

24. Among the registered nurses, 65 percent are employed by the MOHP general hospitals and PHC centers, 15 percent by the HIO hospitals, 12 percent by university hospitals, three percent by teaching hospitals, one percent by the CCO, and four percent by other institutions. The majority of nurses both in hospitals and PHC centers are STN. For example in Suez General Hospital, which had 540 beds with 30 percent occupancy, the posted nurses were nine BSN, five TN, 10 STN with Specialty Diploma, 247 STN, 47 male STN, and two part time nurses. Dar el Shefa Hospital in Cairo, which had 125 beds with 90 percent occupancy, had 25 BSN, 11 TN, four STN with Specialty Diploma, and 157 STN. Midwives usually work in the PHC centers or maternal and child health (MCH) centers, but do not work in delivery rooms or obstetric wards of hospitals, as most deliveries are attended by physicians who are mostly males.

25. About 10 to 20 top level graduates of Faculty of Nursing will be hired as clinical instructors of their Universities. Faculty of Nursing of a university can only hire the newly graduates of the same university, but cannot hire outside mid-career professionals, nor fire existing faculty members. After two years, the clinical instructors usually study in the master course, and then in the doctor course. Table 5 shows the numbers and degrees of faculty members in Cairo University and Ain Shams University. Junior faculties are willing to participate in research collaborations and teaching activities outside their universities, as this will contribute to their promotion.

**Table 5: Number of University Faculty Members**

Faculty Members	Degrees	Cairo University	Ain Shams University
Professor	Doctor	14	13
Associate Professor	Doctor	7	25
Lecturer	Doctor	16	67
Assistant Lecturer	Master	33	40
Clinical Instructor	BSN	48	40
Total		118	185 (about 60 on leave)

(Source: Faculties of Nursing, Cairo University and Ain Shams University)

26. The salary scales of public employees are fixed regardless of specialties and professional backgrounds, e.g., the monthly base salary of the graduates of universities is LE 125 and that of technical institutes is LE 45, regardless of their graduated faculties and qualifications. Benefits can be added as incentives, however, they are also in very low levels for nurses: e.g., LE 1 for a night shift, LE 3 for meals, and LE 2.5 for disease prevention. A BSN receives about LE 250 to 300 per month and an STN receives about LE 150 to 200 per month, net of tax, while a physician receives about LE 500 per month. This level of salary can cover only 10 to 30 percent of minimum monthly household expense.

27. Nurses in hospitals usually work in three shifts: 8:00-14:00; 14:00-20:00; and 20:00-8:00. Nurses in PHC centers work in the morning and afternoon shifts, but do not work at night. In addition, many PHC centers have donor assisted programs which provide with some incentives. Thus, PHC center positions are often more popular than hospital positions, and therefore many BSN work there. The MOHP decided to ban the assignment of BSN to PHC centers in 2007, so that they can be deployed to hospitals.

28. Female nurses can take full paid 15 days leave for marriage and three months for maternity. Then, they can take unpaid leaves up to two years for each child, or up to six years in total. They can also take unpaid leaves up to 10 years to accompany their husbands who work abroad. They can keep their graded positions during the long leaves. Employers can hire substitutes only at part-time contract basis, but are not allowed to hire anyone for the permanent positions even though the posted employees take very long leaves. However, nurses often quit jobs when they get married or give birth, mainly because their husbands, who usually work from 8:00 to 14:00, do not agree that their wives work in the three shifts.

29. Quite a few nurses are absent from their work. For example in Suez General Hospital, only 128 nurses out of total 320 posted attend on work. Most of the rest are absent for a while for working in private hospitals that pay nurses about LE 800 per month, and about 10 percent of absentees are taking long leaves. The number of posts in a hospital is usually decided by bed numbers, specialties, etc., even though the bed occupancy rate of the hospital is very low. In case of Suez General Hospital, only three patients were admitted in the 12 bed surgical ward. There were four nurses during the morning shift and two nurses each in the afternoon and night shifts. Both the supervisor and a patient were satisfied with the care provided by the nurses.

#### **4. Strategy and Commitment for Strengthening Nursing Education**

30. The Central Nursing Administration of the MOHP has prepared a strategic plan from 2007 to 2012 to upgrade and strengthen nursing education in Egypt. Under the plan, nursing education will be harmonized across institutions, curricula will be standard-based and accreditation mechanisms of nurses will be installed. The MOHP intends to upgrade STN, because they are not adequately trained and less regarded in the society. The strategy consists of the followings:

31. (1) Abolishing STN: Only two levels, *i.e.*, BSN and TN, will be retained instead of the existing three, thus 12 years of secondary school level education should be prerequisite for admission.

- In 2007, among the existing 200 STNS affiliated to the MOHP, 20 in six governorates (Alexandria, Cairo/Giza, Menia, Ismailia, Qaliubiya, and Sharkeia) are upgraded to become Technical Institutes. Faculty members of universities will participate in teaching and supervising the upgrading courses.
- The graduates of the pilot 20 STNS learn English intensively for six weeks in the newly started Bridging Course, and then will study for two more years to be the same level as the graduates of the Technical Institutes.
- In 2008, another 140 STNS will be upgraded to become Technical Institutes, after rationalized by merging and closing small schools.
- In 2009, the upgraded 160 STNS, the six week Bridging Course and two year upgrading courses will be evaluated. Then, the following issues will be decided: (a) to allow only secondary school graduates to enroll the Technical Institutes, or to keep the two year course after STNS (*i.e.*, five year nursing education after basic education); (b) to rationalize and upgrade all the rest of STNS, or to keep some of them.

32. (2) Improving quality of nursing education: The curricula will be upgraded, and accreditation and re-licensing mechanisms will be installed.

