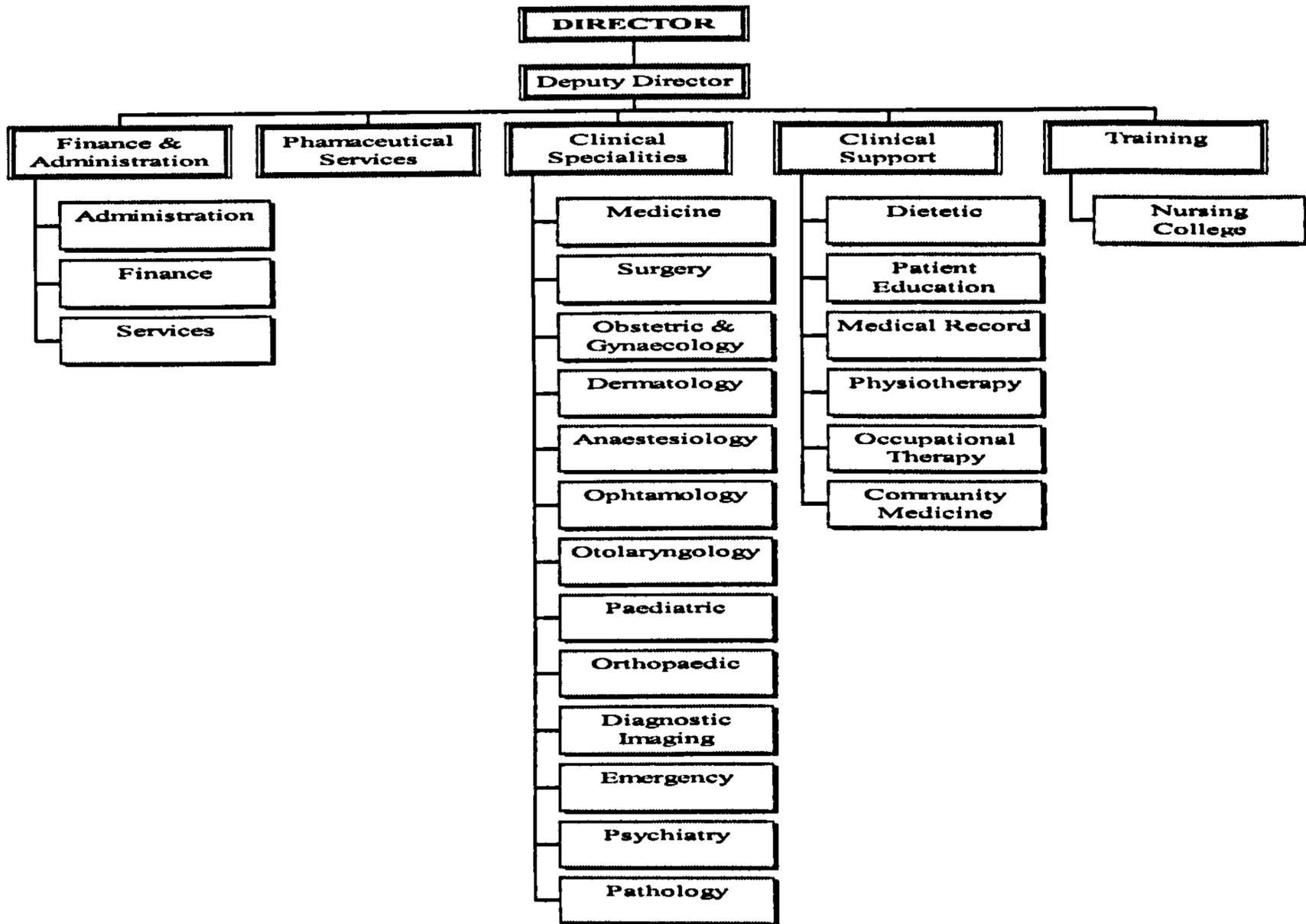
<i>TOTAL</i>	<i>23,795</i>	<i>20,911</i>	<i>87.9</i>	<i>2,884</i>	<i>12.9</i>
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TOTAL RESPONSE BREAKDOWN OF PERCENTAGE BY SECTORS

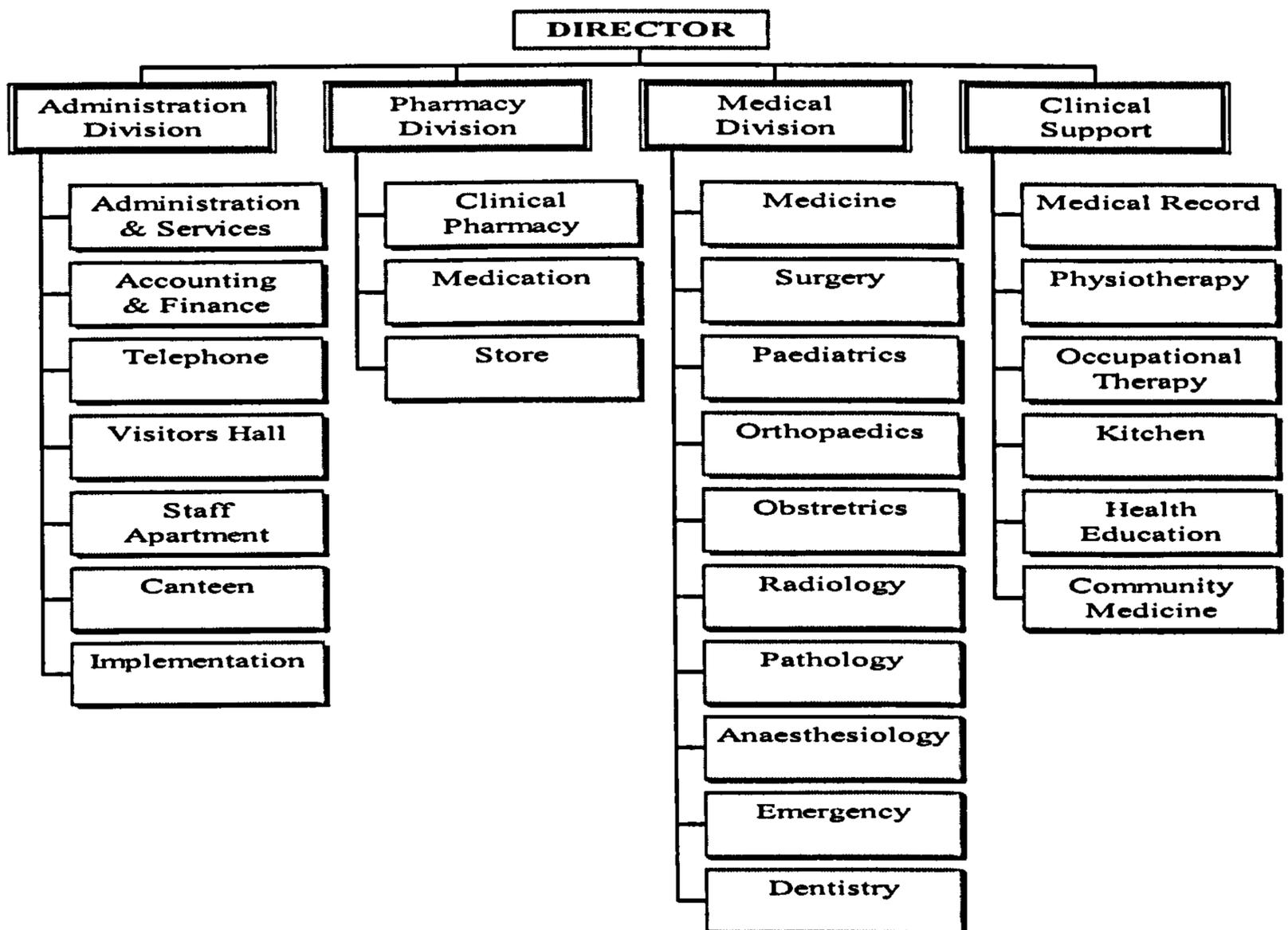
No.	State	Population		Sample	
		Public	Private	Public	Private
1.	Johor	81.2	18.8	90.8	9.2
2.	Kedah	86.1	13.9	87.9	12.8
3.	Kelantan	96.8	3.2	100.0	0
4.	Kuala Lumpur	55.0	45.0	85.8	14.2
5.	Melaka	59.2	40.8	60.5	39.5
6.	Negeri Sembilan	90.6	9.4	100.0	0
7.	Pahang	90.9	9.1	87.2	12.8
8.	Perak	85.6	14.4	97.1	2.9
9.	Perlis	100.0	0	100.0	0
10.	Pulau Pinang	89.5	10.5	73.5	26.5
11.	Sabah	92.1	7.9	95.6	4.4
12.	Sarawak	92.1	7.9	100.0	0
13.	Selangor	54.1	45.9	71.8	28.2
14.	Terengganu	100.0	0	100.0	0

Hospitals Organisational Charts

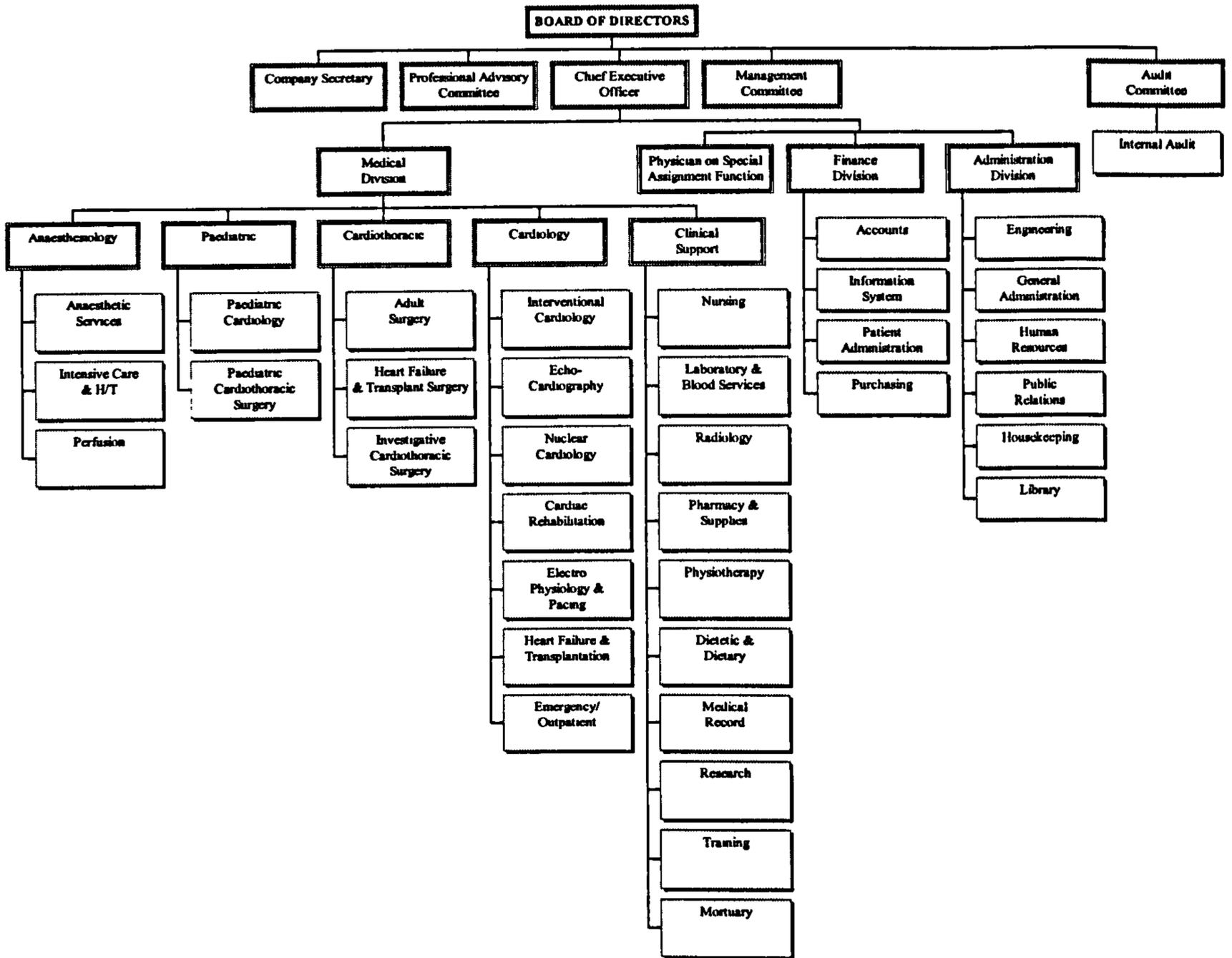
Hospital A



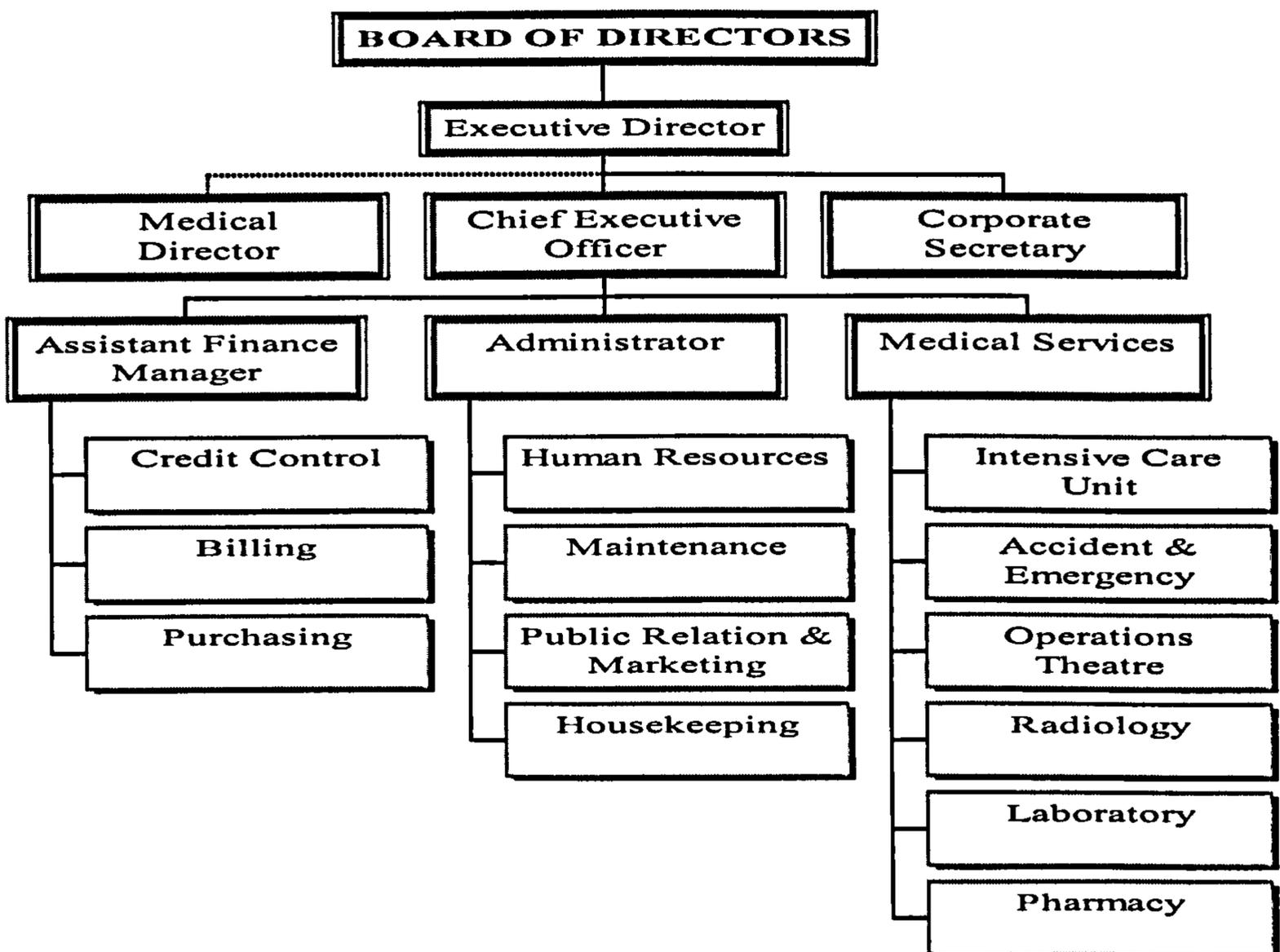
Hospital B



Hospital C



Hospital D



Department	1997	1998	1999
Medical	Reduce Incidence of Thrombophlebitis Stroke, "Brain Attack" 'No show' at Day Care Centre Diabetic Care in Diabetic Clinic: A QA Approach.	Door to Needle follow up study Nutritional Status in Patients with Chronic Renal Failure On Dialysis. Assessment of asthmatic patient from A&E prior to Admission Cost Effective of Treatment of Non-Steriodal Anti Inflammatory Drug Induced Gastritis.	
Pathology	To reduce waiting for FNAC procedure To improve the Quality of Platelet concentrates In Blood Bank of the Hospital To increase Full Blood Picture Result in Hospital A	To Reduce Percentage of Bilirubin Test on Lisis Specimens from Kenanga Ward To improve on Filing Report System for Haematology. To reduce the C&S contamination count. Boold Bank CT Ratio	To reduce the waiting time for delivery specimens To reduce the culture rate and urine sensisitivity that do not have organism growth.
Paediatric	Delay in discharge process in special care Nursery	Asthma Knowledge Amongst parent of asthmatic Child Cost Effcetiiveness of Capillary Bilirubinmeter Monitoring in the Management Neonatal Jaundice In Neonatal Ward Implementation of ambulalatory clinic to reduce bed Occupancy rate in paediatric ward	

