For information
on 11 July 2011

Legislative Council Panel on Health Services

Follow-up on Healthcare Manpower Issues in the Hospital Authority

PURPOSE

This paper briefs Members on the follow-up on healthcare manpower issues in the Hospital Authority (HA) further to the discussion by the Panel in April and May 2011.

BACKGROUND

2. We briefed Members on the latest developments of the manpower situation of doctors and nurses in HA on 11 April 2011 and 9 May 2011 respectively. Members noted the improvement measures introduced by HA for the doctor and nursing grades in recent years, and the proposed initiatives for implementation in the short and medium term with a view to improving staff retention, boosting morale and strengthening manpower. HA has now completed consultations on the proposed measures, and will take them forward in steps taking into account the views of staff.

FOLLOW-UP ON INDIVIDUAL ITEMS

3. At the last two Panel meetings, the Administration was requested to provide further information on the following –

(a) detailed information on the calculation of the cost and resource allocation (including manpower and work hours) for each service area under the diagnosis-related groups (DRG) system, and the arrangement to solicit views from the specialty committees and frontline doctors on pressurized areas that required additional resources, so as to improve the fairness and transparency of resource allocation within HA;

(b) the methodology of HA for projecting its medical and nursing staff establishment and the projection results;

(c) the manpower requirement, the necessary qualification, the implementation timetable and the financial implications of the proposal for the employment of part-time private practitioners to help out in the pressurized outpatient clinics;

(d) the success rate of application from contract Registered Nurses for transferring to permanent terms of employment since 2008; a breakdown of the number of nurses in HA by contract and permanent terms of employment; and the difference in pay arising from the measure to increase the entry pay for Registered Nurse and Enrolled Nurse of HA by two pay points in 2007; and

(e) the number of nurse graduates coming on stream in the next three years, with a breakdown by the nurse training courses provided by the local tertiary institutions, HA nursing schools and private hospitals.

Our responses are set out below.

Internal resource allocation in HA under the DRG system and related consultation arrangements

Resource allocation

4. HA integrates its service planning and resource allocation through a structured framework. Each year, HA draws up annual plans at hospital and cluster levels, which set out the strategies, major initiatives and service targets to meet the demands of the communities covered by their respective catchment area. The annual plan forms the basis on which resources are allocated among the clusters. Consultation arrangements for the annual planning process are outlined in paragraph 8 and 9.

5. Starting from 2009-10, HA has adopted a new "Pay for Performance" system in its internal resource allocation in order to promote productivity and quality improvement through a fair and transparent mechanism that reflect hospitals' performance. Following the principle of "same service, same funding" under the "Pay for Performance" framework, unit costs of clinical services form the basis for resource allocation according to the strategic areas of service needs. The costs of HA's clinical services include the direct costs of clinical specialties, the costs of various clinical support services (e.g. anaesthesia service, pharmacy, pathology, diagnostic radiology and allied health

services), the costs of various non-clinical supporting services and daily expenses of hospitals (e.g. meals for patients, utility expenses, repair and maintenance of medical equipment and machinery), some institutional items (e.g. insurance costs and information technology support for clinical computer systems), the administrative costs of clusters and the HA Head Office, as well as some charges for services provided by government departments to HA (e.g. building maintenance services provided by the Architectural Services Department). The average unit cost of a particular type of service is calculated with reference to the total costs of provision of such service and the corresponding volume of activities.

6. In order to reflect the workload and mix of cases treated by different hospitals, HA adopts a casemix approach as the basis for strategic purchasing and throughput measurement for acute inpatient services. Casemix refers to a way of describing the number and type of patients treated by acute hospitals adjusted for complexity according to clinical diagnosis and procedures performed. The casemix model adapted by HA is built upon an internationally-adopted patient classification system, namely, the DRG system. In other words, in classifying patients into different DRG, we could properly measure hospitals' workload with the number of cases treated by the hospitals, adjusted by the complexity of the cases. Based on HA's costing information and clinical data captured in HA's Clinical Management System, such as theatre and diagnostic utilization and relevant information on drug and treatment, a set of cost weights has been developed to measure the relativity of resource requirements across patients of different DRG. Such information could then be used to facilitate the fair allocation of resources across hospitals.