- In 2007, the MOHP has contracted with Northumbria University in the United Kingdom to improve quality of nursing education. The consultancy contract includes: (a) developing a strategic plan to improve quality and status of nurses; (b) preparing education materials in English for STNS teachers, the Bridging Course, and the upgrading course; (c) supervising training courses of teachers and other upgrading courses; (d) establishing Faculty of Nursing and a pilot Nursing Academy for continuing education in collaboration with Beni Suef University; and (d) developing the plan and curricula of training courses of the proposed Nursing Academies.
- In 2007, teachers training and STN upgrading courses in English are started.
- In 2007, the Nursing Supreme Committee accepted to establish the National Nursing Council, which is expected to play a role of accreditation and licensing of nurses. The members of the Council have not been chosen yet.
- Up to 2007, Quality and Performance Improvement teams have been established both in the MOHP and hospitals.

- After 2008, the mechanisms of accreditation of quality of nursing services, and re-licensing nurses every five years will be installed. The proposed Nursing Academy will play a role of accreditation and re-licensing.

33. (3) Deploying nurses properly: Nurses will be distributed properly between urban and rural areas, and hospitals and PHC centers.

- In 2007, benefits will be increased for incentives of nurses, although the base salary will be unchanged. For example, the increase of benefits will be: from LE 1 to LE 25 to 40 for a night shift; from LE 3 to LE 15 for meals; and from LE 2.5 to LE 10 for infection prevention.
- In 2007, a computer matching system will be started for deploying nurses.
- In 2006, BSN deployment to PHC centers was banned.

34. (4) Establishing Nursing Academies: It is proposed to build two Nursing Academies in Lower Egypt and one in Upper Egypt, in addition to the pilot Nursing Academy at Beni Suef University and the National Training Institute in Cairo. The Nursing Academies are expected to play roles of continuing education and accreditation of nurses and nursing training of unemployed graduates of other faculties.

- Providing nurses in-service with various short term specialty training;
- Accrediting and re-licensing of nurses;
- Providing science field university graduates with nursing education;
- Providing non-science field university graduates with medical administration training.

A part of running costs will be covered by the tuitions. Most of their instructors will be seconded from universities.

35. The MOHP expects the following support from the World Bank.

- Upgrade facilities and equipment of the new Technical Institutes converted from STNS: 20 STNS in 2007, and 140 in 2008.
- Rehabilitate and upgrade facilities and equipment of the existing 12 Technical Institutes.
- Evaluate the process of upgrading STNS to develop the next step strategies
- Review the curriculum of the Technical Institutes.
- Establish three Nursing Academies: one in Upper Egypt and two in Lower Egypt.

## **5. Activities of Other Donor Agencies**

36. Currently few bilateral donors implement nursing education and training programs. Spain runs a health program entitled "Strengthening of Health Sector in Giza Governorate," which has a component of in-service clinical training of nurses in Giza. The three year project will be closed in December, 2007. USAID used to run "Health Workforce Development (HWD) Project," which aimed to improve nursing education and training, but the project was closed in June, 2006. Japan has assisted to establish Cairo University Faculty of Nursing, providing both the infrastructure and technical assistance. Japan also provided in-service training of Egyptian and African nurses in collaboration with the MOHP, and will start a new training course of African nurses in collaboration with Cairo University Faculty of Nursing.

## **III. STRENGTHS AND CHALLENGES**

### **1. The Rationale of the MOHP Strategy**

37. The overall direction of the MOHP strategy is appropriate to improve and strengthen nursing education; *i.e.*, to upgrade STN to the level of TN, and to establish accreditation mechanisms. The MOHP commit to implement the reform, and has started the first several steps of the strategy. As shown

in Appendix 3, about 90 percent of STNS are under the control of the MOHP, thus they can be rationalized and upgraded as intended by the MOHP. In addition, it would be feasible to educate all nurses after completing the secondary school education, since girls' secondary school enrollment rates are adequately high in most governorates, as shown in Appendix 2.

38. Improving quality of nursing education will require simultaneous efforts in various aspects, such as improvement of school infrastructure, capacity of teachers, curricula and teaching materials, and quality of primary and secondary education. The MOHP has started to train teachers and to develop teaching materials in English in collaboration with Northumbria University. Coordination with other ministries is also required, as responsibilities over universities, Technical Institutes, and the rest of STNS are shared among different ministries including the Ministry of Higher Education, and basic education is the responsibilities of the Ministry of Education. The collaboration with universities is working well. The MOHP counts on universities for dispatching their faculty members to instruct and coordinate the new upgrading courses.

## **2. Gaps and Challenges**

39. Strengthening nursing education alone will not be sufficient to improve quality of health care in Egypt, and a broader strategy to reform human resource management and health service delivery systems will be required. Such a strategy should include a health workforce deployment plan at national and governorates levels, policy reforms defining adequate incentives for skilled health professionals to stay in the public sector and to accept posts in relatively remote areas, accreditation and evaluation mechanisms of health professionals, an analysis of the required skill mix for both the public and private sectors, and rationalization and quality improvement of public health facilities. The strategy also needs to be ensured in terms of financial feasibilities and sustainability, and political commitment.

40. It should be a priority to improve knowledge, skills and motivation of the existing STN, who are the majority of the Egyptian nurses. All the STN should be eventually upgraded to TN, although the current MOHP strategy mainly focuses on the upgrading courses for the newly graduated STN and short-term specialty training for nurses in-service. There is a continuous education plan that has already retrained 500 STNS and will continue to provide with training of trainers and managers in various specialties. Technical Institutes should play roles of upgrading the existing STN, but they need to improve their teaching staff capacity and facilities.

41. It is important to establish licensing and accreditation mechanisms of nurses. Standardized national examination for obtaining a nurse license should be installed. The newly established National Nursing Council may play such roles. The Nursing Syndicate may have a role in licensing and accreditation, although it has not played any academic and technical roles until now.

42. It should be also a priority to increase nurses in remote areas, where they are in absolute shortage. The efforts to increase in quantity need to be carefully balanced with those to improve quality. Number of nursing students in remote governorates should be increased, as it may be difficult to relocate nurses from urban areas to remote areas.