Department	1997	1998	1999
ENT	Compliance Rate to Follow up for Congenital Deafness cases to ORL & HN Surgery Clinic.	Assessment of Waiting Time in ENT Clinic	Combination therapy for eradication of helicobacter Pylon in East Malaysia
Orthopaedic	Study on the Rate of Cancellation of Case Posted for Elective Operation. To reduce Waiting Time for POP casting in Kiangang ward	POP Complication AOR Discharge To reduce infection rate among patient with upper tibial Pin insertion.	
Psychiatric	Study of Defaulter Rate in Psychiatric Clinic	Study on Behaviour Observation Chart	Walk-in Information Counselling Clinic
Outpatient Clinic	Effective Treatment for Outpatient Patronage		
Obstetrics & Gynaecology	Audit on Episiotomy Practice	Changing System of Antenatal Booking in O&G Clinic	Delays in taking cases for the O&G.
Ward		To Reduce Discharge Rate self-risk Category To reduce waiting time for POP casting To reduce delay in discharge process for Tanjung ward	To reduce the rate of wastage for Isoket Medication Study on failure to provide medicine and improve on the Systems for better care
Emergency		An Audit of asthma Patient Attending at the Emergency Department	Towards reducing Toilet & Suturing (T&S) wound infection.
Nursing		Unsatisfactory Semester Examination Results.	Underutilisation of Library Among Student Nurses

Compilation of Hospital A performance Indicators for year 1997, 1998, 1999 and 2000.

No	Department	1997 indicators	1998 indicators	1999 indicators	2000 indicators
1.	Revenue		to ensure collection from debtors	to ensure collection from debtors	to ensure collection from debtors
2.	Dermatology		Psoriasis patient return to work	psoriasis patient return to work	psoriasis patient return to work
3.	Emergency		toilet & suturing wound breakdown	toilet & suturing wound breakdown	toilet & suturing wound breakdown
4.	Nursing College		Passes in final examination	passes in final examination	passes in final examination
5.	Obstetrics & Gynaecology	haemorrhage & pregnancy fatality rate enclampsia case fatality rate	haemorrhage & pregnancy fatality rate enclampsia case fatality rate episiotomy wound breakdown	harmorrhage & pregnancy fatality rate enclampsia case fatality rate episiotomy wound breakdown	haemorrhage & pregnancy fatality rate enclampsia case fatality rate episiotomy wound breakdown
6.	Med Record		medical reports ready within 4 weeks	medical reports ready within 4 weeks	medical reports ready within 4 weeks
7.	Ophatamology		post-operative wound infection rate in elective cataract surgery	post-operative wound infection rate in elective cataract surgery post-operative endophthalmitis rate following elective cataract surgery	post-operative wound infection rate in elective cataract surgery post-operative endophthalmitis rate following elective cataract surgery
8.	Pathology	laboratory specimens rejection rate proportion of urgent laboratory tests	laboratory specimens rejection rate proportion of urgent laboratory test urine contamination rate	laboratory specimens rejection rate proportions of urgent tests urine contamination rate adequacy of FNA cases done result of tests for Hitachi analyser received before 10am will be out by 12:45pm	laboratory specimens rejection rate proportion of urgent tests urine contamination rate adequacy of FNA cases done results of test for HITACHI analyser received before 10am will be out 12:45pm
9.	ENT		myringoplasty success rate	quality time spent with patient at ENT clinic with procedures (30 min) quality time spent with patient at ENT clinic without procedures (15 min)	quality time spent with patient at ENT clinic with procedures (30min) quality time spent with patient at ENT clinic without procedures (15min) length of stay for post-tonsillectomy within 48 hrs

No	Department	1997 indicators	1998 indicators	1999 indicators	2000 indicators
10.	Pharmacy		proportions of wards inspections done to the number of wards functioning	proportions of wards inspection done to the number of wards functioning prescription that cannot be fulfilled	proportions of wards inspection done to the number of wards functioning prescription that cannot be fulfilled
11.	Dietetics		monitor zero error in servings patient meals maintain cleanliness in food premises in accordance to section 10&11 Food Act 1983	maintain cleanliness in food premises in accordance to section 10&11 Food Act 1983.	maintain cleanliness in food premises in accordance to section 10&11 Food Act 1983
12.	Medicine	typhoid case fatality rate thrombolytic therapy-door to needle time is less than 1 hr from the time registration at casualty to administration of streptokinase In CCU	typhoid case fatality rate thrombolytic therapy-door to needle time of streptokinase injection within 1 hr	typhoid case fatality rate thrombolytic therapy-door to needle time of streptokinase injection within 1 hr	typhoid case fatality rate thrombolytic therapy-door to needle time of streptokinase injection in 1hr
				Mortality rate of uncomplicated asthma Admitted to medical ward Death due to DKA Proper clinical & peakflow assessment to be done to all acute asthmatic patients I.V.D.U. with infective endocarditis patient Treated with IV antibiotics should not miss intravenous Injection more than 2 doses during Hospital stage Defaulter rate of tuberculosis patient	Mortality rate of uncomplicated asthma admitted to medical ward death due to DKA proper clinical & peakflow assessment to be done to all acute asthmatic patient I.V.D.U with infective endocarditis patient treated with IV antibiotics should not miss intravenous injection more than 2 doses during hospital stage defaulter rate of tuberculosis patient
				Undergoing treatment clinical over anticoagulation rate of angine and non-Q wave myocardial infarction patient treated with intravenous heparin	undergoing tretament clinical over anticoagulation rate of unstable angina and non-Q wave myocardial infarction patient treated with intravenous heparin
				AMI case fatality rate Sputum conversion rate (SCR)	AMI case fatality rate sputum conversion rate (SCR)

No	Department	1997 indicators	1998 indicators	1999 indicators	2000 indicators
13.	Surgery	<p>elective surgery cholecystitis & cholelithiasis case fatality rate</p> <p>incidence of post operative infection of clean wound</p> <p>myocardial infarction case fatality rate</p> <p>gastroenteritis case fatality rate</p> <p>nosocomial infection rate</p>	<p>elective surgery cholecystitis & cholelithiasis case fatality rate</p> <p>incidence of post operative infection of clean wound</p> <p>myocardial infarction case fatality rate</p> <p>gastroenteritis case fatality rate</p> <p>nosocomial infection rate</p> <p>The rate of ependectomy in patients suspected of acute appendicitis but histologically proven normal appendix</p> <p>head injury case fatality rate</p> <p>waiting time for open fracture less than 8 hrs</p> <p>discharge rate</p>	<p>elective surgery cholecystitis & cholelithiasis case fatality rate</p> <p>incidence of post-operative infection of clean wound</p> <p>myocardial infarction case fatality rate</p> <p>gastroenteritis case fatality rate</p> <p>nosocomial infection rate</p> <p>the rate of appendectomy in patients suspected of acute appendicitis but histologically proven normal appendix.</p> <p>waiting time for open fracture less than 8 hrs</p> <p>discharge rate</p>	<p>elective surgery cholecystitis & cholelithiasis case fatality rate</p> <p>incidence of postoperative infection of clean wound</p> <p>myocardial infarction fatality rate</p> <p>gastroenteritis case fatality rate</p> <p>nosocomial infection rate</p> <p>the rate of appendectomy in patient suspected of acute appendicitis but histologically proven normal Appendix.</p> <p>waiting time for open fracture less than 8 hr</p> <p>discharge rate</p> <p>waiting time for closed fracture less than 8 hrs</p> <p>discharge rate</p>
14.	Orthopaedic	incidence of post POP cast complication	head injury case fatality rate	waiting time for open fracture less than 8 hrs	waiting time for open fracture less than 8 hrs
15.	Anaesthesiology		patient admitted to general ICU should have TISS (Therapeutic Intervention Scoring System) Of greater/equal to 20 on first day admission	patient admitted to general ICU should have TISS of greater/equal to 20 on first day admission	patient admitted to general ICU should have TISS of greater/equal to 20 on first day admission
16.	Imaging & Diagnostics	<p>proportion of outpatient undergoing X-ray examination</p> <p>Proportion of inpatient Undergoing X-ray examination</p> <p>Proportion of X-ray film rejected</p>		proportion of X-ray film rejected.	Proportion of X-ray film rejected
			All special examination (ultrasound, CT scan, Fluoroscopy case) will be reported within 3 Working days.		

No Department	1997 indicators	1998 indicators	1999 indicators	2000 indicators
17. Physiotherapy	to reduce number of re-referral rate from ortho clinics	no incidence of heat/chemical burn for patient undergoing electrotherapy	no incidence of heat/chemical burn for patient undergoing electrotherapy	no incidence of heat/chemical burn for patient undergoing electrotherapy
18. Psychiatric	re-admission rate should not occur within 3-months in Dahlia ward	re-admission rate should not occur within 3 months in Dahlia ward.	readmission rate should not occur Within 3 month in Dahlia ward	readmission rate should not occur Within 3 month in Dahlia ward
19. Administration	Inter-departmental letters not received	inter-departmental letters not received	inter-departmental letter not received	inter-departmental letter not received
20. Finance	processing of travel allowances & overtime for staff to cashier office within 14 days from date of receipt from staff	processing of travel allowances & overtime staff to cashier office within 14 days from date of receipt from staff.	processing of travel allowance & overtime staff to cashier office within 14 days from date of receipt from staff.	processing of travel allowance & overtime staff to cashier office within 14 days from date of receipt from staff.
21. Community	cases referred to the unit be extended psychosocial assistance	cases referred to the unit be extended psychosocial assistance.	cases referred to the unit be extended Psychosocial assistance	cases referred to the unit be extended Psychosocial assistance
22. Day care	'no show' at day care centre. Defaulting scope appointment	'no show' at day care. Defaulting scope appointment. Cancellation rate at day care No booking – case referred to day care Without appointment unplanned admission	'no show' at day care. Defaulting scope appointment Cancellation rate at day care no booking-case referred to day care without appointment unplanned admission	'no show' at day care. Defaulting scope appointment cancellation rate at day care no booking-case referred to day care without appointment unplanned admission
23. Paediatric	Neonatal nosocomial infection rate	neonatal nosocomial infection rate dengue notification index-24 hrs incidence	neonatal nosocomial infection rate dengue notification index-24 hrs	neonatal nosocomial infection rate dengue notification index-24 hrs
24. Occupational therapy	patient with burn wound is provided 2 pressure garment before discharged from burn unit			

No Department	1997 indicators	1998 indicators	1999 indicators	2000 indicators
25. Cardiothoracic			patient does not show for appointment	Sputum Conversion rate (SCR)
26. Nephrology				Adequacy of dialysis Kt/V more than1.2
27. Dentistry				rate of unacceptable quality intra-oral radiographie

HOSPITAL A POLICIES AND PROCEDURES MANUAL

- A. Whole hospital policies

- B. Clinical departmental policies
 - 1. Coronary care unit
 - 2. Day care centre
 - 3. Delivery suite
 - 4. Dental specialist clinic
 - 5. Diagnostic & Imaging service
 - 6. Emergency department
 - 7. Intensive care unit
 - 8. Medical Assistance
 - 9. Mortuary
 - 10. Nursing
 - 11. Operations theatre
 - 12. Pathology
 - 13. Special care nursery
 - 14. Special outpatient clinic
 - 15. Wards-general
 - 16. Wards-high dependency
 - 17. Wards-maternity
 - 18. Wards-paediatric
 - 19. Catering
 - 20. Central sterilisation supply department
 - 21. Health education
 - 22. Laundry & linen supply services
 - 23. Medical records
 - 24. Medico-social
 - 25. Pharmacy
 - 26. Medical store
 - 27. Prescribing & drug use
 - 28. Occupational therapy
 - 29. Physiotherapy

CHARACTERISTICS OF HOSPITAL A (NON-FINANCIAL PERFORMANCE INDICATORS)**TABLE 1 OUTPATIENT CLINIC BY DEPARTMENT 1999**

	Admission	No of days	Avg registration/days
General Medicine	15,964	249	64.11
General Surgery	12,270	249	49.28
Paediatric	9,552	249	38.36
Obstretic	4,283	49	87.41
Gaynaecology	4,811	98	49.09
Orthopaedic	12,788	151	84.69
Psychiatric	5,485	150	36.57
Ophthamology	10,575	149	70.97
Dermatology	5,796	150	38.64
ENT	6,777	150	45.18
Cardiology	2,550	48	53.13
Leprosy	67	150	0.45
Urology & Nephrology	1,042	89	11.71
Radiotherapy & Oncology	254	6	42.33
Accidents & Emergency	66,500	365	182.19
General outpatient (GPs')	136,610	285	479.33
TOTAL OUTPATIENT	259,324	2,587	100.24

TABLE 2 INPATIENT CLINIC BY DEPARTMENT 1999

	Admission	Beds complement	Occupancy rate (%)	Avg length of stay (days)
General Medicine	9,943	164	60.6	4.27
Paediatric	6,637	36	69.1	8.64
Psychiatric	1,278	52	24.6	13.67
Dermatology	1	14	7.1	2.00
General Surgery	5,554	68	81.7	4.52
Orthopaedic	3,005	60	50.1	6.87
ENT	345	18	19.2	3.89
Ophthamology	1,079	38	28.4	7.27
Gynaecology	3,375	38	88.8	2.99
Obstretic	10,238	84	121.9	2.35
Plastic Surgery	55	4	13.8	17.71
Non-classification	166	21	7.9	12.86
TOTAL INPATIENT	41,675	657		4.37

TABLE 3 HOSPITAL BED USAGE

	1997	1998	1999
1. Beds complement	611	625	657
2. Avg beds use/day	448	467	499
3. Occupancy rate (%)	73.38	74.70	75.89
4. Total Admission	38,100	39,724	41,675
5. Avg admission /day	194	109	114
6. Total Length of stay	163,390	170,400	181,996
7. Length of stay (days)	4.29	4.29	4.37