7. Under the "Pay for Performance" system, funding is allocated to hospital clusters according to three key areas as follows –

(a) Service growth in areas of greatest need

Examples include opening of additional beds; enhancement of service for treatment of life threatening diseases; addressing waiting time for priority disease groups; strengthening mental health services, etc.

(b) Improvement in patient safety and quality

Examples include enhancing drug quality and safety; strengthening safety and risk management, etc.

(c) *Service improvement as a result of adoption of advanced technology and treatment and training and retention of staff*

Examples include further expansion of the HA Drug Formulary; replacement of ageing medical equipment; various initiatives on the training and retention of workforce (including improvement in the career prospects of healthcare staff; enhancement of professional development; training of additional Registered Nurses/Enrolled Nurses to meet increasing demand; and implementation of systematic workforce planning and development), etc.

Consultation arrangements

8. The annual planning process of HA involves a broad participatory approach. At the beginning of the process, various sharing forums are organized to solicit inputs from frontline clinical staff, cluster management and Head Office executives. For example, there is a dedicated forum for various clinical specialty committees comprising frontline clinical professionals to present clinical proposals that require funding support or other additional resources. After the forum, the clinical proposals are evaluated based on their merits by the Medical Policy Group, which comprises senior clinicians within HA.

9. In addition to the above platform for specialty committees, there is a designated forum for hospital clusters, with contributions from frontline staff, to put forward initiatives addressing the key service areas of individual clusters. Programmes and initiatives collated from these discussion sessions provide the major input to HA's annual planning exercise.

Manpower requirements for doctors and nurses in HA

10. HA adopts an integrated approach in projecting its future healthcare workforce requirements. The process starts with an overall assessment on the future service demand. This covers a comprehensive spectrum of HA services, ranging from in-patient, day-patient to outpatient, ambulatory and community services as well as clinical supporting specialties services. The service demand projection uses age- and specialty-specific service utilization rates in a given year as the base, and takes into account anticipated changes resulting from various factors including population growth and ageing, and changes in healthcare services utilization pattern. The service demand projection results are then used to estimate the future manpower requirements for healthcare professionals in HA.

11. Broadly, the future manpower requirements comprise two major components, namely, (a) additional demand generated by projected service growth and (b) replacement demand generated by staff turnover (including retirement) -

(a) Additional demand generated by service growth

The process includes a detailed work profile analysis to identify the workload in different areas in each specialty of the medical grade and to specify parameters on the average duration and manpower required under the projection model. A similar work profile analysis is done for nurses to identify key nursing service components of general and psychiatric streams at different clinical settings. Based on a set of established planning parameters and assumptions, service demand projections are then translated into workforce requirements. The additional demand is the difference between the projected workforce requirements and the manpower level of the base year, including any shortfall at the baseline.

(b) Replacement demand generated by turnover

The total turnover of staff takes account of retirement and departure from HA for other reasons. For turnover due to retirement, the demographic profile of existing workforce provides the basis for projection using the retirement age of 60. As for non-retirement turnover, this is influenced by factors including market force dynamics. A base case scenario is formulated using the aggregated past trend of specialty-specific non-retirement turnover rates as a basis of the forecasting assumptions.

12. According to the manpower projections conducted in 2010 using 2008 as the base year, the total manpower requirements for doctors in HA for 2016, 2021 and 2026 are 5,839, 6,248 and 6,749 respectively under the base case scenario. The projected manpower requirements by specialty are set out in Table 1 at **Annex A**. Meanwhile, the total manpower requirements for nurses in HA for 2016, 2021 and 2026 are 23,575, 24,957 and 26,911 respectively under the base case scenario. The projected manpower requirements in different streams are set out in Table 2 at **Annex A**.

13. HA will continue to update the manpower projections in the light of latest developments and changes in circumstances such as the development of the current healthcare system and economic factors, major hospital projects under planning and the expansion in the capacity of the private healthcare sector in future.

Employment of part-time doctors in HA

14. HA has all along been employing part-time doctors to help strengthen the manpower support. For such employment, details of work arrangements and remunerations for individual part-time doctors are worked out by clusters in accordance with the general employment practices of HA. As at 1 June 2011, there are about 160 part-time doctors working in HA. To widen the employment of part-time doctors so as to further strengthen manpower, HA has since January 2011 piloted a new scheme for recruitment of part-time doctors for its Obstetric and Gynaecology specialty. The pilot scheme aims to standardize among various clusters the ranks of doctors to be recruited and work arrangements as well as the offer of remunerations. To address manpower shortage in the short-term, HA is planning to extend in June 2011 the pilot scheme to all specialties that mainly provide in-patient services.