43. The MOHP criteria to allocate nurses do not necessarily meet the needs. For example, many nurses deployed to the MOHP hospitals according to the number of beds, although there are many vacant wards. In addition, many nurses are absent from work, taking leaves legally or illegally. It is needed to rationalize the size and number of public hospitals and PHC centers, so that these facilities would function efficiently, and optimum number of nurses can be allocated.

44. Improving nursing education and in-service training should be done based on concrete evidences. Quality and Performance Improvement teams are recently established at the MOHP and hospital levels, and play roles of controlling risks of poor performance of nurses. However, the mechanisms to collect risk cases without blaming nurses have not been established yet. Current teaching materials have been mostly adapted from international materials such as those of Northumbria University, which were reviewed by Faculties of Nursing of Cairo, Ain Shams and Alexandria Universities. It is needed to find out what knowledge and skills are in shortage among nurses in Egypt, and to develop suitable education and training modules based on the evidences in Egypt.

45. The MOHP plans to teach nursing students in English, so that the curricula would meet an "international standard." However, there is no established international standard of nursing education curricula, which may be defined by the World Health Organization (WHO) or International Council of Nurses (ICN). Therefore, this policy seems to intend to train English-speaking nurses who will be able to work abroad. It is not necessarily required to educate Egyptian nurses in English, as both students and teachers may not have sufficient language skills, and they may misunderstand important clinical knowledge. Instead, Arabic education materials should be developed, so that students can understand the contents well.

46. Establishing Nursing Academies should be delayed to a later phase, after a careful evaluation of the pilot program at Beni Suef University, as well as the activities of upgrading STNS. It is too ambitious to establish three new Nursing Academies for continuing specialized education of nurses and nursing education of other faculty graduates, while the ambitious activities to upgrade 160 STNS are on going. Training unemployed university graduates to pursue a nursing career is an innovative initiative, however, this may not be the priority for the current efforts of strengthening nursing education.

47. Midwifery education and status of midwives should be improved. The education levels and social status of majority of midwives are relatively lower than nurses, although midwives play important roles to provide women and newborns with comprehensive care, both curative and preventive. Secondary Midwives should be abolished: midwives should be upgraded to at least the postgraduate Specialty Diploma level.

48. It is necessary to assure appropriate career paths of nurses, along with their knowledge and skills are improved. Proper incentive mechanisms should be installed, so that providing upgraded nursing services can results in improved social status and incomes. The MOHP needs to secure budgets to provide with appropriate incentives.

49. It is urgently needed to install performance based evaluation and incentive mechanisms among public employees. Reforming the rigid public sector human resource policies is a most fundamental issue that needs to be addressed, although this might be beyond the authority of the MOHP. Nurses are guaranteed life-long public employment regardless of performance, and allowed to take long leaves while keeping their graded posts. The level of base salary is kept extremely low, thus many nurses are absent from their work for taking another job. This undermines professional morals and discipline. Low moral and lack of discipline seems to be more serious issues than the quality of nursing education for improving nursing services.

## **IV. RECOMMENDATIONS**

### **1. Steps for Strengthening Nursing Education**

50. Summarizing above described gaps and challenges, the followings are recommended to develop and implement a feasible and sustainable action plans in nursing education.

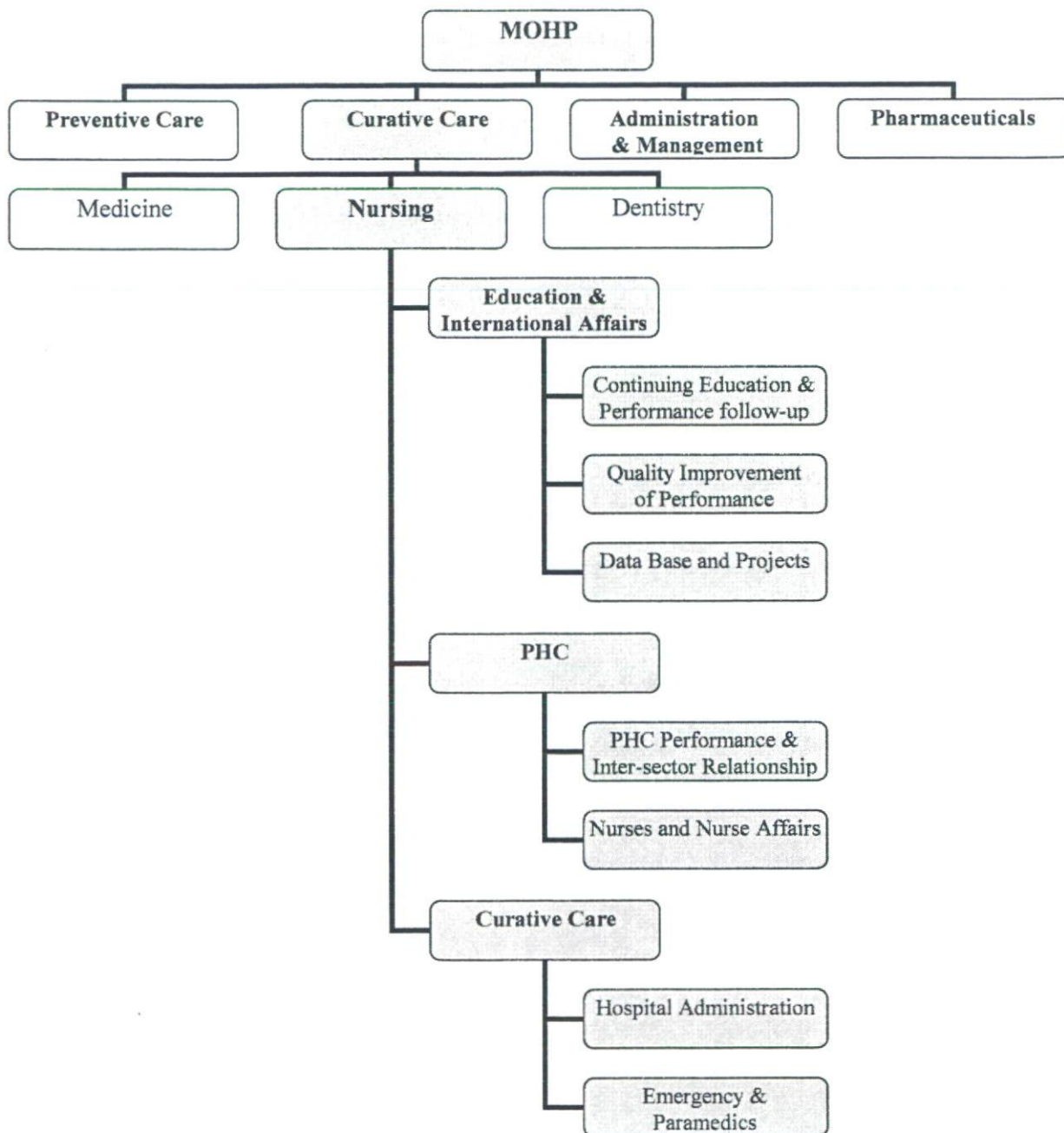
- The overall direction of the MOHP strategy is right, however, activities in the strategy need to be prioritized and done by step by step manner.
- Before upgrading, it is needed to map STNS and rationalize them.
- Nurses in remote areas should be increased through increasing the number of local nursing students.
- Existing STN need to be upgraded. Technical Institutes could be the places for their re-training.
- Existing and newly-upgraded Technical Institutes should be improved in terms of facility and equipment, as well as the capacity of teaching staff.
- The MOHP needs to secure budget to provide with proper incentives.
- Performance evaluation mechanisms should be introduced and linked to an incentive mechanism.
- Education curricula should be developed based on concrete evidences of clinical cases in Egypt.
- Arabic education materials should be developed.
- The status and education of midwives should be improved.
- Establishing Nursing Academies should be delayed to a later phase, after evaluating other activities.