		1997	1998	1999
1.	Emergency	55,871	62,943	66,500
2.	General Clinic	131,201	127,944	136,610
3.	Specialist clinic	81,395	85,909	92,214
	TOTAL	268,467	276,796	295,324
	Daily avg	920	964	1,036

		1997	1998	1999
1.	inpatient	849,071	825,018	980,111
2.	outpatient	373,584	402,746	432,184
	TOTAL	1,222,655	1,227,764	1,412,295
	Daily avg	4,290	4,307.9	4,955.4

	1997	1998	1999
Clinical test	194,537	183,278	191,285
Haematology	149,881	219,364	254,813
Biochemistry	459,924	309,967	389,162
Microbiology	150,110	244,103	268,049
Immunology/Serology	47,135	16,812	17,561
Histopathology	17,449	31,980	54,893
Others	203,619	222,260	236,532
TOTAL	1,222,655	1,227,764	1,412,295

	Bed Occupancy Rate (%)			Avg Length of Stay (Days)		
	1997	1998	1999	1997	1998	1999
Medicine	76.27	87.14	71.57	4.29	4.58	4.27
Surgery	82.88	80.13	94.94	3.91	4.01	4.52
Orthopaedic	89.93	94.23	98.01	6.65	7.10	6.87
Obstretic	66.09	67.87	77.76	2.28	2.30	2.35
Gynaecology	67.36	74.63	74.65	3.02	3.02	2.99
Paediatric	86.90	80.91	80.29	4.21	4.10	4.24
Dermatology	57.74	65.82	76.44	15.91	21.36	17.71
Psychiatric	99.17	79.52	92.36	20.28	13.52	13.67
Ophatomology	33.52	45.35	56.96	5.52	5.77	7.27
OVERALL	73.38	74.70	75.89	4.29	4.29	4.37

	1997	1998	1999
General Surgery	1,514	1,380	1,455
Orthopaedic/Traumatic	2,919	3,526	4,508
Obstetric	991	1,016	1,198
Gynaecology	1,361	1,391	1,705
Ophthalmology	688	859	934
ENT	322	294	324
Urosurgery	210	240	220
Neurosurgery	30	30	28
Plastic Surgery	37	0	19
Others	4,591	4,706	5,172
TOTAL	12,663	13,442	15,563
Daily Avg	44.43	47.17	54.61

Types	Outpatient	Ward	Outstation
Chest	11,805	14,393	221
Skull	3,462	611	23
Abdomen	3,113	2,371	16
Spine & Neck	2,840	918	9
Limbs	15,147	4,707	9
Skeletal Survey	255	25	20
IVU	174	35	4
Retrograde Pyelogram	1	5	0
MCU/Urethrogram/Cystogram	25	48	2
Barium/Gastrografin	64	68	1
OCG	0	25	0
T-Tube Cholangiogram	0	4	0
Operative Cholangiogram	0	123	12
HSG	41	1	0
Myelogram	4	3	0
Sialogram	0	15	1
Venogram	2	4	0
Angiogram	0	2	0
Mamogram	328	20	101
Arthrogram	0	5	0
CT scan	709	1,083	285
Ultrasound	2,719	1,715	540
TOTAL	40,689	26,178	1,243
Daily Avg	142.77	91.85	4.36

HOSPITAL A ACHIEVEMENT IN CHRONOLOGICAL ORDER (ORGANISATIONAL OUTCOME)

- | | |
|------|--|
| 1986 | Develop an Integrated Inventory Control System for Warehousing. Fully implemented throughout public hospital medical store manage by Ministry of Health. |
| 1988 | District hospital inventory integration programme. A cost saving approach to manage stocks at a district level. It is used at some state with multiple storage facilities |
| 1992 | Won National Innovation award, in project 'lead shield' in Radiology department |
| 1995 | Pharmacy division won third place at national convention of KMK |
| 1996 | Pharmacy division won second place in national KMK convention |
| 1997 | Physiotherapy division won second place in National KMK convention (management category)
Pathology division won second place in National KMK convention (technical category)
Pathology division won first price at KMK convention, in NPC
Received recognition from WHO and UNICEF as 'infant-friendly hospital'
Won special public sector award in Human Resouce category
Won the most pretigious Prime Minister Quality Award, the first hospital in Malaysia |
| 1998 | Won a Financial management Award from Ministry of Health Malaysia
Won second place for the best Landscaping Award, public sector category
Pharmacy division won first place in National KMK convention |
| 1999 | Won second place for the best landscaping, public sector category
Pharmacy division won second place in National KMK convention, Management category
Won Public sector innovation award, project entitle: Recycle excess cannabis urine by positive control'
Accredited by MSQH, the first hospital in Malaysia to get prestigious recognition from a newly formed international body specialising in healthcare. |

HOSPITAL A FEEDBACK ON EMPLOYEES SATISFACTION SURVEY

This is a summary of feedback received from employees of hospital A. The response rate of 50.9% is received and analysed as follows:

1. Communication and dissemination of information	
Satisfied :	89.1%
Not satisfied:	10.1%
2. Services rendered	
Satisfied:	82.9%
Not satisfied:	8.9%
3. Welfare and safety	
Satisfied:	79.0%
Not satisfied:	11.5%
4. Do you like to work in hospital A?	
Yes:	98.3%
No:	0.8%

Overall index:

Scale 1-4 (not satisfied)	10.5%
Scale 6-10 (satisfied)	81.3%
No answer	8.2%

An open-ended question were given and the analysis were as follows:

1. Management	22 comment received
2. Shortage of staff	15
3. Amenities	26
4. Training	19
5. Uniform	13
6. Stationery	15
7. Staff benefits	3
8. Dietetic unit	4
9. service quality (ward)	11
10. Parking space	7
11. Information	27
12. Upgrading of services	5
TOTAL	167 comments received

TABLE 1 WAITING TIME STUDY IN EACH SPECIALIST CLINIC IN HOSPITAL A

100 patient were taken at each clinic waiting to see the physicians. The following are tabulated and analysed. So far 2 studies have been conducted, one is in October 1998 and the other is in April 1999.

Clinic	%	Waiting time	Notes/Explanation
1. Medical	20%	less than 30 mins	Doctors arrived late because of ward rounds & teaching workload.
	30	30 – 45 mins	
	10	45 – 60 mins	
	40	more than 1 hour	
2. Surgery	27%	less than 30 mins	
	29	30 – 45 mins	
	22	45 – 60 mins	
	22	more than 1 hour	
3. Orthopaedic	0%	less than 30 mins	
	23.9	30 – 45 mins	
	23.9	45 – 60 mins	
	52.3	more than 1 hour	
4. Psychiatry	40%	less than 30 mins	patient arrived after appointment time
	30	30 – 45 mins	
	22	45 – 60 mins	
	8	more than 1 hour	
5. Paediatric	69.6%	less than 30 mins	
	7.8	30 – 45 mins	
	3.9	45 – 60 mins	
	18.6	more than 1 hour	
6. O&G Antenatal	30%	less than 30 mins	
	65	30 – 45 mins	
	5	45 – 60 mins	
	nil	more than 1 hour	
7. O&G Gynae	86.6%	less than 30 mins	
	10	30 – 45 mins	
	3.4	45 – 60 mins	
	nil	more than 1 hour	
8. Dermatology	48%	less than 30 mins	2 staff currently available to handle this clinic, 1 specialist & 1 GP.
	30	30 – 45 mins	
	8	45 – 60 mins	
	14	more than 1 hour	
9. ENT	20%	less than 30 mins	
	43	30 – 45 mins	
	32	45 – 60 mins	
	5	more than 1 hour	
10. Nephrology	28%	less than 30 mins	Doctors treat patient in the ward before going to the clinic.
	14	30 – 45 mins	
	18	45 – 60 mins	
	40	more than 1 hour	

11. Cardiology	12%	less than 30 mins	Doctors treat patient in the ward
	8	30 – 45 mins	before going to the clinic.
	14	45 – 60 mins	
	66	more than 1 hour	
12. Physiotherapy	100%	less than 30 mins	
	nil	30 – 45 mins	
	nil	45 – 60 mins	
	nil	more than 1 hour	
13. Cardiothoracic	15%	less than 30 mins	
	20	30 – 45 mins	
	25	45 – 60 mins	
	40	more than 1 hour	
14. Ophatamology	53%	less than 30 mins	
	25	30 – 45 mins	
	14	45 – 60 mins	
	8	more than 1 hour	
15. Emergency	100%	0 – 5 mins	Code RED
	92.5	0-20 mins	Code YELLOW
	85.6	0-120 mins	Code GREEN

CHARACTERISTICS OF HOSPITAL B**TABLE 1 BED UTILISATION 2000**

	Bed Complement	total admission	Occupancy rate	Length of stay
Medical	55	3379	79.3	4.8
Paediatric	36	3138	76.1	3.2
Nursery (Babies)	40	2122	81.1	5.5
General Surgery	46	4327	71.2	2.9
Orthopaedic	39	2594	108.3	5.6
Gynaecology	28	2451	71.4	2.9
Obstetrics	56	8999	93.9	2.2
Cardiology	4	2	39.0	6.7
Case mix	6	3	44.1	16.7
Others	4	5	38.1	15.1
TOTAL	314	27,020	81.7	3.5

TABLE 2 DIETETIC WORKLOAD

	1997	1998	1999
First class patient			
• Normal diet	15,988	16,264	18,992
• Therapeutic diet	6,060	5,868	4,016
Second class patient			
• Normal diet	31,004	31,728	33,004
• Therapeutic diet	10,436	9,216	6,460
Third class patient			
• Normal diet	340,040	308,080	343,744
• Therapeutic diet	73,288	55,364	39,884
TOTAL	413,308	363,444	383,628

TABLE 3 PHYSIOTHERAPY WORKLOAD

	Inpatient	Outpatient
Orthopaedic	403	688
Medical	2,064	3,980
Surgery	484	914
Paediatric	290	572
Obstetric & Gynaecology	25	50
TOTAL	3,266	6,204

TABLE 4 ANAESTHESIOLOGY WORKLOAD (OT))

Cases	1998	1999
GA with tube	2,365	2,650
GA with mask	836	813
Spinal	1,121	1,411
Epidural	20	81
Branchial block	7	87
Ankle block	0	1
Wrist block	0	1
CGRA	15	22
Digital block	0	1
Sedation	25	23
LA	125	159
TOTAL	4,514	5,249

TABLE 5 IMAGING & DIGNOSTIC WORKLOAD

Cases	
1997	32,179
1998	32,799
1999	38,331

TABLE 6 PHARMACY WORKLOAD

	1997	1998	1999
Total prescription	57,746	60,840	75,106
Total medication given	110,029	115,567	130,297
Number Patient	51,451	51,804	52,252
Total purchasing (RM)	5,907,317	7,171,202	9,588,250

TABLE 7 PATHOLOGY WORKLOAD

January	60,465
February	61,694
March	68,260
April	70,918
May	72,950
June	68,648
July	74,296
August	68,751
September	73,003
October	74,233
November	75,985
December	74,424
TOTAL	843,627

TYPES OF REVENUE GENERATED BY HOSPITAL B FROM 1997-1999

Types of revenue	1997	1998	1999
Ward charges- Malaysian	1,381,870.00	1,372,562.50	1,547,584.50
Ward charges-non-Malaysian	470,086.00	334,547.00	316,715.50
JPL charges –Malaysian	198,215.00	202,104.00	209,795.00
JPL charges –non Malaysian	30,826.00	25,685.00	23,390.00
Charges for medical report	123,440.00	123,798.00	128,824.00
Charges for ambulance	10,794.00	9,370.30	10,639.20
Rental space	24,600.00	18,640.00	10,750.00
Rental accommodation	3,000.00	4,400.00	3,630.00
Charges-deposit	-	1,380.00	1,875.00
Sales of items	1,950.00	403.00	3.00
Charges-compound	3,300.00	1,200.00	100.00
Charges – human resources	4,010.00	2,791.00	11,750.49
Charges brought forward	16,268.00	8,760.07	4,844.22
TOTAL	2,268,359.00	2,105,640.87	2,269,900.91

	Jan	Feb	Jun	Dec	TOTAL
Collection	83,346.00	83,519.50	87,506.00	98,402.00	265,267.50
Exemption	3,568.00	3,959.00	4,250.00	2,143.50	9,670.50
Arrears	41,479.50	43,352.00	43,726.00	53,167.00	137,999.00
TOTAL	128,393.50	130,830.50	135,482.00	153,713.00	412,937.00

HOSPITAL C RESULTS OF TASKFORCE ACTIVITIES (ORGANISATIONAL OUTCOME)

No.	Initiative	Title	Updates
1.	New fees		Ministry of Health and Ministry of Finance have approved for revised fees given the nature of competition that the organisation is experiencing. This is subject to government category of fees (Private-rich, civil servant-government and subsidised-poor). These fee structure is effective last year.
2.	Discharge follow-up patients		policy effective on June 2001 "all government patients treated in hospital C for more than a year should be encourage to be followed up by their referring doctors at the government hospitals." "hospital C drugs formulary to include government 'blue book' items and these items will be prescribed to the government patients so that they can continue to obtain the same supply upon discharge back to the government hospitals."
3.	Set-up of Health System		Once accredited by MSQH it will then proceed to setup the system, in which it will be better prepared.
4.	Manage & monitor R&D effort		a few clinical trials are being carried out with the pharmaceutical companies, Institute of medical research (IMR) and Hospital Kuala Lumpur (HKL)
5.	Manage & monitor marketing activities		to build the necessary infrastructure and marketing team as hospital has a good reputation in the Asia Pacific region. Moreover, the government has coined the idea of 'medical tourism' in the region.
6.	Implement balanced performance management systems		will engaged in Hays Management consultant to integrate their current systems of performance to more integrated in nature, basically to bring in up-to-date technology into the organisation.
7.	Enhance Use of MedTrack		The enhance features for the following 3 areas have been identified: 1. Clinical pathways 2. Order reporting/result reporting 3. Electronic Medical Record (EMR)
8.	Developed clinical pathways & best practice guidelines		ICU, CCU, OT & ICL have developed clinical pathways eg Acute Myocardial Infarction (AMI), Acute Coronary Insufficiency (Angina) Primary PTCA-adult, Mtral Stenosis for PTMC-adult, ventricular septal defect (VSD) and etc.
9.	OPD utilisation & enhance customer service level		clinical assistant & nurses trained to provide on-line update reappointment and discharges Centralised appointment system of physicians under discussions
10.	OT/ICL utilisation		committee to look into this scheduling has improved where cases are performed earlier ICL procedures on the average increase from 432 to 483 cases per month and OT cases on the average of 210 cases per month.
11.	Implement Integrated Resource Planning Scheduling System		Individual OPD, OT and ICL scheduling system are being enhanced before integrated system implemented.
12.	Physical Image in OPD		In view of the congestion at OPD, management decided to erect a new block to cater for the expansion of outpatient services. This is still at the initial stage of gathering users' requirement.