15. Under the new scheme, the rank of individual part-time doctors will be determined according to the number of years of their post-specialist experience –

(a) Consultant – previous HA Consultant, or doctor with at least 10 years' post-specialist experience;

(b) Associate Consultant – previous HA Associate Consultant, or doctor with at least 5 years' post-specialist experience; and

(c) Specialist – doctor with specialist qualification.

16. Since most part-time doctors do not undertake on-call duties at present, and there is no requirement for them to take up such duties under the new scheme, part-time doctors employed under the new scheme will be offered 70% of the remunerations of full-time doctors of the same rank to account for the exemption from on-call duties. The actual remuneration will be calculated based on the number of service sessions of individual doctors. Where the doctor concerned is prepared to perform on-call duties on a part-time basis, the remuneration for such duties will be assessed individually. There is no limit on the number of part-time doctors to be recruited under the scheme. HA will

review and adjust the scheme details as appropriate in the light of the outcome of recruitment.

Improved employment packages for new nurse recruits

17. HA has taken measures in recent years to improve the employment packages for new nurse recruits. For instance, the entry pay for Registered Nurse and Enrolled Nurse was raised by two pay points in October 2007. The pay increase arising from the enhancement measure is set out at **Annex B**. In addition, to provide a more secured employment environment to facilitate continuous training and development, contract Registered Nurses with three years or more full time service in the rank and who have met the performance criteria are eligible for application of permanent terms of employment. The success rate of application from staff in the past few years is at **Annex C**. A breakdown of the number of nurses in HA by permanent, contract and temporary terms of employment in the past few years is at **Annex D**.

Projected supply of nurse graduates in the coming years

18. In the past years, the Administration has increased the number of training places for various healthcare disciplines including nurses. It is expected that the supply of nurse graduates in the next few years will be enhanced to cope with service demand. The projected number of nurse graduates from training institutions from 2011/12 to 2013/14 is at **Annex E**.

WAY FORWARD

19. HA will continue to monitor the healthcare manpower situation and make suitable arrangements in manpower planning and deployment to cope with service needs.

ADVICE SOUGHT

20. Members are invited to note the content of this paper.

Food and Health Bureau
Hospital Authority
July 2011

Annex A

Table 1: Projected Manpower Requirements for Doctors in HA by Specialty (Base Case Scenario)

Year	Manpower requirements			
	2008 (Actual)	2016	2021	2026
Accident & Emergency	434	517	554	596
Anaesthesiology	346	398	435	473
Clinical Oncology	127	148	164	181
Ear, Nose & Throat	81	91	97	102
Family Medicine	504	587	645	714
Medicine	1,119	1,246	1,319	1,455
Neurosurgery	87	96	102	107
Obstetrics & Gynaecology	216	260	266	268
Ophthalmology	144	177	194	214
Orthopaedics	297	354	366	391
Paediatrics	316	337	344	340
Pathology	203	238	254	273
Psychiatry	293	337	359	380
Radiology	238	312	356	405
Surgery^	525	622	665	712
Others	107	120	127	138
Overall	5,035	5,839	6,248	6,749

^ *Includes cardiothoracic surgery*

Table 2: Projected Manpower Requirements for Nurses in HA by Stream (Base Case Scenario)

Year	Manpower requirements			
	2008 (Actual)	2016	2021	2026
General nurses	17,518	21,119	22,370	24,186
Psychiatric nurses	1,953	2,455	2,587	2,725
Overall	19,471	23,575	24,957	26,911

Annex B

Pay increase arising from the improvement of starting salary for Registered Nurse and Enrolled Nurse in HA

		Before 1 October 2007				After 1 October 2007				Pay increase after 1 October 2007
		Starting pay point#	Rate of pay	Monthly allowance	Total pay	Starting pay point#	Rate of pay	Monthly allowance	Total pay	
Registered Nurse	**Registered Nurse (General)**	13	$17,935	$2,275	$20,210	15	$19,790	$2,510	$22,300	$2,090
	Registered Nurse (Psychiatry)	15	$19,790	$2,510	$22,300	17	$21,830	$2,769	$24,599	$2,299
Enrolled Nurse	**Enrolled Nurse (General)**	5	$10,995	$1,394	$12,389	7	$12,460	$1,580	$14,040	$1,651
	Enrolled Nurse (Psychiatry)	7	$12,460	$1,580	$14,040	9	$14,140	$1,793	$15,933	$1,893