### **2. Expected Roles of the World Bank**

51. The World Bank should continue to support the commitment of the MOHP to strengthen nursing education, improve quality of nursing services, and to develop efficient and effective health services. Expected roles of the World Bank are as follows:

- Rehabilitate existing 12 Technical Institutes after examining the situation. Management training should be provided simultaneously, in collaboration with other donors or Northumbria University.
- Map the 241 MOHP affiliated STNS throughout the country and make a plan of merging, closing and rationalizing them.
- Upgrade the rationalized number of STNS to Technical Institutes and provide with facilities and equipment.
- Coordinate with other stakeholders, such as bilateral donors and WHO, to provide the MOHP with necessary technical assistance, including: development of curricula and teaching materials; evaluation of education quality as well as the upgrading activities; improving teachers' capacity; installing risk management mechanisms; and preparing licensing and accreditation systems.
- Continue to support the MOHP to reform and rationalize health services in the public sector and to define roles of the public and private sectors.
- Continue discussions with the Egyptian government regarding human resource management policies and budget allocation.

APPENDIX 1. ORGANIZATION STRUCTURE OF THE CENTRAL ADMINISTRATION OF NURSING



APPENDIX 2. BASIC INDICATORS AND DISTRIBUTION OF NURSES IN EACH GOVERNORATE

Governorate	Basic Indicators*					Nurses of Various Qualification**										Number of Nurses per 100,000 population			
	GDP per capita (LE)	Population (thousands)	Secondary school enrollment rate (%)	Under 5 mortality rate (per 1,000 live births)	Number of Beds	BSN		TN		STN				Assistants			Ex-perience	Total	
						Ms/PhD	Nurse	Mid-wife	5 year	Specialty Diploma (+)		Specialty Diploma (-)		Nurse	Mid-wife				
										F	M	F	M						
Cairo	10,543	7,497	88	39	4,164	1	116	35	47	4	802	35	3,941	159	35	61	10	5,246	70
Alexandria	8,365	3,691	98	29	2,103	3	552	270	87	13	101	3	2,352	21	28	50	55	3,535	96
Port Said	12,546	522	94	25	761	0	25	19	0	0	27	0	991	42	2	5	0	1,111	213
Suez	9,495	469	95	24	1,137	0	17	7	0	0	39	1	791	126	5	0	0	986	210
Ismailia	6,211	825	83	28	1,640	0	7	28	3	0	0	0	1,295	109	1	11	0	1,454	176
Dommiata	6,482	1,035	91	18	2,066	0	69	18	0	0	0	0	4,752	484	0	65	0	5,388	521
Dakahlia	4,535	4,746	89	24	5,478	2	493	93	58	1	311	3	6,006	51	49	160	0	7,227	152
Sharkeia	4,336	4,906	86	27	3,624	0	479	83	27	0	281	14	4,203	110	20	90	4	5,309	108
Qaliubiya	5,591	3,732	69	23	2,858	1	97	44	38	0	259	35	3,753	243	10	86	5	4,571	122
Kafir el Sheikh	5,223	2,492	89	19	2,846	0	416	109	12	0	111	0	3,828	145	0	50	0	4,671	187
Gharbiya	5,511	3,791	89	23	3,688	7	1,300	372	28	1	692	6	8,645	156	29	74	17	11,327	299
Menoufia	4,368	3,112	80	22	2,003	1	383	66	19	0	250	12	4,978	125	24	114	0	5,972	192
Behera	4,846	4,515	70	19	2,440	0	539	374	87	0	174	0	7,200	168	85	56	129	8,812	195
Giza	6,381	5,427	67	24	4,919	0	75	42	60	0	559	1	4,290	20	13	42	0	5,102	94
Fayoum	3,746	2,321	66	34	2,091	0	29	37	5	0	81	0	2,803	120	17	10	0	3,102	134
Beni Suef	3,454	2,162	59	41	1,865	0	11	16	14	0	117	8	2,583	96	62	141	0	3,048	141
Menia	4,061	3,875	76	44	3,275	0	63	24	1	2	65	11	2,642	514	60	168	32	3,582	92
Asyut	3,120	3,281	62	53	3,966	0	86	61	10	0	0	0	6,415	1,164	36	10	0	7,782	237
Sohag	3,399	3,655	72	43	2,807	0	29	35	1	0	13	4	1,934	72	8	54	0	2,150	59
Qena	4,075	2,820	84	38	2,005	0	10	7	0	0	19	0	1,565	219	0	36	2	1,858	66
Aswan	4,957	1,077	97	35	1,618	0	15	22	0	0	0	0	1,456	376	2	11	0	1,982	184
Matrouh	6,604	255	54	28	1,492	0	31	1	1	0	4	0	825	44	2	2	0	910	356
Wadi el Jadid	5,886	163	96	25	651	0	13	8	3	0	36	19	672	314	0	4	0	1,069	656
Red Sea	8,308	179	73	24	455	0	18	3	0	0	6	3	219	32	0	14	0	295	165
North Sinai	6,490	295	70	34	485	0	33	0	0	0	10	0	771	269	0	5	0	1,088	369
South Sinai	11,985	62	55	18	174	0	15	5	0	0	0	0	231	100	0	2	0	352	568
Luxor City	3,971	407	93	36	565	0	6	1	0	0	1	0	354	28	0	12	0	402	99
Total (Average)	5,742	67,604	78	31	61,176	15	4,927	1,780	501	21	3,958	155	78,980	5,307	488	1,333	254	98,331	145