CHARACTERISTICS OF HOSPITAL C (NON-FINANCIAL PERFORMANCE INDICATORS)

	1999	2000	Jun 01	Jul 01	Aug 01
Bed Complement	279	278	279	279	279
Bed Occupancy rate (%)	71.4	74.0	69.3	82.4	75.7
Avg length of stay	6.7	6.4	5.6	6.7	6.0
Total no of admissions	9,428	10,281	885	978	904
Total no of discharge	9,375	10,304	913	938	955
Total no of death	292	332	30	30	27

	Available	Occupancy rate	Total admission	Avg length of stay
Anggerik	30	86.5	170	4.4
Bunga Raya	20	77.4	68	6.1
Cempaka	30	81.4	73	8.3
Dahlia	32	75.6	176	4.4
Kenanga	20	78.7	86	5.5
Melor	30	84.5	126	5.5
Mawar	26	80.0	52	10.2
Day Care	11	28.2	96	1.0
Tanjong	32	-	-	-
Coronary Care Unit (CCU)	12	84.4	96	3.3
Intensive Care Unit (ICU)	18	75.6	192	2.1
Paediatric Intensive Care Unit (PICU)	6	62.9	26	2.8
Emergency	6	10.8	37	0.5
High Dependency Unit (HDU)	5	54.2	2	-
TOTAL	278	75.7	1,200	4.5

	Inpatient		2000		Outpatient		2000	
	1999	%		%	1999	%		%
Civil servant	2,015	21.4	2,333	22.7	15,289	17.6	17,447	17.4
Pensioners	2,261	24.0	2,323	22.6	29,284	33.7	33,897	33.7
Government sub-total	4,276	45.4	4,653	45.3	44,573	51.2	51,344	51.1
Private	3,949	41.9	4,182	40.7	39,893	45.8	46,679	46.4
Paediatric	1,169	12.4	1,421	13.8	0	0.0	0	0.0
Our staff	34	0.4	25	0.2	2,549	2.9	2,529	2.5
Private sub-total	5,152	54.6	5,628	54.7	42,442	48.8	49,208	48.9
TOTAL WORKLOAD	9,428		10,281		87,015		100,552	

	Inpatient		2000 %		Outpatient		2000 %	
	1999	%	1999	%	1999	%	1999	%
Government								
1. Civil servant	2,012	21.5	2,347	22.8	15,291	17.6	17,447	17.4
2. Pensioners	2,266	24.2	2,313	22.4	29,287	33.7	33,897	33.7
Private Paying								
1. Company	722	7.7	861	8.4	4,466	5.1	5,667	5.6
2. Statutory bodies	230	2.5	303	2.9	1,385	1.6	2,070	2.1
3. Local authorities	86	0.9	159	1.5	571	0.7	873	0.9
4. State government	193	2.1	330	3.2	1,078	1.2	1,474	1.5
5. Individual insurance	836	8.9	787	7.6	7,288	8.4	8,636	8.6
6. Individual self	639	6.8	588	5.7	19,943	22.9	21,658	21.5
7. Donation	32	0.3	1	0.0	6	0.0	1	0.0
8. Partial	44	0.5	24	0.2	2	0.0	5	0.0
9. Staff	31	0.3	30	0.3	2,549	2.9	2,529	2.5
Private Poor								
1. Individual self	2,251	24.0	2,495	24.2	5,149	5.9	6,295	6.3
2. Donation	5	0.1	13	0.1	0	0.0	0	0
3. Partial	28	0.3	54	0.5	0	0.0	0	0
TOTAL	9,375		10,305		87,015		100,552	

	1999		2000	
Inpatient				
<RM500	115	5.0	119	4.6
500 – 2,000	386	16.9	356	13.9
2,000 – 10,000	935	40.9	1,061	41.4
10,000 – 20,000	576	25.2	695	27.1
> 20,000	272	11.9	331	12.9
TOTAL	2,284		2,562	
Outpatient				
<RM10	22	0.4	40	0.6
10 – 50	942	18.3	1,083	17.2
50 – 200	1,456	28.3	1,750	27.8
> 200	2,729	53.0	3,422	54.4
TOTAL	5,149		6,295	

	Outpatient				Inpatient			
	2000	Jun01	Jul01	Aug01	2000	Jun01	Jul01	Aug01
< 1 mth	219	21	16	25	120	15	9	8
1-12 mth	2,116	189	201	168	520	44	52	48
1-11 years	6,530	647	610	518	1,052	87	114	96
12-20	2,655	236	246	211	368	28	19	28
21-29	3,494	264	312	319	274	23	31	28
30-34	2,890	228	232	271	198	12	23	21
35-39	4,047	317	353	423	350	31	45	35
40-44	6,370	540	574	619	675	64	59	60
45-49	9,129	762	827	829	935	90	74	79
50-54	12,618	1,031	1,136	1,190	1,249	105	115	92
55-59	12,904	1,151	1,178	1,200	1,231	109	109	100
60-64	13,806	1,225	1,349	1,294	1,336	108	135	118
65-69	11,784	909	1,067	1,125	984	82	95	99
70-74	7,495	627	702	679	614	51	66	64
75-79	3,229	274	281	311	263	24	24	22
>80 years	1,266	132	128	127	112	12	8	6
TOTAL	100,552	8,553	9,212	9,309	10,281	885	978	904
Male	63,793	5,389	5,945	6,007	6,751	577	635	600
Female	36,759	3,164	3,267	3,302	3,530	308	343	304

	Outpatient				Inpatient			
	2000	Jun01	Jul01	Aug01	2000	Jun01	Jul01	Aug01
Johor	2,896	257	257	239	369	40	29	20
Kedah	1,433	115	127	110	214	20	19	17
Kelantan	1,218	96	114	115	294	26	23	27
Melaka	2,537	248	254	269	358	28	41	41
Negeri Sembilan	5,130	424	438	461	704	70	66	67
Pahang	3,841	317	339	366	496	41	48	54
Perak	7,521	658	698	653	1,187	85	97	114
Perlis	234	21	16	25	37	5	3	3
Pulau Pinang	632	43	58	55	122	9	12	14
Sabah	505	30	63	28	464	23	55	39
Sarawak	474	41	52	38	312	31	38	27
Selangor	35,794	3,083	3,382	3,362	2,825	245	255	240
Terengganu	1,376	131	137	105	342	34	31	31
Federal Territory	36,384	3,045	3,239	3,423	2,292	210	233	178
Brunei	496	36	36	51	252	17	27	30
Indonesia	63	4	1	8	12	1	1	2
Singapore	6	0	0	1	0	0	0	0
Other countries	12	4	1	0	0	0	0	0
TOTAL	100,552	8,553	9,212	9,309	10,281	885	978	904

TABLE 8 OUTPATIENT WORKLOAD

	1999		2000	
Cardiothoracic	7,851	9.0	8,414	8.4
Cardiology	41,679	47.9	49,456	49.2
Emergency	3,505	4.0	6,231	6.2
Pharmacy	14,654	16.8	14,759	14.7
Physiotherapy	1,104	1.3	950	0.9
Laboratory	15,836	18.2	17,795	17.7
Family clinic	1,006	1.2	1,072	1.1
Others	1,380	1.6	1,875	1.9
TOTAL	87,015		100,552	

TABLE 9 SUMMARY OF CAES

	1999		2000	
Cardiothoracic				
open heart	1,812	71.6	1,880	69.9
closed heart	663	26.2	744	27.7
thoracic surgery	56	2.2	66	2.5
Cardiology				
Invasive cardiology	5,187	15.0	6,252	14.8
Non-invasive cardiology	29,446	85.0	35,921	85.2
TOTAL	34,633		42,173	

TABLE 11 EMERGENCY DEPARTMENT WORKLOAD

	1999	2000
Inpatient	3,946	4,473
Outpatient	3,505	6,231
TOTAL	7,451	10,704

TABLE 12 PATHOLOGY WORKLOAD

	1999	2000
Coagulation lab	20,450	23,010
Serology lab	19,968	24,683
Biochemistry lab	373,419	491,920
Haematology lab	144,199	183,778
Microbiology	6,366	6,210
Blood bank	34,484	65,357
TOTAL	598,886	794,958
Inpatient	438,539	569,592
Outpatient	160,347	225,366

TABLE 13 RADIOLOGICAL INVESTIGATION WORKLOAD		
	1999	2000
Chest – PA	19,769	22,298
PA & LAT	776	727
For Ribs	1	1
Abdomen	118	109
Abdomen (Erect & Supine)	30	15
I.I.(OT)	0	1
Skull	5	5
Orbits	0	1
Post Nasal Space (Nasal bone)	0	0
Mastoids	0	0
Paranasal sinuses	1	3
Skull AP & Both OBL (TMJ)	0	0
Spine – cervical	3	0
Cervical AP & LAT	26	36
Cervical complete exams	0	1
Thoracic	4	6
Lumbosacral	27	30
Hip joint	0	0
Pelvis	0	0
IVP	7	1
Ultrasound	476	694
Ultrasound biopsy	0	11
Lower extremity	46	60
Upper extremity	40	44
Fluoroscopy	0	2
Tomography	0	0
Portable service	0	0
Views for skeletal survey	0	1
TOTAL	21,329	24,046.

TABLE 14 PHYSIOTHERAPY TREATMENT		
	1999	2000
Inpatient		
Respiratory therapy		20,432
Exercise therapy		3,692
Cardiac rehabilitation		2,458
Electrotherapy		32
Subtotal	25,638	26,614
Outpatient		
Respiratory therapy		426
Exercise therapy		195
ESP		1,526
CRP		729
Electrotherapy		514
Subtotal	3,215	3,390
TOTAL	28,853	30,004

TABLE 15 PHARMACY DEPARTMENT		
	1999	2000
Outpatient		
Prescription	58,617	67,299
Drugs dispensed	208,022	251,330
Avg no of items/prescription	3.5	3.7
Inpatient		
Unit-of-use supply	144,290	170,068
Discharge supply	41,840	48,877
Floor stock supply	24,678	25,046
TOTAL	418,830	495,321

TABLE 16 NUCLEAR MEDICINE INVESTGATION WORKLOAD		
	1999	2000
TC MIBI Supine study	1,121	1,273
TL 201 study	282	217
MUGA study	0	0
F/PASS study	0	0
TC?TL (Dual isotope)	3	0
TOTAL	1,406	1,490

OUTCOME & ACHIEVEMENT OF HOSPITAL C

Department	Outcome/Achievement
Cardiology	<p>4 angiographic suites have been successfully upgraded</p> <p>complete state-of-the-art digital and cineless angiographic systems which make possible for future archiving data retrieval and remote networking. Moreover, this modern digital imaging system has also enabled hospital C to perform peripheral percutaneous transluminal angioplasty (PTA) and stenting with greater accuracy and safety.</p> <p>New device called 'Overture', a reusable metallic valvulotome for nonsurgical treatment of mitral stenosis</p> <p>Intravascular ultrasound (IVUS) allows visualisation of the lumen and wall of the arteries</p> <p>Electrophysiologist have successfully performed mapping and ablation on more complex atrial tachycardia and atrial flutter. The first in South-East Asia. Successfully in 2 heart transplantations in March and July.</p> <p>The first biventricular programmable pacemaker in the region for a patient with end-stage dilated cardiomyopathy.</p> <p>Established a research unit, functions to coordinates and tracks various international multicentre randomised trial that have the privilege to participate.</p> <p>Cardiothoracic expand cardiothoracic division which now offer both conventional thoracotomies and video thoracoscopy surgery.</p> <p>Embark on a ventricular assist devices (VADs) programme to help facilitate the management of heart failure patients.</p> <p>Successfully implemented of ongoing service and consultancy agreement with Universiti Kebangsaan Malaysia (UKM), Sabah Medical Centre, Hospital Universiti Sains Malaysia (USM) and Southern Hospital.</p> <p>Anaesthesiology official opening of HDU, which is 5-bedded capable of taking care of high risk but not ventilated patients.</p> <p>Laboratory & Blood Services Laboratory Information system "Labtrak" and new Hospital Information System "Medtrak" were successfully implemented. This improves patient billing, reporting and inventory management.</p> <p>Participates in international quality assessment programmes in clinical chemistry, haematology and immunoassay for the assessment of laboratory performance and comparison of methods used internationally.</p>

Radiology

gained expertise from visiting consultants in the area of computer tomography, ultrasound and magnetic resonance imaging. Recognise to be involved in formulation of Clinical Guidelines of Heart Failure 2000 in association with Ministry of Health, Academy of Medicine and National Heart Association.

The first inaugural biannual journal was published in February 2000. The collection of articles written by consultants and fellow of Hospital C to demonstrate culture of research among professionals.

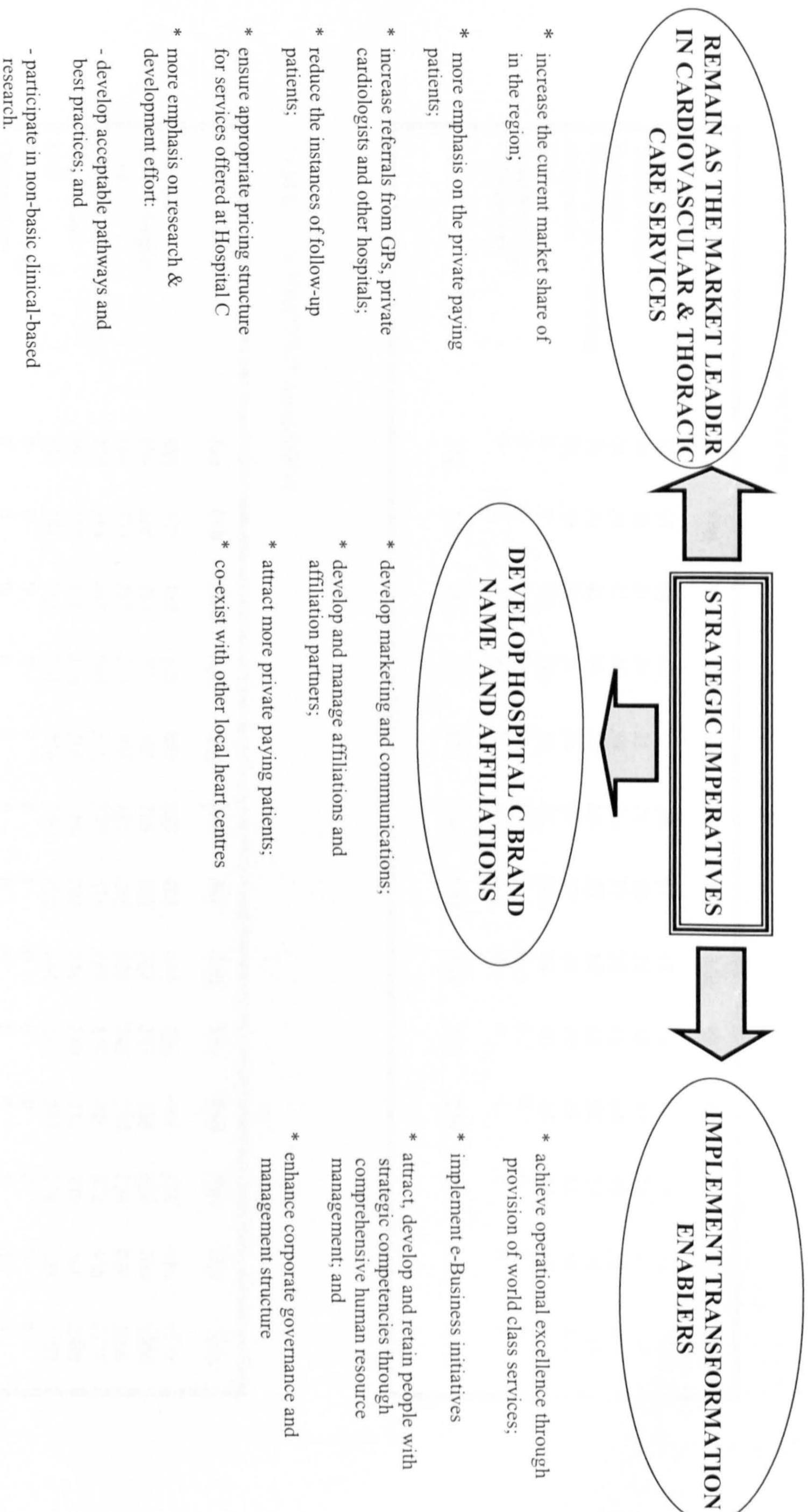
Pharmacy & Supplies

Medtrack implementation, encourage clinicians to practice electronic prescribing to further improve efficiency and minimise dispensing errors.