Pay point under HA General Pay Scale

Annex C

Success rate of application from contract Registered Nurses for transferring to permanent terms of employment in HA

Financial year	Number of applications received	Number of applications approved	Success rate
2007-08	213	207	97%
2008-09	160	155	97%
2009-10	354	344	97%
2010-11	314	310	99%

Note:
Among the cases of failure, most were not supported because the staff concerned did not fulfill the required performance criteria.

Annex D

Number of nurses in HA by permanent, contract and temporary terms of employment from 2006-07 to 2010-11

Specialty	Rank Group	Manpower strength[1]																			
		2006-07				2007-08				2008-09				2009-10				2010-11			
		Perm[5]	Cont[5]	Temp[5]	Total	Perm[5]	Cont[5]	Temp[5]	Total	Perm[5]	Cont[5]	Temp[5]	Total	Perm[5]	Cont[5]	Temp[5]	Total	Perm[5]	Cont[5]	Temp[5]	Total
Medicine	APN/NS/NO/WM[2] or above	725	1		726	736	1		737	910	3		913	929	4		933	968	4	1	973
	Registered Nurse	2,753	347	10	3,110	2,679	388	18	3,085	2,488	462	39	2,989	2,447	524	41	3,012	2,430	645	47	3,122
	Enrolled Nurse / Others	1,075		7	1,082	991	4	25	1,020	898	12	43	953	815	26	66	908	729	102	74	905
	Total	***4,553***	***348***	***17***	***4,918***	***4,406***	***393***	***42***	***4,841***	***4,296***	***477***	***82***	***4,855***	***4,191***	***555***	***108***	***4,853***	***4,127***	***751***	***122***	***5,000***
Obstetric & Gynaecology	APN/NS/NO/WM[2] or above	194			194	214			214	226			226	232			232	240			240
	Registered Nurse	703	49	13	765	642	76	19	737	631	96	22	749	612	111	22	745	561	140	22	723
	Enrolled Nurse / Others	21		4	25	20		6	26	12		7	19	6		10	16	3	2	8	13
	Total	***918***	***49***	***17***	***984***	***876***	***76***	***24***	***976***	***869***	***96***	***30***	***995***	***850***	***111***	***32***	***993***	***804***	***142***	***30***	***976***
Orthopaedics & Traumatology	APN/NS/NO/WM[2] or above	127			127	128			128	168			168	171			171	173			173
	Registered Nurse	450	68	1	519	432	74	3	509	376	96	5	477	374	101	6	481	351	124	4	479
	Enrolled Nurse / Others	83		1	84	75		5	80	68	3	7	78	52	6	7	65	46	19	9	74
	Total	***660***	***68***	***2***	***730***	***635***	***74***	***8***	***717***	***612***	***99***	***12***	***723***	***597***	***107***	***13***	***717***	***570***	***143***	***13***	***726***
Paediatrics	APN/NS/NO/WM[2] or above	173			173	186			186	209	3		212	216	3		219	241	3		244
	Registered Nurse	825	104	3	932	751	119	10	880	714	142	16	871	667	160	18	845	575	213	30	817
	Enrolled Nurse / Others	32		1	33	33		13	46	33	1	8	42	29	2	8	39	29	3	8	40
	Total	***1,030***	***104***	***4***	***1,138***	***970***	***119***	***23***	***1,112***	***956***	***146***	***23***	***1,125***	***912***	***165***	***26***	***1,102***	***845***	***219***	***37***	***1,101***