(Source: \*UNDP/The Institute of National Planning Egypt; \*\*MOHP Human Development Report 2004; \*\*MOHP 2006)



**APPENDIX 3: SECONDARY TECHNICAL NURSING SCHOOLS IN EGYPT**

Source: MOHP (2006 – 2007)

No.	Affiliation	Name of School	Total Number of Students		Number of Teachers with Specialty Diploma
			Female	Male	
1	MOHP	Nasser Institute	99	0	4
2		Haram	64	0	4
3		Sharq Elm Dina	71	0	7
4		Salaam City	73	0	6
5		Agoza	88	0	6
6		Dar el Shefa	50	0	3
		Total	445	0	30
7	Psychiatrics Directorate	Abaseya 1 (boys )	0	134	2
8		Abaseya 2 (girls)	118	0	1
9		Khanka (boys )	0	149	10
10		Helwan ( boys )	0	70	1
11		Mamora (Alexandria )	67	0	5
		Total	185	353	19
MOHP (Central) Total			630	353	49
12	Governorate Cairo	Ahmed Maher	136	0	2
13		Manshyet el Bakry	73	0	2
14		Sadr el Abaseya	136	0	3
15		Homiat el Abaseya	157	0	5
16		The Italy	75	0	2
17		Khazendara	67	0	3
18		Monira	140	0	5
19		Dar el Salaam	63	0	2
20		Helwan el Aam	74	0	2
21		Shoubra el Aam	143	0	3
22		Khalifa	75	0	-
23		Bolaq el Aam	73	0	2
24		May 15	72	0	2
25		Zawia el Hamra	63	0	3
		Total	1,347	0	36
26	Alexandria	Dar Ismael	59	0	5
27		Raas el Teen	49	0	5
28		Amria	70	0	6
29		Agoza	77	0	5
30		Borg el Arab	58	0	4
31		Abou Qeer	67	0	6
		Total	380	0	31
32	Port Said	Port Said	143	0	5
33		Nasr	110	0	9
		Total	253	0	14
34	Suez	Suez (boys)	0	25	1
35		Suez (girls)	145	0	3
		Total	145	25	4
36	Ismailia	Ismailia (boys)	0	51	2
37		Ismailia (girls)	62	0	4
38		Tal el Keber	75	0	4
39		Fayed	67	0	1
40		Qantara West	70	0	7

		Total	274	51	18
41	Dommiata	Dommiata	74	0	3
42		Farascor	76	0	2
43		Kafr Saad	75	0	4
44		Zarqa	65	0	3
		Total	290	0	12
45	Dakahlia	Mansura	79	0	2
46		Talkha	77	0	2
47		Sherben	84	0	2
48		Belkas	75	0	1
49		Dakarnes	79	0	1
50		Senbelawen	83	0	1
51		Aga	77	0	3
52		Manzala	77	0	1
53		Matarya	77	0	5
54		Met Ghamr	75	0	2
55		Nabro	73	0	1
56		Menyet el Nasr	80	0	3
57		Ebed	82	0	3
58		Met Selsel	81	0	8
59		Gamalia	80	0	7
60		Mahalet Demna	77	0	6
61	Gamasa	60	0	3	
		Total	1,316	0	51
62	Sharkeia	Zaqazeq (boys)	0	74	-
63		Zaqazeq (girls)	75	0	1
64		Fefya	74	0	2
65		Menia el Qamh	76	0	-
66		Derb Negm	72	0	4
67		Belbes	76	0	-
68		Abou Hamad	76	0	1
69		Faqos	75	0	2
70		Kafr Saar	75	0	1
71		Hussenia	75	0	7
72		Qoren	73	0	10
73		Abou Kebeer	72	0	1
74	Ebrahymia	26	0	4	
		Total	845	74	33
75	Qaliubiya	Benha ( boys )	0	24	2
76		Benha (girls )	75	0	3
77		Khanka (girls)	72	0	1
78		Kafr Shokr	73	0	2
79		Tokh	75	0	3
80		Qaliob	75	0	1
81		Shoubra el Khema	72	0	3
82		Kanater	74	0	2
83		Sheben el Kanater	73	0	1
		Total	589	24	18
84	Kafr el Sheikh	Kafr el Sheikh (boys)	0	82	3
85		Kafr el Sheikh (girls)	163	0	3
86		Balteam	87	0	5
87		Ryad	59	0	3