Physiotherapy

introduce measurement systems (indicators). Indicator 1: All post coronary artery bypass graft patients must participate (at least twice) in cardiac rehabilitation programme before discharge. Indicator 2: Reduce waiting time for outpatients from 30 minutes to 20 minutes. Indicators 3: Ensure that the department is clean and neat at all times.

HOSPITAL C STRATEGIC IMPERATIVES



INPATIENT & OUTPATIENT ADMISSION FOR HOSPITAL D 1999

TABLE 1 INPATIENT ADMISSION

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Medical	52	57	54	47	43	38	57	41	43	53	51	44	580
General Surgery	19	38	21	29	22	28	29	33	35	31	24	23	332
Paediatric	24	39	37	45	30	30	37	38	41	44	45	32	442
Obstetrics & Gynaecology	30	41	42	50	33	60	55	60	63	52	57	51	594
Orthopaedic	10	19	22	24	24	22	23	28	20	25	32	33	282
ENT	6	4	10	16	19	18	32	24	30	14	24	18	215
Anaesthesiology	0	0	0	0	0	0	0	0	0	0	0	0	0
Ophthalmology	0	0	0	0	0	0	0	0	0	1	1	0	2
TOTAL	140	198	186	211	171	196	232	224	232	219	234	200	2,447

TABLE 2 OUTPATIENT ADMISSION

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Medical	360	337	492	473	403	381	481	464	486	501	519	476	5373
General Surgery	216	236	280	277	303	285	302	324	317	338	224	204	3306
Paediatric	168	253	257	271	206	187	259	224	245	274	254	268	2866
Obstetrics & Gynaecology	274	334	407	444	372	372	453	449	439	446	372	408	4770
Orthopaedic	89	157	211	275	246	214	204	241	230	213	239	261	2580
ENT	134	181	233	251	274	259	306	284	285	297	278	325	3107
Anaesthesiology	0	0	0	0	0	0	0	0	0	0	0	0	0
Ophthalmology	0	0	0	0	0	0	0	0	0	0	0	0	0
GP	948	1160	1001	1058	1248	1619	1141	913	867	983	1122	1110	12820
TOTAL	2189	2658	2881	3049	3052	3317	3146	2899	2869	3052	3008	3052	35,202

OPERATING THEATRE CAPACITY FOR HOSPITAL D 1999

	Jan	Feb	Mac	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Medical	0	0	0	0	0	0	0	0	1	0	0	0	0
General Surgery	10	20	17	17	13	22	21	27	23	22	34	20	246
Paediatric	0	0	0	0	0	0	0	0	0	0	0	1	1
Obstetrics & Gynaecology	4	14	13	13	8	18	14	15	21	19	23	11	173
Orthopaedic	5	9	28	25	14	10	13	27	7	10	36	13	197
ENT	10	6	10	14	16	11	24	16	26	10	34	16	193
Anaesthesiology	0	0	0	0	0	0	0	0	0	0	0	0	0
Referrals	0	0	0	0	0	0	0	0	0	1	1	0	2
TOTAL	29	49	68	69	51	61	72	85	78	62	128	61	813
Total Revenue/resident	26000	58400	47460	89650	74160	69280	89175	79395	76090	91775	103750	73010	
Total revenue/visitor	0	0	0	0	0	0	0	0	0	8000	2000		
Day Case													
Medical	9	5	11	9	10	10	16	16	12	10	15	11	134
General Surgery	62	73	78	89	97	69	108	84	108	137	43	50	998
Paediatric	0	0	0	0	0	0	0	0	0	0	0	1	1
Obstetrics & Gynaecology	2	5	6	13	4	6	6	11	4	7	0	10	74
Orthopaedic	7	10	25	22	14	10	32	21	21	19	21	45	247
ENT	11	18	15	14	11	18	25	13	11	15	4	16	171
Anaesthesiology	0	0	0	0	0	0	0	0	0	0	0	0	0
Ophthalmology	0	0	0	0	0	0	0	0	0	0	0	1	1
TOTAL	91	111	135	147	136	113	187	145	156	188	83	133	1625
GRAND TOTAL	120	160	203	216	205	174	259	230	234	250	211	194	2456

NUMBER OF PRESCRIPTION PHARMACY DEPARTMENT FOR HOSPITAL D 1999

Inpatient	Jan	Feb	Mac	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Medical	148	213	227	136	174	199	173	154	140	189	155	155	
General Surgery	29	75	75	102	170	68	69	122	97	78	67	67	
Paediatric	50	100	127	93	96	42	72	152	71	129	98	98	
Obstetrics & Gynaecology	51	84	104	89	78	167	124	119	127	136	127	127	
Orthopaedic	15	54	75	131	115	91	77	106	78	104	88	88	
ENT	6	12	17	36	41	32	84	49	63	27	49	49	
Anaesthesiology	0	0	0	0	0	0	0	0	0	0	0	0	
Referrals	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL	299	538	625	587	674	599	599	702	576	663	584	584	
Total Revenue	37730	53141	69701	75933	59708	65148	76301	73167	62095	73715	79911	69496	
No of staff	8	8	8	8	8	8	8	8	8	8	7	8	
Avg Revenue per test	126.19	98.78	111.52	129.36	88.59	108.76	127.38	104.23	107.80	111.18	136.83	119.00	
Avg Revenue per staff	4716.25	6642.63	8712.63	9491.63	7463.50	8143.5	9537.63	9145.88	7761.88	9214.38	11415.86	8687.00	
Outpatient													
Medical	331	364	473	422	371	352	443	400	422	452	479	479	
General Surgery	101	114	96	100	112	108	116	126	159	195	161	161	
Paediatric	153	245	257	247	201	148	232	203	226	229	242	242	
Obstetrics & Gynaecology	171	215	261	298	223	248	246	274	271	305	276	276	
Orthopaedic	77	120	161	189	179	156	182	200	184	200	210	210	
ENT	138	171	248	238	260	267	290	275	280	277	320	320	
Anaesthesiology	0	0	0	0	0	0	0	0	0	0	0	0	
GP	685	778	696	576	693	606	532	611	636	766	698	698	
TOTAL	1656	2007	2192	2070	2039	1885	2041	2089	2178	2424	2386	2386	
Total Revenue	56500	72253	87027	82623	78643	75903	92939	83345	98019	10627	105919	107584	
No of staff	8	8	8	8	8	8	8	8	8	8	7	8	
Avg Revenue per test	34.12	36.00	39.70	39.91	38.57	40.27	45.54	39.90	45.00	43.84	44.39	45.09	
Avg Revenue per staff	7062.5	9031.6	10878.4	10327.9	9830.4	9487.9	11617.4	10418.1	12252.4	13284	1513.3	13448.1	

PATHOLOGY TEST FOR HOSPITAL D 1999

Inpatient	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Medical	615	660	794	602	769	534	678	705	581	694	610	785	
General Surgery	63	147	102	111	139	70	66	85	180	149	105	76	
Paediatric	367	520	458	606	285	369	502	541	580	507	538	395	
Obstetrics & Gynaecology	24	87	42	47	30	125	92	70	56	138	106	119	
Orthopaedic	36	66	185	65	83	82	85	44	87	226	64	47	
ENT	11	29	53	61	65	91	130	109	42	60	101	85	
Anaesthesiology	0	0	0	0	0	0	0	0	0	0	0	0	
Referrals	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL	1155	1541	1648	1524	1399	1285	1566	1557	1527	1803	1540	1507	
Total Revenue	13461	18689	18428	18252	16308	18272	20840	17450	18918	21136	18424	16644	
No of staff	4	4	4	4	4	4	3	3	3	3	3	3	
Avg Revenue per test	11.65	12.13	11.18	11.98	11.66	14.22	13.31	11.21	12.39	11.72	11.96	11.04	
Avg Revenue per staff	3365.3	4672.3	4607.0	4563.0	4077.0	4568.0	6946.7	5816.7	6306.0	7045.3	6141.3	5548.0	
Outpatient													
Medical	570	364	838	910	943	570	797	993	901	1098	1045	833	
General Surgery	236	136	228	288	224	257	116	244	228	159	85	122	
Paediatric	43	70	79	53	51	40	29	127	115	75	68	19	
Obstetrics & Gynaecology	68	117	199	165	157	119	173	157	208	251	182	236	
Orthopaedic	25	86	94	55	82	64	90	31	98	205	49	240	
ENT	27	46	75	59	93	175	140	53	77	145	64	97	
Anaesthesiology	0	0	0	0	0	0	0	0	0	0	0	0	
GP	392	520	423	388	590	1172	1202	1045	1359	473	330	699	
Referral	11	13	3	236	8	3	0	0	0	0	0	0	
TOTAL	1372	1352	1939	2154	2148	2400	2547	2650	2986	2406	1823	2246	
Total Revenue	13968	16030	20740	33367	24115	27007	29860	24530	26227	24001	19511	21578	
No of staff	4	4	4	4	4	4	3	3	3	3	3	3	
Avg Revenue per test	10.18	11.86	10.70	15.49	11.23	11.25	11.72	9.26	8.78	9.98	10.70	9.61	
Avg Revenue per staff	3492.0	4007.5	5185.0	8341.8	6028.8	6751.8	9953.3	8176.7	8742.3	8000.3	6503.7	7192.7	

PROFIT & LOSS ACCOUNT FOR HOSPITAL D 1999

SALES	
• Income from pharmacy	841,676.29
• Income from x-ray	660,168.25
• Income from laboratory	434,021.30
• Income from pharmacy	150,469.78
• Income from nursing procedures	488,440.24
• Income of OT	171,094.50
• Income from equipment usage	250,035.00
• Income from physicians contribution	38,666.45
• Income from ward	579,717.15
• Income from ambulance	97,126.88
• Rental space	48,850.00
GROSS SALES	3,760,265.84
COST OF GOODS SOLD	
• Pharmacy stock (old)	0.00
• X-ray stock (old)	6,925.68
• Lab supplies stock (old)	15,723.26
• Medical supplies stock (old)	15,480.40
• OT supplies stock (old)	23,459.25
• Printing stock (old)	6,585.50
• Pharmacy purchase	866,309.24
• X-ray purchase	62,819.60
• Lab supplies purchase	55,348.50
• Medical purchase	69,383.87
• OT supplies purchase	132,281.63
• Printing purchase	5,294.62
• Pharmacy c/stock	(278,835.70)
• X-ray c/stock	(9,159.12)
• Lab supplies c/stock	(20,537.22)
• Medical supplies c/stock	(26,099.44)
• OT supplies c/stock	(78,121.18)
• Printing c/stock	(7,428.50)
TOTAL COST	839,429.99
GROSS PROFIT/(LOSS)	2,920,835.85
EXPENSES	
• Expenses	4,971,897.98
NET PROFIT/(LOSS)	(2,051,062.13)

DEBTORS AGING REPORT 1999

There are 321 accounts outstanding as of December 1999 which accounted for RM 1,866,353.11. The following shows the ageing report on debtors.

Current month	423,735.05	16.88%
1 month	377,532.59	15.04
2 month	275,510.55	10.98
3 month	146,697.75	5.85
4 month	110,732.30	4.41
5 month	532,144.87	21.21
> 6 month	643,409.85	25.64
TOTAL	2,509,762.96	

NUMBER OF DOCTORS IN THE PUBLIC & PRIVATE SECTORS AND DOCTOR-POPULATION RATIO BY STATES IN MALAYSIA

States	1970			1980			1990			1997						
	public	private	total	ratio	public	private	total	ratio	public	private	total	ratio				
Perlis	8	8	16	7,566	15	10	25	5,932	33	22	55	3,411	70	31	101	2,152
Kedah	42	52	94	10,519	95	73	168	6,643	151	181	332	4,253	393	331	724	2,113
Pulau Pinang	105	217	322	2,410	143	211	354	2,697	197	438	635	1,798	481	612	1,093	1,118
Perak	135	242	377	4,162	213	264	477	3,784	305	489	794	2,799	732	614	1,346	1,556
Selangor	226	711	937	1,740	85	260	345	4,393	182	684	866	2,288	561	1,273	1,834	1,636
Wilayah	-	-	-	-	765	420	1,185	825	894	823	1,717	717	2,675	1,130	3,805	361
Negeri Sembilan	54	74	128	3,762	98	67	165	3,476	136	142	278	2,604	307	203	510	1,589
Melaka	42	66	108	3,742	79	51	140	3,575	93	128	221	2,640	260	225	485	1,200
Johor	100	139	239	5,344	171	185	356	4,602	247	426	673	3,130	647	671	1,318	1,938
Pahang	42	28	70	7,213	83	63	146	5,471	158	143	301	3,509	348	186	534	2,320
Terengganu	23	6	29	13,978	55	25	80	6,757	119	58	177	4,249	287	103	390	2,502
Kelantan	30	20	50	13,695	60	27	87	10,273	235	88	323	3,782	604	151	755	1,917
Sabah	-	-	99	6,602	71	70	141	7,170	112	179	291	5,061	404	230	635	4,195
Sarawak	-	-	74	13,193	129	70	199	6,571	159	190	349	4,786	465	253	718	2,722
Malaysia	807	1,563	2,543	4,105	2,062	1,796	3,858	3,563	3,021	3,991	7,012	2,533	8,235	6,013	14,248	1,521

Source: Information and Development System Unit, Ministry of Health, Malaysia
Department of Statistics, Malaysia

DATA TABULATION

TABLE 1 : HOSPITAL OPERATIONS BY SECTORS

Operations	Public		Private		Total	
	freq	%	freq	%	freq	%
< 5 years	0	-	9	34.6	9	11.1
6 to 15 years	9	16.4	11	42.3	20	24.7
16 to 30 years	8	14.5	4	15.4	12	14.8
31 to 50 years	23	41.8	0	-	23	28.4
> 50 years	15	27.3	2	7.7	17	21.0
TOTAL	55		26		81	

TABLE 2 : TYPES OF MEASURES BY BED SIZE

Number of beds	freq	Financial		Non-financial		Mixture		Total	
		freq	percent	freq	percent	freq	percent	freq	percent
25 to 50 beds		9	60.0	1	16.7	7	11.1	17	20.2
51 to 100 beds		3	20.0	1	16.7	19	30.2	23	27.4
101 to 200 beds	2	13.3	1	16.7	9	14.3	12	14.3	
201 to 400 beds	0	-	2	33.3	7	11.1	9	10.7	
More than 400 beds		1	6.7	1	16.7	21	33.3	23	27.4
TOTAL		15		6		63		84	

TABLE 3 : TOTAL NUMBER OF EMPLOYEES BY SECTORS

No of employees	Public		Private		Total	
	freq	percent	freq	percent	freq	percent
Less than 49 people	1	2.8	12	48.0	13	21.3
50-199 people	18	50.0	4	16.0	22	36.1
200- 349 people	8	22.2	4	16.0	12	19.7
350- 499 people	2	5.6	4	16.0	6	9.8
More than 500 people	7	19.4	1	4.0	8	13.1
TOTAL	36		25		61	

TABLE 4 : NUMBER OF SPECIALIST BY BED SIZE

No of employ	25 to 50		51 to 100		101 to 200		201 to 400		>400		Total	
	freq	%	freq	%	freq	%	freq	%	freq	%	freq	%
Less than 5	11	78.6	3	42.9	1	20.0	1	14.3	0	-	16	42.1
6-20 people	3	21.4	3	42.9	1	20.0	2	28.6	1	20.0	10	26.3
21-35 people	0	-	0	-	0	-	1	14.3	0	-	1	2.6
36 to 49 people	0	-	0	-	3	60.0	1	14.3	3	60.0	7	18.4
More than 50	0	-	1	14.3	0	-	2	28.6	1	20.0	4	10.5
TOTAL	14		7		5		7		5		38	