Specialty	Rank Group	Manpower strength[1]																			
		2006-07				2007-08				2008-09				2009-10				2010-11			
		Perm[5]	Cont[5]	Temp[5]	Total	Perm[5]	Cont[5]	Temp[5]	Total	Perm[5]	Cont[5]	Temp[5]	Total	Perm[5]	Cont[5]	Temp[5]	Total	Perm[5]	Cont[5]	Temp[5]	Total
Psychiatry[3]	APN/NS/NO/WM[2] or above	244			244	246			246	301	1		302	314	1		315	423	1		424
	Registered Nurse	606	107	1	714	630	116	2	748	698	66	2	767	714	96	3	813	911	152	9	1,073
	Enrolled Nurse / Others	441		1	442	378		4	382	383	10	11	404	367	11	10	388	447	38	19	504
	Total	***1,291***	***107***	***2***	***1,400***	***1,254***	***116***	***6***	***1,376***	***1,382***	***77***	***13***	***1,472***	***1,395***	***108***	***13***	***1,516***	***1,781***	***191***	***29***	***2,001***
Surgery[4]	APN/NS/NO/WM[2] or above	270			270	266			266	368			368	374			374	375			375
	Registered Nurse	1,026	195	4	1,224	967	215	5	1,187	904	244	12	1,160	852	276	14	1,142	800	296	17	1,112
	Enrolled Nurse / Others	184		3	187	178		10	188	177	3	16	196	136	5	22	163	116	25	16	157
	Total	***1,480***	***195***	***7***	***1,682***	***1,411***	***215***	***15***	***1,641***	***1,449***	***247***	***29***	***1,725***	***1,362***	***281***	***36***	***1,679***	***1,291***	***321***	***32***	***1,644***
Others	APN/NS/NO/WM[2] or above	1,223	1	4	1,228	1,312	2	4	1,318	1,473	12	3	1,488	1,549	23	4	1,577	1,499	21	4	1,524
	Registered Nurse	4,274	1,215	50	5,539	4,244	1,339	111	5,694	4,092	1,253	181	5,526	4,103	1,457	249	5,810	3,730	1,764	219	5,713
	Enrolled Nurse / Others	1,469	3	121	1,593	1,362	8	229	1,599	1,233	22	358	1,612	1,165	29	426	1,619	921	151	337	1,409
	Total	***6,965***	***1,219***	***176***	***8,359***	***6,918***	***1,348***	***344***	***8,610***	***6,798***	***1,287***	***542***	***8,627***	***6,817***	***1,509***	***679***	***9,006***	***6,150***	***1,936***	***560***	***8,646***
Overall	APN/NS/NO/WM[2] or above	2,956	2	4	2,962	3,088	3	4	3,095	3,655	19	3	3,677	3,785	31	4	3,821	3,919	29	4	3,952
	Registered Nurse	10,636	2,085	82	12,803	10,344	2,327	168	12,839	9,902	2,359	278	12,540	9,769	2,725	354	12,848	9,357	3,335	348	13,040
	Enrolled Nurse / Others	3,305	3	139	3,447	3,037	12	291	3,340	2,804	51	450	3,305	2,570	79	549	3,198	2,291	340	471	3,101
	Total	***16,896***	***2,090***	***226***	***19,212***	***16,469***	***2,341***	***463***	***19,273***	***16,361***	***2,430***	***731***	***19,522***	***16,124***	***2,835***	***907***	***19,866***	***15,567***	***3,703***	***823***	***20,093***

Note:
1. The above manpower figures include permanent, contract and temporary staff on full-time equivalent basis.
2. APN: Advanced Practice Nurse; NS: Nurse Specialist; NO: Nursing Officer; WM: Ward Manager
3. The services of the psychiatric department include services for mentally handicapped.
4. The specialty includes general surgery, cardiothoracic surgery and neurosurgery.
5. Perm: permanent; Cont: contract; Temp: temporary

Annex E

Projected supply of nurse graduates from 2011/12 to 2013/14

Year of graduation	**2011/12**	**2012/13**	**2013/14**
Registered Nurse			
University Grants Committee-funded programmes	~630	~770	~830
Self-financed programmes of local universities	~225	~340	~345
HA Nursing Schools	~320	~280	~290
Registered Nurses trained in the overseas	~25	~25	~25
Sub-total for Registered Nurse	*~1,200*	*~1,415*	*~1,490*
Enrolled Nurse			
HA Nursing Schools	~510	~550	~320
Self-financed programmes of local universities	0	~160	~160
Programmes organised by private hospitals	~120	~170	~180
Enrolled Nurses trained in the overseas	~15	~15	~15
Sub-total for Enrolled Nurse	*~645*	*~895*	*~675*
Total projected supply of Registered Nurse and Enrolled Nurse	**~1,845**	**~2,310**	**~2,165**

Note:

1. The years of graduation refer to financial years.
2. The projected graduate supply figures are subject to change due to possible repeats, transfer, suspension and termination of studies by some students for various reasons.