88		Desooq	79	0	4
89		Bella	86	0	3
90	Kafr el Sheikh	Sedy salem	84	0	2
91		Foh	83	0	5
		Total	641	82	28
92	Gharbiya	Tanta (boys)	0	82	3
93		Tanta (girls)	78	0	1
94		Mahala	80	0	6
95		Qotor	80	0	1
96		Samanod	80	0	4
97		Santa	78	0	1
98		Basyon	83	0	3
99		Zefta	80	0	1
100		Kafr el Zayat	78	0	1
		Total	637	82	21
101	Menoufia	Sheben el Kom (boys)	0	75	3
102		Sheben el Kom (girls)	75	0	3
103		Monof	75	0	4
104		Bagor	76	0	4
105		Shohada	77	0	2
106		Ashmon	74	0	4
107		Berket el Sbaa	78	0	3
108		Tala	77	0	1
		Total	532	75	24
109	Behera	Damanhur (boys)	0	75	6
110		Damanhur (girls)	75	0	6
111		Abou el Matamir	79	0	4
112		Delengat	79	0	6
113		Rashed	80	0	4
114		Tahrer	80	0	3
115		Etay el Baroud	75	0	-
116		Kafr el Dawar	74	0	1
117		Shoubra Khet	79	0	5
118		Kom Hamada	75	0	3
119		Abou Homos	80	0	5
120		Hosh Esa	80	0	5
121		Edko	79	0	6
122		Rahmania	75	0	5
123		Mahmodia	25	0	3
		Total	1,035	75	62
124	Giza	Giza (boys)	0	28	-
125		Om el Masreen	158	0	-
126		Bolaq	72	0	-
127		Embaba el Am	72	0	-
128		Homiat Imbaba	96	0	-
129		Hawamdia	80	0	-
130		Badrashen	83	0	-
131		Ayat	80	0	-
132		Oseem	77	0	-
133		Saaf	79	0	-
134		Atfeh	83	0	-
135			October 6 city	60	0

136		Wahat	25	0	-
		Total	965	28	-
137	Fayoum	Fayoum	160	0	-
138	Fayoum	Snors	80	0	1
139		Atsa	80	0	3
140		Abshoy	78	0	2
141		Tamia	78	0	4
		Total	476	0	10
142	Beni Suef	Beni Suef	76	0	1
143		Wasta	75	0	1
144		Beba	75	0	3
145		Fashn	76	0	2
146		Nasr	76	0	2
147		Samasta	76	0	1
148		Ahnasia	75	0	2
		Total	529	0	12
149	Menia	Menia (boys)	0	80	4
150		Menia (girls)	78	0	5
151		Maghagha	75	0	1
152		Ben Mazar	76	0	2
153		Samalot	72	0	3
154		Malawy	74	0	6
155		Fekria	76	0	3
156		Adwa	50	0	3
		Total	501	80	27
157	Asyut	Asyut (boys)	0	82	4
158		Asyut (girls)	164	0	2
159		Dairot (boys)	0	82	2
160		Dairot (girls)	168	0	5
161		Qoseia	87	0	7
162		Sadfa	140	0	4
163		Manfalot	167	0	3
164		Badary	83	0	8
165		Abou Teg	86	0	7
166		Abnob	87	0	4
167		Sahel Selim	84	0	7
168	Ghnayem	--	--	8	
		Total	1,066	164	61
169	Sohag	Sohag	95	0	2
170		Tama	47	0	2
171		Belbena	72	0	1
172		Tahta	68	0	3
173		Saqalta	46	0	1
174		Monsha	62	0	1
175		Dar el Salaam	66	0	1
176		Gerga	25	0	-
177		Gohaina	--	--	-
		Total	481	0	11
178	Qena	Qena	176	25 (1st year)	1
179		Nagahamady	132	0	-
180		Armeny	84	0	-
181		Asna	82	0	-

182		Deshna	65	0	-
183		Farshot	76	0	-
184		Qos	131	0	-
185		Abou Tesht	41	0	-
186	Qena	Waqf	74	0	-
		Total	861	25	1
187	Aswan	Aswan	67	0	-
188		Medical Centre	66	1 (2nd year)	1
189		Nasr	72	0	-
190		Edfo	151	0	-
191		Qom Embo	43	0	1
192		Draw	52	0	-
		Total	451	1	2
193	Matrouh	Marsa Matrouh	263	0	5
194		Hamam	83	0	1
		Total	346	0	6
195	Wadi el Jadid	Kharga (co-education)	59	20	-
196		Dakhla (co-education )	50	26	3
		Total	109	46	3
197	The Red Sea	Gergada	196	0	3
		Total	196	0	3
198	North Sinai	Aresh	175	0	3
199		Bear el Abd	90	0	1
200		Shekh Zowayed	149	29 (3rd year)	2
		Total	414	29	6
201	South Sinai	Tor	118	2 (1st year)	4
		Total	118	2	4
202	Luxor City	Luxor	99	25 (1st year)	4
203		Molahaa Dawly	74	0	5
		Total	173	25	9
MOHP (Governorate) Total			14,970	888	507
204	HIO	Nasr Helwan	100	0	
205		October 6 Hospital (Dokki)	70	0	
206		Shoubra Cairo	64	0	
207		Abou l Resh	62	0	
208		Islamic Researches	67	0	
209		Nasr City	78	0	
210		Sidnawy	54	0	
211		Sport Students	144	0	
212		Karmoz	72	0	
213		Gamal Abd el Naser	146	0	
214		Mwbaret Met Ghamr	25	0	
215		Almansora	46	0	
216		Mebaret el Zaqazeq	51	0	
217		10th Ramadan	50	0	
218		Mebaret Tanta	50	0	
219		Mahala el Kobra	47	0	
220		The Nile Shoubra el Khema	78	0	
221		Mebaret Port Said	75	0	
222		Mebaret Suez	73	0	
223		Benha Qaliubiya	100	0	
224	Obor Kafr el Sheikh	100	0		