TABLE 5 : NUMBER OF SPECIALIST BY SECTORS

No of employees	Public		Private		Total	
	freq	percent	freq	percent	freq	percent
Less than 5 people	7	43.8	9	45.0	16	16.7
6 to 30 people	3	18.8	6	30.0	9	25.0
21 to 35 people	1	6.3	1	5.0	2	5.6
36 to 49 people	2	12.5	3	15.0	5	13.9
More than 50 people	3	18.8	1	5.0	4	11.1
TOTAL	16		20		36	

TABLE 6 : NUMBER OF GENERAL PRACTITIONERS' BY BED SIZE

No of employ	25 to 50		51 to 100		101 to 200		201 to 400		>400		Total	
	freq	%	freq	%	freq	%	freq	%	freq	%	freq	%
Less than 30	7	100.0	17	100.0	9	100.0	5	83.3	0	-	38	86.4
31 to 55 people	0	-	0	-	0	-	0	-	0	-	0	-
56 to 80 people	0	-	0	-	0	-	1	16.7	0	-	1	2.3
81 to 99 people	0	-	0	-	0	-	0	-	2	40.0	2	4.5
More than 100	0	-	0	-	0	-	0	-	3	60.0	3	6.8
TOTAL	7		17		9		6		5		44	

TABLE 7 : NUMBER OF GENERAL PRACTITIONERS' BY SECTORS

No of employees	Public		Private		Total	
	freq	percent	freq	percent	freq	percent
Less than 30 people	19	76.0	19	100.0	38	86.4
31 to 55 people	0	-	0	-	0	-
56 to 80 people	1	4.0	0	-	1	2.3
81 to 99 people	2	8.0	0	-	2	4.5
More than 100 people	3	12.0	0	-	3	6.8
TOTAL	25		19		44	

TABLE 8 : NUMBER OF NURSES BY BED SIZE

No of employ	25 to 50		51 to 100		101 to 200		201 to 400		>400		Total	
	freq	%	freq	%	freq	%	freq	%	freq	%	freq	%
Less than 100	15	100.0	19	100.0	6	60.0	1	20.0	0	-	41	73.2
101 to 299 nurses	0	-	1	-	4	40.0	3	60.0	0	-	8	14.3
300 to 499 nurses	0	-	0	-	0	-	1	20.0	0	-	1	1.8
500 to 699 nurses	0	-	0	-	0	-	0	-	3	50.0	3	5.4
More than 700	0	-	0	-	0	-	0	-	3	50.0	3	5.4
TOTAL	15		20		10		5		6		56	

TABLE 9 : NUMBER OF NURSES BY SECTORS

No of employees	Public		Private		Total	
	freq	percent	freq	percent	freq	percent
Less than 100	23	69.7	18	78.3	41	73.2
101 to 299 nurses	4	12.1	4	17.4	8	14.3
300 to 499 nurses	0	-	1	4.3	1	1.8
500 to 699 nurses	3	9.1	0	-	3	5.4
More than 700	3	9.1	0	-	3	5.4
TOTAL	33		23		56	

TABLE 10 : NUMBER OF NON-MEDICAL STAFF BY BED SIZE

No of employ	25 to 50		51 to 100		101 to 200		201 to 400		>400		Total	
	freq	%	freq	%	freq	%	freq	%	freq	%	freq	%
Less than 100	14	100.0	15	100.0	5	60.0	2	20.0	0	-	36	67.9
101 to 250 staff	0	-	3	-	4	40.0	2	60.0	2	-	10	18.9
251 to 400 staff	0	-	0	-	1	-	1	20.0	0	-	2	3.8
401 to 499 staff	0	-	0	-	0	-	1	-	0	50.0	1	1.9
More than 500	0	-	0	-	0	-	0	-	4	50.0	4	7.5
TOTAL	14		18		10		5		6		53	

TABLE 11 : NUMBER OF NON-MEDICAL STAFF BY SECTORS

No of employees	Public		Private		Total	
	freq	percent	freq	percent	freq	percent
Less than 100	22	68.8	14	66.7	36	67.9
101 to 250 staff	5	15.6	5	23.8	10	18.9
251 to 400 staff	0	-	2	9.5	2	3.8
401 to 499 staff	1	3.1	0	-	1	1.9
More than 500	4	12.5	0	-	4	7.5
TOTAL	32		21		53	

TABLE 12 : HOSPITALS BUDGET BY BED SIZE

Budgets	25 to 50		51 to 100		101 to 200		201 to 400		>400		Total	
	freq	%	freq	%	freq	%	freq	%	freq	%	freq	%
< 1 million	9	29.0	2	3.6	0	-	0	-	0	-	11	8.5
1.1 to 5.0 mil	16	51.6	38	69.1	6	54.5	0	-	0	-	60	46.5
5.1 to 10.0 mil	6	19.4	14	25.5	5	45.5	3	16.7	0	-	28	21.7
10.1 to 50.0 mil	0	-	1	1.8	0	-	12	66.7	4	28.6	17	13.2
50.1 to 100.0 mil	0	-	0	-	0	-	3	16.7	10	71.4	13	10.1
> 100 million	0	-	0	-	0	-	0	-	0	-	0	
TOTAL	31		55		11		18		14		129	

TABLE 13 : HOSPITALS REVENUE BY BED SIZE

Budgets	25 to 50		51 to 100		101 to 200		201 to 400		>400		Total	
	freq	%	freq	%	freq	%	freq	%	freq	%	freq	%
< 1 million	6	20.0	42	50.0	9	52.9	6	42.9	0	-	63	39.1
1.1 to 5.0 mil	13	43.3	28	33.3	0	-	3	21.4	9	56.3	53	32.9
5.1 to 10.0 mil	10	33.3	2	2.4	1	5.9	1	7.1	4	25.0	18	11.2
10.1 to 50.0 mil	1	3.3	5	6.0	6	35.3	2	14.3	3	18.8	17	10.6
50.1 to 100.0 mil	0	-	7	8.3	1	5.9	2	14.3	0	-	10	6.2
> 100 million	0	-	0	-	0	-	0	-	0	-	0	-
TOTAL	30		84		17		14		16		161	

TABLE 14 : HOSPITALS EXPENDITURE BY BED SIZE

Budgets	25 to 50		51 to 100		101 to 200		201 to 400		>400		Total	
	freq	%	freq	%	freq	%	freq	%	freq	%	freq	%
< 1 million	13	39.4	1	1.6	1	5.3	0	-	0	-	15	10.5
1.1 to 5.0 mil	16	48.5	36	59.0	6	31.6	0	-	0	-	58	40.6
5.1 to 10.0 mil	3	9.1	16	26.2	7	36.8	3	17.6	0	-	29	20.3
10.1 to 50.0 mil	1	3.0	8	13.1	5	26.3	13	76.5	4	30.8	31	21.7
50.1 to 100.0 mil	0	-	0	-	0	-	1	5.9	9	69.2	10	7.0
> 100 million	0	-	0	-	0	-	0	-	0	-	0	-
TOTAL	33		61		19		17		13		143	

TABLE 15 : TYPES OF PERFORMANCE MEASUREMENT PRACTICES

Types of measurement	Yes		No		Don't know		Total	
	freq	percent	freq	percent	freq	percent	freq	percent
Financial	4	5.6	10	66.7	1	50.0	15	17.9
Non-financial	6	8.3	0	-	0	-	6	7.1
Mixture	62	86.1	0	-	1	50.0	63	75.0
TOTAL	72		10		2		84	

Table 16 : TYPES OF PERFORMANCE MEASUREMENT BY SECTORS

Types of PM	Public		Private		Total	
	freq	percent	freq	percent	freq	percent
Financial	2	3.6	13	44.8	15	17.9
Non-financial	5	9.1	1	3.4	6	7.1
Mixture	48	87.3	15	51.7	63	75.0
TOTAL	55		29		84	

TABLE 17 : FINANCIAL & NON-FINANCIAL MEASURES BY SECTORS

Breakdown	Financial		Non-financial		Total			
	Public	Private	Public	Private	Public	%	Private	%
0 percent	0	0	0	0	0	-	0	-
20 percent	1	4	8	0	9	8.9	4	9.1
40 percent	36	11	21	9	57	56.4	20	45.5
60 percent	7	0	19	4	26	25.7	4	9.1
80 percent	4	0	0	2	4	4.0	2	4.5
100 percent	3	1	2	13	5	5.0	14	31.8
TOTAL	51	16	50	28	101		44	

TABLE 18 : MEASUREMENT DOMAIN LEVEL OF IMPORTANCE

Domains		Level of Importance *					Mean
		1	2	3	4	5	
Patient Care Experience	freq	3	3	2	5	71	4.6
	%	3.6	3.6	2.4	6.0	84.5	
Effective Delivery of Care	freq	3	4	1	32	44	4.3
	%	3.6	4.8	1.2	38.1	52.4	
Efficiency of Operations	freq	2	26	12	11	33	3.6
	%	2.4	31.0	14.3	13.1	39.3	
Financial Stability	freq	25	5	8	13	32	3.3
	%	30.1	6.0	9.6	15.7	38.6	
Capacity Utilisation	freq	7	4	30	10	33	3.7
	%	8.3	4.8	35.7	11.9	39.3	

*1 : Least important 2 : Not so important 3 : Important 4 : Quite important 5 : Very important

TABLE 19 : MEASUREMENT DOMAINS RANKING BY SECTORS

Domains	Mean Value		Ranking		Total Mean
	Public	Private	Public	Private	
Patient Care Experience	4.6	4.7	1	1	4.6
Effective Delivery of Care	4.2	4.4	2	2	4.3
Efficiency of Operations	3.3	3.9	4	5	3.6
Financial Stability	2.8	4.1	5	3	3.3
Capacity Utilisation	3.5	4.0	3	4	3.7

TABLE 20 : REPORTING SCHEDULE BY PRACTICES

Reporting Schedule	Don't know		No		Yes	
	freq	percent	freq	percent	freq	percent
Daily	0	-	3	20.0	26	14.3
Weekly	0	-	1	6.7	23	12.6
Monthly	0	-	4	26.7	45	24.7
Quarterly	0	-	3	20.0	33	18.1
Bi-annually	0	-	0	-	16	8.8
Annually	1	100.0	2	13.3	39	21.4
Never measure	0	-	2	13.3	0	-
TOTAL	1		15		182	

TABLE 21 : RESPONSIBILITY CENTRES BY PRACTICES

Indicators	Financial		Non-financial		Mixture	
	freq	percent	freq	percent	freq	percent
Cost	9	23.7	4	11.4	57	21.0
Quality of service	4	10.5	6	17.1	39	14.3
Utilisation rate	7	18.4	8	22.9	45	16.5
Customer satisfaction	8	21.1	6	17.1	45	16.5
Service provision	1	2.6	3	8.6	18	6.6
Productivity	0	-	4	11.4	24	8.8
Volume of service	7	18.4	4	11.4	44	16.2
Others	2	5.3	0	-	0	-
TOTAL	38		35		272	

TABLE 22 : INDICATORS COLLECTION BY RESPONSIBILITY CENTRES

Indicators	Department		Position Committee		Others			
	freq	percent	freq	percent	freq	percent		
Cost	49	19.4	27	14.4	38	19.9	4	10.3
Quality of Service	35	13.9	28	15.0	25	13.1	7	17.9
Utilisation rate	50	19.8	22	11.8	38	19.9	5	12.8
Customer satisfaction	39	15.5	31	16.6	27	14.1	7	17.9
Service provision	18	7.1	12	6.4	12	6.3	5	12.8
Productivity	20	7.9	15	8.0	16	8.4	7	17.9
Volume of service	41	16.3	20	10.7	35	18.3	4	10.3
Others	0	-	2	1.1	0	-	0	-
TOTAL	252		187		191		39	

TABLE 23 : INDICATORS COLLECTION BY REPORTING SCHEDULE

Reporting Schedule *

Indicators	Reporting Schedule *						
	1	2	3	4	5	6	7
Cost	28(16.6)	24(14.2)	42(24.9)	30(17.8)	10(5.9)	35(20.7)	0
Quality of service	9(9.6)	5(5.3)	27(28.7)	15(16)	14(14.9)	24(25.5)	0
Utilisation rate	26(15.9)	24(14.6)	40(24.4)	30(18.3)	10(6.1)	34(20.7)	0
Customer satisfaction	9(9.3)	5(5.2)	26(26.8)	17(17.5)	15(15.5)	25(25.8)	0
Service provision	5(12.5)	2(5)	14(35)	5(12.5)	4(10)	10(25)	0
Productivity	5(9.8)	4(7.8)	15(29.4)	8(15.7)	7(13.7)	12(23.5)	0
Volume of service	26(17.3)	23(15.3)	36(24)	27(18)	6(4)	32(21.3)	0
Others	0	0	2(100)	0	0	0	0

*1 : Daily 2 : Weekly 3 : Monthly 4 : Quarterly 5 : Bi-annually 6 : Annually 7 : Never measure () shows percentage

TABLE 24 : INFORMATION COLLECTION BY PRACTICES

Collection methods	Don't know		No		Yes	
	freq	percent	freq	percent	freq	percent
Charts	1	14.3	2	8.7	25	8.2
Newsletter	1	14.3	2	8.7	25	8.2
Personalised letter	1	14.3	3	13.0	39	12.8
Meeting with manager	1	14.3	3	13.0	76	24.9
Computer-generated report	0	-	2	8.7	59	19.3
Find information yourself	1	14.3	3	13.0	30	9.8
Electronic mail	1	14.3	4	17.4	30	9.8
Notes/memo	1	14.3	3	13.0	16	5.2
Others	0	-	1	4.3	5	1.6
TOTAL	7		23		305	

TABLE 25 : REPORTING METHODS BY FUNDING

Collection Methods	Government		Investors		Earning		Donation		Others	
	freq	%	freq	%	freq	%	freq	%	freq	%
Charts	21	9.8	2	4.9	5	5.7	0	-	0	-
Newsletter	19	8.8	3	7.3	8	9.2	1	14.3	0	-
Personalised report	12	5.6	5	12.2	15	17.2	1	14.3	0	-
Meeting with managers	55	25.6	9	22.0	15	17.2	1	14.3	0	-
Computer-generated report	41	19.1	10	24.4	12	13.8	1	14.3	0	-
Find information yourself	22	10.2	5	12.2	12	13.8	1	14.3	0	-
Electronic mail	26	12.1	3	7.3	10	11.5	1	14.3	0	-
Notes/memo	12	5.6	4	9.8	9	10.3	1	14.3	0	-
Others	7	3.2	0	-	1	1.1	0	-	0	-
TOTAL	215		41		87		7		0	

TABLE 26 : INFORMATION COLLECTION BY REPORTING SCHEDULES

Collection Methods		Reporting Schedule *						
		1	2	3	4	5	6	7
Charts/figures on wall	freq	5	3	15	9	9	16	0
	%	8.8	5.3	26.3	15.8	15.8	28.1	
Newsletter	freq	4	5	12	13	9	15	0
	%	6.9	8.6	20.7	22.4	15.5	25.9	
Personalised report	freq	9	5	22	10	7	19	0
	%	12.5	6.9	30.6	13.9	9.7	26.4	
Meeting with managers	freq	28	24	45	33	16	41	0
	%	15.0	12.8	24.1	17.6	8.6	21.9	
Comp-generated report	freq	24	22	40	30	11	33	0
	%	15.0	13.8	25.0	18.8	6.9	20.6	
Find info yourself	freq	9	3	22	6	8	18	0
	%	13.6	4.5	33.3	9.1	12.1	27.3	
e-mail	freq	19	18	27	24	6	26	0
	%	15.8	15.0	22.5	20.0	5.0	21.7	
notes/memo	freq	9	6	15	7	4	12	0
	%	17.0	11.3	28.3	13.2	7.5	22.6	
others	freq	1	0	4	2	4	3	0
	%	7.1		28.6	14.3	28.6	21.4	