225		Mebaret el Fayoum	75	0	
226		Mebaret Asyute	72	0	
227		Mebaret el Moqatqm	65	0	
228		Aswan	63	0	
229	HIO	Mahala el Kobra	73	0	
230		The Nile Shoubra el Khema	50	0	
		Total	1,950	0	
231		Coptic	69	0	
232		Amr Ben Elas	95	0	
233	CCO	Heliopolis	120	0	
234		Mady	87	0	
235		Mebaret (Alexandria)	48	0	
		Total	419	0	
236		Mataria	130	0	
237		Sahel	67	0	
238	Teaching	Galaa	83	0	
239	Hospitals	Heart institute	101	0	
240		Poliomyelitis	106	0	
241		Sohag	77	0	
		Total	564	0	
		MOHP (Affiliates) Total	2,933	0	
		MOHP in Total	18,533	1,241	559
242		Haystep (boys )	0	187	
243	Military	Maady	375	0	
244		Mostafa Kamel (Alexandria)	104	0	
		Total	479	187	
245	Police	Moubarak (boys)	0	271	
246		Moubarak (girls)	211	0	
		Total	211	271	
247		Bab el Sharia	26 (1st year)	25 (3rd year)	
248		Cairo	157	0	
249		Kasr el Eini	140	0	
250		Ain Shams	242	0	
251		Ain Shams Specialty	208	0	
252		Azhar	121	0	
253	University	Zahraa I	123	0	
254	Faculty of	Hussein	440	0	
255	Medicine	Alexandria	--	--	
256		Suez Canal	452	50 (1st year)	
257		Alazhar (Dominate)	92	0	
258		Mansura	355	0	
259		Zaqazeq	250	0	
260		Benha	153	0	
261		Menoufia	--	--	
262		Menia (co-education)	95	59	
263		Asyut	--	--	
264		Sohag	228	0	
		Total	3,082	134	
265		New Women	71	0	
266	NGO	Arab Engineers	71	0	
267		Tioder Belhars	72	0	
		Total	214	0	

Non-MOHP in Total	3,986	592	
Total	22,519	1,833	
Average per Year	7,506	611	

Public health policies and health services

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**1 Overview**

This chapter aims to describe Japanese experience in making public health policies and providing with health services during the economic and social development, and to draw lessons that may be applicable to other developing countries. First, Japanese history of public health and medical services is briefly overviewed to help understand background concepts and views toward health services in Japan. Second, as an example of Japanese experience in the process of social and economic development, maternal health care and family planning policies and services in 19th and 20th centuries are reviewed. Third, the development of universal coverage of health insurance and new challenges caused by demographic and economic changes are examined. Finally, lessons from Japanese experience are discussed, so that the experience could contribute to improve health policies and services in developing countries.

**2 Historical review**

**2.1 Before modernization**

During ancient and medieval eras in Japan, medical services were mainly composed of Chinese herbal medicine, originally brought by the Buddhism monks and scholars, and various kinds of spiritual prayers. In those days, medical service provision was one of the important tools of reigning people, as well as a charitable activity based on Buddhism belief.

The first government's attempt to establish a health service institution for the general public was probably the Seyaku-in in 730, which provided the poor with herbal medicines. The government in eighth century also defined a legal framework and job descriptions of health service providers, such as physicians and midwives.

Medical skills of Europe were brought in Japan by Christian missionaries in 16th century. During 17th and 18th centuries, the feudal government banned



Christianity and isolated the country from all foreign countries except minimum contacts with the Netherlands and China. However, quite a few Japanese physicians were eager to learn European medical knowledge and skills. A landmark achievement was *Kaitai-shinsho*, published in 1774, which was an anatomy book translated into Japanese from Dutch by a group of Japanese physicians lead by Sugita Genpaku. The physicians who learned European medical sciences tried to introduce a scientific approach in medical services.

In 1823, Philipp Franz von Siebold, a German physician served for the Dutch Consular in Nagasaki, arrived in Japan. He opened a school called *Narutaki-juku*, and taught European medical and biological sciences, as well as clinical skills, to well-motivated Japanese students.

However, most people could not afford to consult any physicians during the feudal era in Japan. It was an urgent need for the government to provide the poor with medical services to mitigate frustration of the people and to prevent anti-government uprisings. The government established a clinic to serve the poor, *Koishikawa Ryoyo-sho*, in 1722 within a medical herb garden complex in Edo, or current Tokyo, which is the current *Koishikawa botanical garden* of Tokyo University.

A first large scale public health intervention in Japan was small pox immunization campaign. The immunization technique was brought in Japan at first in 1744 by a Chinese and then in 1848 by Dutch physicians. Following the advice of Japanese physicians who learned Dutch medicine, the government established *Shuto-sho*, or a small pox immunization facility. Then, small pox immunization activities were extended throughout the country, including the northern island Ezo, or current Hokkaido, thanks to the efforts of a group of devoted physicians.

## 2.2 After Meiji restoration

Established in 1868, the Meiji imperial government tried hard to catch up the industrialized countries in Europe and the United States in terms of economic and military capabilities. The major objective of the government was to defend the countries from invasion of the advanced countries by building up a rich industrialized country and a strong military force. It was an urgent task for the government to improve health and education of the people to increase productive laborers and strong soldiers. Particularly, controlling infectious diseases such as tuberculosis and improving maternal and child health were important policy objectives.

It was also urgent to bring in European and American science and technology. The government invited European scholars to teach Japanese academics and

students in imperial universities and public schools. The salaries of the foreign scholars were sometimes as high as those of high-ranking government officials and prefecture governors. For example, Aichi prefecture authority invited Leonor Michaelis as Professor of Biochemistry of Nagoya University School of Medicine between 1922 and 1926, offering a very high salary. Michaelis, then 47 years old, was a German biochemist and physician who had been already famous for Michaelis-Menten hypothesis of the mechanism of enzyme-catalyzed reactions. During his tenure in Nagoya University, he established Department of Biochemistry, and trained many Japanese scholars and physicians.

The government also sent capable young officials and students to European countries such as Germany and the United Kingdom to learn medicine, science, law, and so on. They returned to Japan after several years, and worked for the government to develop their specialties in Japan. For example, Mori Rintaro (Ogai), an Army physician and a novelist, was sent to Germany from 1884 to 1888 and later became the head of the Army Medical Services. Takaki Kanehiro, a Navy physician and the founder of Jiikei Medical School, was sent to the United Kingdom from 1875 to 1880 and later became the head of the Naval Medical Services.

The concept of public health and hygiene was developed by Nagayo Sensai and Goto Shinpei. Nagayo, a physician who learned Dutch medicine, was sent to Europe as a member of the government study team lead by Iwakura Tomomi between 1871 and 1873. He came back to Japan to be the director general of medical services. He introduced the concepts of public health and hygiene, and developed public health policies and legal frameworks of medical services. Goto, a prominent statesman, was originally a physician and was the director of Aichi Hospital, or current Nagoya University Hospital. After studying in Germany between 1890 and 1892, then 35 year old Goto was appointed by Nagayo to be the director general of hygiene of the Ministry of Interior.

Lacking specific technical knowledge of public health and medicine, the Ministry of Interior and local police offices could not manage the growing demands of public health services. Thus, Ministry of Health and Welfare was established in 1938, integrating functions of public health and hygiene, quarantine, infectious disease control, food safety control, pharmaceuticals, social insurance and welfare in the Ministry of Interior and other bureaus.

There were about 5,200 physicians who learned European medicine and about 23,000 physicians who learned traditional herbal medicine in 1874. Since the estimated total population of Japan then was about 35 million, there were about 80 physicians per 100,000 population. However, their qualification and capability were varied and hardly any physicians were available in rural areas.

Thus, the government established qualification and licensing mechanisms of physicians, called I-sei, in 1874. Medical schools were established in most prefectures by 1877 as affiliations of public hospitals.

### 2.3 Post World War II

Following the end of the World War II, Japan was occupied and administered by the general headquarters (GHQ) of allied forces lead by the United States Army. Colonel Crawford F. Sams was responsible for rehabilitating and rebuilding public health and medical services in the occupied Japan between 1945 and 1951.

Sams gave orders to his Japanese counterparts in the Ministry of Health and Welfare to control infectious diseases through various measures such as improving sanitation and hygiene, spraying DDT, and immunizing children. He also tried to improve nutrition of children by introducing school feeding programs. Sams brought a scientific and evidence-based approach in Japanese public health and medical services. His team established model public health centers for installing the concepts of epidemiology, public health and hygiene among health policy makers and administrators, as well as providing people with basic health services by public health nurses.

Japanese economy had taken off since mid 1950s. Prevalence of infectious diseases dramatically fell down, because of various public health measures, as well as improvement of living conditions along with economic development. In mid 1950s, there were about 90,000 physicians, or about 100 physicians per 100,000 population, and about 500,000 hospital beds. By the end of 1990s, physicians increased to over 200,000, or about 170 physicians per 100,000 population, and hospital beds reached over 1.6 million. Universal coverage of health insurance was achieved in 1961, thus, affordable health services were guaranteed to all Japanese.

Along with economic development and life style changes, non-communicable diseases, such as cardiac diseases and cancers, increased. Although the major causes of deaths had been tuberculosis and pneumonia, strokes, cancers, and cardiac diseases took over the top killers position in mid 1950s. Life expectancy of Japanese people also dramatically extended: life expectancy at birth was 50 years for male and 53 years for female in 1947, and it reached 76 years for male and 81 years for female in 1987.

Rapid industrialization between 1950s and 60s resulted environmental pollution, which caused serious health problems among local residents. For example, air pollution by sulfur dioxide caused asthma in Yokkaichi, water contamination with methyl mercury caused neurological disorders in Minamata

and Niigata, and water and soil pollution by cadmium caused renal failure and osteoporosis in Toyama. It took more than a decade to install mechanisms for preventing industrial pollution through tightening environmental regulations. It took another decade for saving the victims through medical and financial compensations following many painful litigation cases.

#### **2.4 Challenges after 1980s**

Health care costs in Japan are increasing rapidly, because of the health and demographic transitions that implied increasing non-communicable diseases, declining young population and increasing aged population, as well as development of high-cost medical technologies. The government tried to contain health care costs through modifying the benefit package, standard fees for services, and co-payment amounts. In 1983, the government introduced a separate health care scheme for the aged, based on contributions from employees health insurance funds and the government budget. In 2000, long-term care insurance scheme was started.

As Japanese economy stagnated since early 1990s, the government was obliged to implement an economic structural reform. Health care was one of the targets of structural reform, thus public spending for health and welfare services was revisited and reduced. Traditional long stay in hospitals was not allowed anymore, therefore quite a few small public and private hospitals had difficulties to sustain their business.

Meanwhile, demands for sophisticated medical technologies and high quality of services grew, along with the increase of patients' rights recognition and mass media information. This caused overburden of physicians in hospitals and difficulty to make referral mechanisms function properly, particularly in obstetric and pediatric services.

#### **2.5 Background principles, concepts and views towards public health and medical services in Japan**

Before modernization, public health and medical services were regarded as charitable activities, as well as social services to govern people. Although there were not much systematic efforts to introduce modern medical sciences, handful physicians and academics motivated by their curiosity made enormous efforts to bring in new knowledge and skills.

During the period of industrial and military development between late 1800s and early 1900s, the government aimed to improve health of Japanese people, so that they could be productive laborers and strong soldiers. The government systematically imported scientific knowledge and skills from Europe and the