* 1-Daily 2-Weekly 3-Monthly 4-Quarterly 5-Bi-annually 6-Annually 7-Never measure

TABLE 27 : REASON FOR PMS BY SECTORS

Reasons	Public		Private		Total	
	freq	percent	freq	percent	freq	percent
Internal mgmt proposal	31	57.4	20	6.9	51	61.5
Elected members pressures	2	3.7	3	10.3	5	6.0
External audit committee	11	20.4	4	13.8	15	18.1
Mgmt review board	32	59.3	14	48.3	46	55.4
International audit committee	1	1.9	2	6.9	3	3.6
District audit	3	5.6	2	6.9	5	6.0
Others	10	18.5	6	20.7	16	19.3
TOTAL	54		29		83	

TABLE 28 : CHARACTERISTICS OF PERFORMANCE MEASUREMENT

Measurement should be		Level of Importance *					Mean
		1	2	3	4	5	
Involved people	freq	0	2	6	18	52	4.5
	%		2.6	7.7	23.1	66.7	
Linked to process	freq	0	0	6	21	51	4.6
	%			7.7	26.9	65.4	
Trigger improvement	freq	0	0	3	20	55	4.7
	%			3.8	25.6	70.5	
Linked to goal development	freq	0	0	3	25	50	4.6
	%			3.8	32.1	64.1	
Capture soft elements	freq	0	0	7	24	46	5.0
	%			9.0	30.8	59.0	
Relative not absolute	freq	0	3	12	24	39	4.3
	%		3.8	15.4	30.8	50.0	

* 1- Not very important 2-Not-so important 3-Important 4-Quite important 5-Very important

TABLE 29 : RESPONDENT INTENTION TO INTRODUCED PMS BY PRACTICES

Factors	Financial		Non-financial		Mixture	
	freq	percent	freq	percent	freq	percent
Yes	4	26.7	2	40.0	41	67.2
No	3	20.0	0	-	5	8.2
Don't know	8	53.3	3	60.0	15	24.6
TOTAL	15		5		61	

TABLE 30 : HOSPITALS COMPETITIVENESS

Domains		Level of Competition *							Mean
		1	2	3	4	5	6	7	
Patient care experience	freq	0	0	0	17	12	40	11	5.6
	%				21.3	15.0	50.0	13.8	
Effective delivery of care	freq	0	0	0	15	32	22	10	5.3
	%				19.0	40.5	27.8	12.7	
Efficiency in operations	freq	1	0	1	17	14	35	10	5.4
	%	1.3		1.3	21.8	17.9	44.9	12.8	
Financial stability	freq	0	1	5	33	8	22	11	5.0
	%		1.3	6.3	41.3	10.0	27.5	13.8	
Capacity utilisation	freq	1	1	5	22	25	18	7	4.9
	%	1.3	1.3	6.3	27.8	31.6	22.8	8.9	
Overall performance	freq	0	0	1	12	35	24	7	5.3
	%			1.3	15.2	44.3	30.4	8.9	

*1-Worse off 2-Quite worse off 3-Not-so-worse off 4-Neutral 5-Not-so better off 6-Quite better off 7-Better off

TABLE 31 : HOSPITAL ATTRIBUTES

Attributes		Level of Cosideration *					Mean
		1	2	3	4	5	
Services	freq	0	0	31	31	19	3.9
	%			38.3	38.3	23.5	
Technology	freq	6	7	44	18	6	3.1
	%	7.4	8.6	54.3	22.2	7.4	
Treatment	freq	0	2	33	31	15	3.7
	%		2.5	40.7	38.3	18.5	
Quality	freq	0	2	32	31	16	3.8
	%		2.5	39.5	38.3	19.8	

*1- Very low 2- Low 3- Medium 4- High 5- Very high

TABLE 32 : RESPONDENT SUPPORT OF PMS BY PRACTICES

<u>Factors</u>	<u>Financial</u>		<u>Non-financial</u>		<u>Mixture</u>	
	<u>freq</u>	<u>percent</u>	<u>freq</u>	<u>percent</u>	<u>freq</u>	<u>percent</u>
Completely supportive	3	20.0	4	66.7	13	20.6
Partially supportive	6	40.0	2	33.3	49	77.8
Completely unsupportive	2	13.3	0	-	0	-
Unrelated	4	26.7	0	-	1	1.6
TOTAL	15		6		63	

PRELIMINARY CASE STUDY

A. PERFORMANCE MEASUREMENT (PM) STRUCTURE

1. Does a formal system exist for the generation of performance goals?

Yes No

2. Does the system cover:

measures to be used/how to choose PMs

target to be set/or how to set targets

input to determine measures/targets

responsibility for PM

review procedures for PMS

3. Where is the system documented?

4. If documentation formal procedures do not exist, how is the PMS managed?

5. Do measurement exist for:

Departments teams

cross-functional teams individuals

6. Which of the following would you say best describe your hospital in terms of setting performance targets:

risk averse (set easily attainable target)

neutral (set moderately attainable target)

risk takers (sets challenging target)

7. What action are taken if performance fails to meet/exceeds target over the following timeframes:

daily

weekly

monthly	
annually	

8. Who is responsible for performance measurement at the process level:

<input type="checkbox"/> process owner	<input type="checkbox"/> higher management
<input type="checkbox"/> immediate superior of process owner	<input type="checkbox"/> third party (eg accountant)

9. Has your hospital identified and define processes?

Yes No

10. If yes, how have processes been identified and defined?

11. Has your hospital identified:

<input type="checkbox"/>	critical and non-critical processes
<input type="checkbox"/>	critical success factors
<input type="checkbox"/>	key performance measures
<input type="checkbox"/>	process input and output
<input type="checkbox"/>	process owners
<input type="checkbox"/>	process suppliers and customers

12. Where is these information documented?

13. Which of the following performance factors are measured?

	Daily	Weekly	Monthly	Quarterly	Annually
delivery performance	<input type="checkbox"/>				
customer satisfaction	<input type="checkbox"/>				
process time	<input type="checkbox"/>				
flexibility	<input type="checkbox"/>				
quality performance	<input type="checkbox"/>				

financial performance	<input type="checkbox"/>				
social issues	<input type="checkbox"/>				
productivity	<input type="checkbox"/>				
innovation	<input type="checkbox"/>				
employee development	<input type="checkbox"/>				
others	<input type="checkbox"/>				

please specify:

14. Do formal procedures exists for:

- data collection
- data processing
- data presentation

15. How is performance data collected, and where is it held?

	collected	held
central computer system	<input type="checkbox"/>	<input type="checkbox"/>
central manual system	<input type="checkbox"/>	<input type="checkbox"/>
various computer system	<input type="checkbox"/>	<input type="checkbox"/>
various manual system	<input type="checkbox"/>	<input type="checkbox"/>

16. In what format(s) is performance data presented (ie numeric/graphical, include actual, target and historical performance)?

17. How is data integrity, validity, accuracy and reliability ensured?

A. PURPOSE OF PERFORMANCE MEASUREMENT

1. Who in your opinion does/should benefit from improved performance from your department

	Intended	Actual
overall hospital	<input type="checkbox"/>	<input type="checkbox"/>
department	<input type="checkbox"/>	<input type="checkbox"/>
employees	<input type="checkbox"/>	<input type="checkbox"/>
customers/patient	<input type="checkbox"/>	<input type="checkbox"/>

2. Which of the following methods are used to set performance goals

<input type="checkbox"/>	hospital standard	<input type="checkbox"/>	last year + 5%
<input type="checkbox"/>	based on industry best performance	<input type="checkbox"/>	based on learning curve
<input type="checkbox"/>	based on customer requirement	<input type="checkbox"/>	others
<input type="checkbox"/>	based on known process capability	_____	

3. Which of the following systems which may impact performance measurement are used within your hospital?

quality system (ISO9000)	<input type="checkbox"/>	Financial control system	<input type="checkbox"/>
planning & control system (eg MRP, JIT)	<input type="checkbox"/>	Quality costing	<input type="checkbox"/>
		Other system (specify)	<input type="checkbox"/>

4. How are customer requirement determined?

5. Is information on your performance

fed back directly by customer	<input type="checkbox"/>
fed forward directly to customer	<input type="checkbox"/>
Both of the above	<input type="checkbox"/>
No feedback	<input type="checkbox"/>

6. Would you say that end customer and hospital performance goals conflict (not including cost/price)

Regularly	<input type="text"/>	almost never	<input type="text"/>
Sometimes	<input type="text"/>	never	<input type="text"/>
Infrequently	<input type="text"/>		

7. If yes, in what areas do conflict of interest arise?

8. Are customers formally surveyed as to:

their current level of satisfaction	<input type="text"/>	Others	<input type="text"/>
areas of improvement	<input type="text"/>	<i>please specify:</i>	
performance relative to competitors	<input type="text"/>		

9. How is your customer satisfaction measured?

10. Do you ever formally survey:

potential customers	<input type="text"/>
ex-customers	<input type="text"/>

12 Which external actors influence performance measures within your hospital (eg regulators)

11. Over which dimension is performance measured for these external actors (eg environmental monitoring)

12. Is information on performance:

<input type="text"/>	fed back directly by the external actors
----------------------	--

- fed forward directly by the company
- both of the above
- not fed back

13. How is this data used to improve performance?

C PROCESS MANAGEMENT

1. Which of the following aspects of your hospital activities has your hospital defined and documented?

	Defined & Documented	planned	no planned
core business processes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
critical & non-critical subprocesses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
process owners	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
process suppliers and customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
customer requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
measurement points	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
key performance indicators (measures)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
measurement frequency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
performance targets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
feedback & reporting relationships	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Which, if any, of the following measures of performance are used within your hospital?

	Used	planned	unplanned
a. Measurement of customer satisfaction			
• Customer surveys	1	2	3
• Customer complaint	1	2	3
• Customer retention	1	2	3
b. Measurement of employee factors			
• Employee surveys	1	2	3
• Employee turnover	1	2	3
• Employee training/education	1	2	3
• Staff skill mix	1	2	3

c. Measurement of quality			
• Conformance to specification	1	2	3
• Percentage/level of defects	1	2	3
• Cost of quality	1	2	3
• Waste rate	1	2	3
• Process capability	1	2	3
d. Measurement of productivity			
• Sales/output per employee	1	2	3
• Cost per employee	1	2	3
• Revenue per employee	1	2	3
• Return on assets	1	2	3
• Labour efficiency	1	2	3
• Total factor productivity	1	2	3
• Capacity utilisation	1	2	3
e. Measurement of time-based performance			
• Process cycle time	1	2	3
• Inventory turnover	1	2	3
• On-time delivery	1	2	3
• Customer processing time	1	2	3
• Customer response time	1	2	3
• Delivery lead time	1	2	3
f. Measurement of flexibility			
• Service mix flexibility	1	2	3
• Volume output flexibility	1	2	3
g. Measurement of environmental/social factors			
• Public opinion survey	1	2	3
• Environmental monitoring (processes)	1	2	3
h. Measurement of shareholders'			
• Cashflow from operations	1	2	3
• Earnings per share	1	2	3
• Gross profit dollars & percent	1	2	3
• Net profit dollars & percent	1	2	3
• Operating income dollars & percent	1	2	3
• Performance to budget	1	2	3
• Return on equity	1	2	3
• Return on total asset	1	2	3

D EVALUATION OF CURRENT PERFORMANCE

I Quality of Information in the Measurement

1. Are measurements defined and reported consistently among different business units?
(Are they of high quality?) (1-very inconsistent 3- somewhat consistent 5- very consistent)
Explain:

2. Is the measurement set too large? (1-appropriate number of measures 3- a few too many measure 5- clearly, too large)

Explain:

3. Are measurements results difficult to interpret?
(1-results are always ambiguous 3- results are sometimes usable 5- results are always usable)

Explain:

II. Timeliness of Measurement

1. Is the information reported frequently enough?
(1- very infrequent 3- some are reported frequently enough 5- appropriate frequency)

Explain:

2. How timely is the information provided by the measurement set?
(1- consistently later than desired 3- somewhat available when desired 5- almost always available when needed)

Explain:

3. How timely measurement reviews and discussions?
(1- very specific reviews 3- somewhat consistent timing of reviews 5- always consistent timing)

Explain:

III. Relevancy/Usage of Measurement

1. Do the current measurements reflect current business/operational conditions?
(1- seldom reflect current conditions 3- sometimes reflect current conditions 5- fairly well reflect)

Explain:

2. Are there goals for most measurements?
(1-seldom 3- sometimes 5 often)

Explain:

3. Is external benchmarking information used to establish measurement goals?
 (1-rarely used 3- sometimes used 5- often used)
 Explain:

IV Dimensions of Measurement

1. Of the following measurement dimensions, which are most stressed at present?
 (1- infrequently stressed 3- sometimes stressed 5- always stressed)

1	2	3	4	5	patient care experience
1	2	3	4	5	effective delivery of care
1	2	3	4	5	efficiency in operations
1	2	3	4	5	financial stability
1	2	3	4	5	capacity utilization

2. Of the following measurement dimensions which are the most important for hospital's long-term success? (1- not very important 3- somewhat important 5- extremely important)

1	2	3	4	5	patient care experience
1	2	3	4	5	effective delivery of care
1	2	3	4	5	efficiency in operations
1	2	3	4	5	financial stability
1	2	3	4	5	capacity utilization

3. What measurements would you add to the following dimensions: (briefly describe)

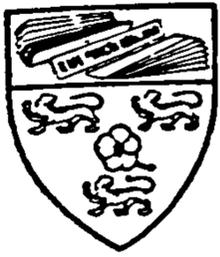
a. Patient Care Experience

b. Effective Delivery of Care

c. Efficiency of Operations

d. Financial Stability

e. Capacity Utilisation



26th October 2000

Dear Dr. Ngee,

SURVEY ON PERFORMANCE MEASUREMENT SYSTEMS

Health care sector in Malaysia is undergoing major changes to meet the growing needs of its citizen for better quality services. The objective of this survey is to map out business processes in hospital in order to fully understand the nature of measuring performance. The first step to improve hospital operations is to measure processes.

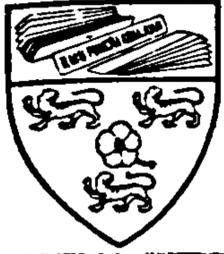
The survey requires your *personal* input on the understanding of performance measurement in your capacity as administrator in your hospital. Please read through the survey, it has 45 questions and it takes about 30-45 minutes of your time.

Your response is very important to get an aggregate score of performance in hospitals. This score will give a signal to the Ministry of Health regarding practices of a sound management system. Your response, thus will enable us to analyse strategic implications of current practices in Malaysia. Hopefully, ensure a more focus policy in the future.

Please be rest assured that your response will be held in the strictest confidence. Data collected will be analysed to produce the aggregate statistics for the study. No individual respondent will be identified. We would, therefore, greatly appreciated if you could ~~spare some time from your busy work schedule to complete the questionnaire. Thank~~ you very much.

Yours sincerely,

ABDUL RAZAK IBRAHIM
Lecturer



UNIVERSITI MALAYA

Fakulti Perniagaan dan Perakaunan
50603 Kuala Lumpur

Faculty of Business and Accountancy
50603 Kuala Lumpur, MALAYSIA

481

Tel: (603) 759 3974/5
Fax: (603) 759 3980

To: Hospital's Director
All Private Hospitals

From: Abdul Razak Ibrahim
Lecturer
University of Malaya

Fax: 03-7959-3980

Date: 15th January 2001

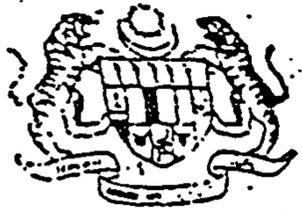
HEALTH CARE STUDY

With reference to the subject matter.

We would like to thank you for your cooperation in responding to the survey. If you have not sent the questionnaire yet, we would appreciate if you could return the self-addressed survey at your earliest convenience.

For your information, our interim report must be compiled by February 5th 2001. Though we have encouraging response so far, we are obligated to provide feedback to the Ministry of Health of our progress. The Ministry has requested us to report the number of organizations that do not participate in the survey.

Your cooperation on making this project a success is very much appreciated. If there are any enquiries, I can be reach at (office) 7959-3871 or fax 7959-3980. Thank you.



BAHAGIAN AMALAN PERUBATAN,
MEDICAL PRACTICES DIVISION,
KEMENTERIAN KESIHATAN MALAYSIA,
MINISTRY OF HEALTH MALAYSIA,
JALAN CENDERASARI,
50590 KUALA LUMPUR, MALAYSIA.

Telefon : 03 - 2985077
Kawat : MINHEALTH, KUALA LUMPUR
Telek : MA 18102
Fax : 03 - 2934933

482

Ruj. Tuan :

Ruj. Kami : (22) dlm. KKM-87 (A/7/1)

Tarikh :

Jld.4

3 Oktober 2000

Encik Abdul Razak Ibrahim
Pensyarah
Fakulti Perniagaan & Perakaunan
Universiti Malaya
50603 Kuala Lumpur

Tuan,

**MEMOHON KEBENARAN MEMBUAT KAJIAN DAN MENDAPATKAN
MAKLUMAT BAGI DISERTASI BERTAJUK "AN INTEGRATED
MEASUREMENT SYSTEM OF HEALTH CARE SERVICES: AN EMPIRICAL
STUDY OF PUBLIC AND PRIVATE HOSPITALS IN MALAYSIA"**

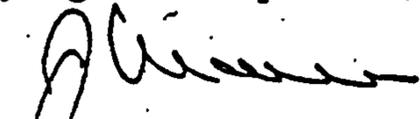
Adalah saya dengan hormatnya merujuk kepada surat tuan bertarikh 17 Ogos 2000 dan perjumpaan tuan dengan saya pada 30 september 2000

2. Permohonan tuan untuk menjalankan kajian di hospital-hospital kerajaan dan swasta adalah diluluskan.
3. Sepertimana yang telah dibincangkan hasil kajian ini tidak boleh diterbitkan tanpa kelulusan Bahagian ini. Bahagian ini juga memerlukan salinan hasil kajian apabila siap.

Sekian, terima kasih.

**"KESIHATAN SEPANJANG HAYAT"
"KUALITI SEPANJANG MASA"**

Saya yang menurut perintah,


(DR. T. MAHADEVAN)
Pengarah Amalan Perubatan
Bahagian Amalan Perubatan
b.p Ketua Pengarah Kesihatan Malaysia
Kementerian Kesihatan Malaysia

Sk

Timbalan Ketua Pengarah Kesihatan (Perubatan)

HEALTH CARE STUDY



UNIVERSITI MALAYA



UNIVERSITY OF
STRATHCLYDE

YEAR 2000

Name: *ABDUL RAZAK IBRAHIM*
Telephone: 03-7959-3871
Facsimile: 03-7959-3980
e-mail : g5razak@umcsd.um.edu.my

YOUR COOPERATION ON THIS SURVEY IS VERY MUCH APPRECIATED. PLEASE REST ASSURED THAT YOUR RESPONSE WILL BE TREATED WITH STRICT CONFIDENTIALITY.

SECTION A: ORGANISATION PROFILE

1. Hospital name:

2. Designation of contact person:

3. Years of contact person hold current designation:

4. Years the hospital has been in operations

5. Number of beds: less than 25 beds 101 – 200 beds
 25-50 beds 200 - 400 beds
 51- 100 beds more than 400 beds

6. Public Private Mixed/Semi

7. Total number of employees:

Employees categories:

8. Number of specialist doctors Internal: External: consultant

9. Number of general practitioners

10. Number of nurses RN: Non-RN:

11. Number of non-medical personnel Exec: Non-exec:

Financial information:

12. To the best of your knowledge, what is your hospital's estimated:

	(In millions)		
	1999	1998	1997
Budget.....	<input type="text"/>	<input type="text"/>	<input type="text"/>
Revenue....	<input type="text"/>	<input type="text"/>	<input type="text"/>
Expenses...	<input type="text"/>	<input type="text"/>	<input type="text"/>

13. How does your hospital fund its operation:

Government Contribution/Donations
 Investors Others..please specify _____
 Earnings _____

SECTION B: FACTORS THAT INFLUENCE SUCCESS

14. We would like to know the current status of your hospital in terms of the following variables. These are the variables that will determine success. In your opinion, how do you rate your hospital on the following: *(Please circle the appropriate scale)*

	<i>Disagree</i>			<i>Agree</i>	
	1	2	3	4	5
• Patients are satisfied with medical and support services	1	2	3	4	5
• Patients perceived services of highest quality & integrity	1	2	3	4	5
• Personnel are friendly and courteous	1	2	3	4	5
• Waiting time, in general, are low	1	2	3	4	5
• Complaint from staff are high	1	2	3	4	5
• Complaint from patient are low	1	2	3	4	5
• Complication rate during surgery is low	1	2	3	4	5
• Complication rate after surgery is high	1	2	3	4	5
• Mortality rate in general are high	1	2	3	4	5
• Readmission rate in general is high	1	2	3	4	5
• Total cost per case is low	1	2	3	4	5
• Surgery rate is high	1	2	3	4	5
• Length of stay in general is high	1	2	3	4	5
• Patient cost per day is low	1	2	3	4	5
• Outpatient size is large	1	2	3	4	5
• Information system usage is extensive	1	2	3	4	5
• Communication between functions is distorted	1	2	3	4	5
• Asset that can be converted to cash quickly (liquidity) is high	1	2	3	4	5
• Income earned after deducting expenses (profitability) is low	1	2	3	4	5
• Revenue generated from operations is high	1	2	3	4	5
• Cost incurred in operations is high	1	2	3	4	5
• Productivity (return on total assets) in general is low	1	2	3	4	5
• Productivity (efficiency & effectiveness) from operations is high	1	2	3	4	5
• Occupancy rate is high	1	2	3	4	5
• Equipment is just lying idle	1	2	3	4	5
• Workforce is not fully utilised	1	2	3	4	5
• Facilities is not fully utilized	1	2	3	4	5
• Inventory is manageable (little wastage)	1	2	3	4	5

SECTION C: PERFORMANCE MEASUREMENT SYSTEM

In this section, we would like to know how you managed your hospital operations, specifically on controlling and monitoring activities.

15. Do you have a performance measurement system in your hospital?

Yes No Don't know

16. If yes, for how long has the hospital practiced it. (years)?

17. The performance measurements focus on:

financial	<input type="checkbox"/>		
Non-financial	<input type="checkbox"/>		
mixture	<input type="checkbox"/>	financial(%) <input type="text"/>	non-financial(%) <input type="text"/>

Please turn to next page▶

18. From the descriptions below rank, from least important (1) to very important (5), your hospital's current priority.

Your hospital believes in servicing patients with care and respect.
(patient care experience)

Your hospital delivers care with integrity to ensure patients' comfort
(effective delivery of care)

Your hospital makes sure that the best service is provided with the lowest cost
(efficiency in operations)

Your hospital will ensure its operations is financially viable
(financial stability)

Your hospital is committed to employing workforce, facilities and equipment to the fullest.
(capacity utilization)

19. To what extent has your hospital implemented the following: *(Circle the appropriate scale)*

	Implementation (%)				
	0	25	50	75	100
patient care experience	1	2	3	4	5
effective delivery of care	1	2	3	4	5
efficiency of operations	1	2	3	4	5
financial stability	1	2	3	4	5
capacity utilization	1	2	3	4	5

20. How much emphasis does your hospital place on each factor? *(you may tick more than one)*

	low emphasis		high emphasis		
	1	2	3	4	5
Quality	1	2	3	4	5
Customer satisfaction	1	2	3	4	5
Financial performance	1	2	3	4	5
Employees productivity	1	2	3	4	5
Delivery performance	1	2	3	4	5
Flexibility	1	2	3	4	5
Innovation	1	2	3	4	5
Others..... <i>please specify</i>	1	2	3	4	5

21 Have you heard about any of these measurement models before?

(You may tick more than one)

- | | |
|--|--|
| <input type="checkbox"/> Balance scorecard | <input type="checkbox"/> Integrated measurement reference system |
| <input type="checkbox"/> Performance pyramid | <input type="checkbox"/> PMS design process |
| <input type="checkbox"/> Performance criteria system | <input type="checkbox"/> Others.. <i>please specify</i> _____ |

22. How often performance is measured in your hospital? (You may tick more than one) Page: 487

- daily monthly bi-annually never measure
 weekly quarterly annually

23. Who is responsible for measuring? (You may tick more than one)

<input type="checkbox"/> Department	which department:
<input type="checkbox"/> Position	which position:
<input type="checkbox"/> Committee	which committee:
<input type="checkbox"/> Others	specify:

24. What type of performance indicators are collected by your hospital? (You may tick more than one)

- Cost indicators Service provision indicator
 Quality of service indicator Productivity indicators
 Utilization rate Volume of service indicators
 Customer satisfaction indicator Others..please specify _____

25. By what methods do you currently receive information? (You may tick more than one)

Charts/figures on wall	<input type="checkbox"/>	Computer-generated report	<input type="checkbox"/>
Newsletter	<input type="checkbox"/>	Find information yourself	<input type="checkbox"/>
Personalised report	<input type="checkbox"/>	electronic-mail	<input type="checkbox"/>
Meeting with managers	<input type="checkbox"/>	notes/memo	<input type="checkbox"/>
Other methods..please specify	<input type="checkbox"/>	_____	

26. How do you rate the methods you receive information? (Please circle the appropriate scale)

	highly ineffective			highly effective	
Charts/figures on wall	1	2	3	4	5
Newsletter	1	2	3	4	5
Personalised report	1	2	3	4	5
Meeting with managers	1	2	3	4	5
Computer-generated report	1	2	3	4	5
Find information yourself	1	2	3	4	5
Other methods	1	2	3	4	5

27. Why was performance measurement introduced into your hospital, if applicable Page: 488

(You may tick more than one)

- | | |
|--|--|
| <input type="checkbox"/> Internal management proposal | <input type="checkbox"/> Management review board |
| <input type="checkbox"/> Elected members pressures | <input type="checkbox"/> International audit committee |
| <input type="checkbox"/> External Audit committee | <input type="checkbox"/> District audit |
| <input type="checkbox"/> Others <i>please specify:</i> _____ | |

28. Why do you think performance measurement will not work in your hospital, if applicable? (You may tick more than one)

- | | |
|--|---|
| <input type="checkbox"/> Time to explore data | <input type="checkbox"/> Poor style of presentation |
| <input type="checkbox"/> Shortage of specialist staff | <input type="checkbox"/> Interpretation |
| <input type="checkbox"/> Access to data | <input type="checkbox"/> Confidence |
| <input type="checkbox"/> Others.. <i>please specify:</i> _____ | |

29. Why do you think your hospital uses performance measurement indicators ?

(you may tick more than one)

- | | | | |
|---|--------------------------|-------------------------------|--------------------------|
| identify problem areas for management attention | <input type="checkbox"/> | planning | <input type="checkbox"/> |
| service quality issues (improvement) | <input type="checkbox"/> | budget planning | <input type="checkbox"/> |
| reallocating work | <input type="checkbox"/> | manpower planning | <input type="checkbox"/> |
| reallocating resources between service | <input type="checkbox"/> | cost control | <input type="checkbox"/> |
| level of service provision | <input type="checkbox"/> | target setting | <input type="checkbox"/> |
| as input to support a bid for resources | <input type="checkbox"/> | others <i>please specify:</i> | <input type="checkbox"/> |

30. Are you satisfied with the way performance measurement is used in your hospital?

(Please circle the appropriate scale)

	<i>definitely not satisfied</i>			<i>definitely satisfied</i>	
	1	2	3	4	5
• clarifying organizational objectives	1	2	3	4	5
• monitoring & controlling progress against plan	1	2	3	4	5
• justifying the use of resources	1	2	3	4	5
• providing a basis for calculating rewards and incentives	1	2	3	4	5
• setting standards	1	2	3	4	5
• indicating areas of potential cost savings	1	2	3	4	5
• improving the quality of inputs	1	2	3	4	5
• improving the quality of outputs	1	2	3	4	5
• determining the value for money is being obtained	1	2	3	4	5
• raising staff and management consciousness about efficiency, effectiveness and efficacy.	1	2	3	4	5

31. What facilitates the development of effective performance measurement system in your hospital? (you may tick more than one)

- Identify 'vital few' measures
- Top management commitment
- Involved people in measurement (ownership)
- Stakeholder pressure
- Have a system of measurement
- Others.. please specify: _____

32. What inhibit the development of an effective performance measurement system in your hospital? (you may tick more than one)

- Blame culture (as a stick to punish)
- Lack of process understanding
- No feedback of performance
- Measures too complex
- Inherited system ('inertia')
- Others.. Please specify: _____

33. How important do you think the following considerations are, when applied to performance measurement?

	<i>not very</i>			<i>very</i>	
	<i>important</i>			<i>important</i>	
	1	2	3	4	5
• People should be involved in the design of measurement	1	2	3	4	5
• Measurement should be linked to the process	1	2	3	4	5
• Measurement should trigger improvement	1	2	3	4	5
• Measurement should be linked to goal development	1	2	3	4	5
• Measurement should capture the 'soft' element of operations (eg employee satisfaction)	1	2	3	4	5
• Measurement should be relative not absolute	1	2	3	4	5

SECTION D : CONCLUSION

34. What weaknesses do you perceive in your hospital's performance measurement systems? *(List in order of importance)*

1.	
2.	
3.	

35. What major strengths do you perceive in your hospital's performance measurement systems? *(List in order of importance)*

1.	
2.	
3.	

36. Do you have any suggestions about the way performance should be measured?

37. Do you intend to introduced an improved/new measurement system in the near future?

Yes
 No
 Don't know

38. What are your major concerns if the current measurement system is not improved?

39. How do you compare, in general, your hospital to the competitors on the following factors? [If your hospital is a private hospital, please compare with other private hospitals] (Please circle the appropriate scale)

	worse off	neutral			better off	
Patient care experience.....	1	2	3	4	5	6 7
Effective delivery of care	1	2	3	4	5	6 7
Efficiency in operations.....	1	2	3	4	5	6 7
Financial stability.....	1	2	3	4	5	6 7
Capacity utilization.....	1	2	3	4	5	6 7

Overall performance..... 1 2 3 4 5 6 7

40. From your experience and knowledge, how do you consider your hospital in terms of:

	<i>low</i>	<i>medium</i>	<i>high</i>
Services	1	2	3
Technology.....	1	2	3
Treatment.....	1	2	3
Quality	1	2	3

41. List three competitors that you believe are better off than your hospital currently?

1.

2.

3.

42. Why do you think your competitors are better than your hospital?

42. What do you think are the characteristics that *hospital of the future* should have in order to compete on *better managed care* for the Malaysian population?

43. Overall, would you say that performance measurement system in your hospital support organizational objectives:

<input type="checkbox"/>	completely supportive	<input type="checkbox"/>	completely unsupportive
<input type="checkbox"/>	partially supportive	<input type="checkbox"/>	unrelated

44. This is the end of the survey. Please verify that all questions are answered. Please use the box below for any additional comments you may have or would like the researcher to analyse.

Thank you for your cooperation
Please return the questionnaires via the enclosed prepaid envelope