



中華人民共和國香港特別行政區政府總部食物及衛生局  
Food and Health Bureau, Government Secretariat  
The Government of the Hong Kong Special Administrative Region  
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24 September 2015

Ms Maisie Lam  
Clerk to Panel  
Panel on Health Services  
Legislative Council Complex  
1 Legislative Council Road  
Central  
(Fax: 2185 7845)

Dear Ms Lam,

**An Overview of  
the Re-development and Expansion Plans of Public Hospitals**

I refer to item 2 of LC Paper No. CB(2)1671/14-15(02). At the Panel meeting held on 15 July 2013, the Administration was requested to provide supplementary information on the breakdown of the catchment population, the number of beds per 1 000 population, the range of services (including those services that had yet been provided because of manpower constraint or other reasons, and the respective proportion of services provided to patients within and outside the catchment area of the hospital cluster concerned), the manpower shortfall of doctors and nurses, as well as the anticipated changes in the above areas for the next fifteen years (at five-year intervals), by hospital clusters.

2. Please find at Annex our response to the above request for information.

Yours sincerely,



(Miss Angel Tong)  
for Secretary for Food and Health

c.c. Hospital Authority

(Attn. : Ms Emily Chan, Manager (Boards & Support)) Fax : 2895 0937

**Response to Information Requested at  
Health Service Panel Meeting on 15 July 2013**

**Introduction**

The public healthcare system is the cornerstone of Hong Kong's healthcare system. The Government will uphold its commitment to public healthcare system and will continue to deploy resources to expand our public healthcare infrastructure through building new hospitals and improving existing hospital facilities to cope with the ever-increasing demand for medical services.

2. The Hospital Authority (HA) is a major healthcare service provider in Hong Kong, currently managing 42 public hospitals/institutions with a total of some 27 000 hospital beds, 47 specialist outpatient clinics (SOPC) and 73 general outpatient clinics (GOPC). These facilities are organised into seven clusters according to geographical locations.

3. There is a high demand for HA services. Its throughputs in 2013-14 amounted to about 1.57 million inpatient and day inpatient<sup>1</sup> discharge episodes, 2.24 million Accident & Emergency attendances, 7.04 million specialist outpatient (clinical) attendances, 2.33 million allied health (outpatient) attendances, 6.10 million primary care attendances, and 1.99 million community outreach visits.

**Development of Hospital Clustering**

4. When HA took over the management of the public hospital system in 1991, the hospitals were disorganized and poorly coordinated. For example, some of the major acute hospitals were then supported by up to five to six "district" hospitals widely dispersed in the territory providing convalescent care. Moreover,

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<sup>1</sup> In HA, day inpatients refer to those who are admitted into hospitals for non-emergency treatment and who are discharged within the same day. Inpatients are those who have admitted into hospitals via Accident & Emergency Department or stayed for more than one day.

standards were highly variable. Many of the clinical units, where patients were transferred for convalescence, were staffed by relatively few nurses with inadequate supporting facilities and sometimes no resident doctors. In view of these problems, hospital clustering was introduced in 1992 to enhance the group relationship among hospitals located nearby.

5. In implementing the hospital clustering concept, it is recognised that there is unevenness among clusters in terms of the population of the catchment districts concerned and the needs for public healthcare, as they reflect the changing demographic characteristics and economic status of the population in each cluster which are also different. Moreover, the level and scope of services, facilities and expertise available in different clusters also vary. This is because the portfolio of hospitals was not originally planned on a cluster basis and not all clusters started at the same level. Historically, hospitals and associated facilities were mainly concentrated in the Hong Kong Island and the Kowloon Peninsula. Many of the patients residing in the under-provided regions sought medical care in the better provided urban regions. Against this historical background, the hospitals were grouped into the existing seven clusters based on historical provisions and on the best possible match of the portfolios of hospitals.

6. Since its inception, HA has made strenuous efforts to address this mismatch between the supply of hospital facilities and the need for them in each cluster through planning and construction of new hospital facilities. A good number of major capital works projects were completed over the years in the under-provided regions, including the commissioning of Pamela Youde Nethersole Eastern Hospital, North District Hospital, Tai Po Hospital, Tseung Kwan O Hospital, Kowloon Hospital Rehabilitation Block, Princess Margaret Hospital Oncology Centre, Tuen Mun Hospital Rehabilitation Block, Pok Oi Hospital New Accident & Emergency Building, Tin Shui Wai Community Health Centre, and North Lantau Hospital. "Rightsizing" of some of the major institutions in the Hong Kong Island and Kowloon regions has also been made to adjust the supply of hospital facilities among clusters.

7. Furthermore, planning of services for clusters in the HA is based on actual patients served, and not entirely on the geographically defined population in the cluster, to take account of the substantial volume of cross-cluster service utilization. Making adjustments for patient behaviours in service utilization, cluster planning takes into account a variety of factors, including the population size and demographic profile of the districts in the vicinity of each cluster, the pattern of cross-cluster utilization of services among the residents in each district, and the organization of various specialty services in the cluster (including tertiary level services).

### **Distribution of Population and Hospital Beds**

8. The Health Services Panel has requested for, amongst other things, information on the distribution of geographical population and the number of hospital beds in HA per 1 000 population across the clusters. It should be noted that the size of the catchment areas' geographical population alone, or the number of hospital beds per 1 000 geographical population for that matter, may not truly reflect the service needs of the respective clusters because of the following reasons :

- (a) the socio-demographics, particularly age profile of the population, vary among districts;
- (b) patients may receive treatment in hospitals other than those situated in their own residential districts; and
- (c) some specialized services are available only in certain hospitals, so the hospital beds in the relevant clusters are also utilized by patients from other districts or throughout the territory who require such specialized services.

These factors are explained in more details in the ensuing paragraphs.

### Catchment Population and Age Profile

9. It is a known fact that health service utilization increases with age. With regard to healthcare services provided by HA, the relative risk of an elderly person aged 65 or above being hospitalized in general specialties is about four times that of a non-elderly person.

10. Apart from higher relative risk of hospitalization, the complexities of illness of elderly patients are also more profound. According to HA information, elderly patients have a higher number of admissions per year, and longer length of stay (cumulating to 14.2 days per year on average for an elderly patient compared to 6.0 days per year for a non-elderly patient in the case of general specialties' inpatient services). This explains the fact that despite making up only 14% of the Hong Kong population, elderly people accounted for around 50% of all hospital bed days in HA in 2013.

11. It is observed that the age profile of the districts and the size of population living in old age homes therein are important factors affecting the level of healthcare services utilization in these districts. Taking general specialty bed utilization as an illustration, in 2010 the hospital bed days utilized per capita for elderly people aged 65 or above is nine times that of non-elderly people. In addition, among the elderly population, the hospital bed days utilized per capita for those living in old age homes is seven times that of elderly people living in the community.

12. Table 1 presents the distribution of the geographical population of each hospital cluster according to their catchment areas, the proportion of population that are aged 65 or above and the population that are living in old age homes.

13. The cluster with the largest catchment population is Kowloon West Cluster (KWC), followed by New Territories East Cluster (NTEC), New Territories West Cluster (NTWC) and Kowloon East Cluster (KEC). However, the clusters with

the highest percentage of elderly people at 17% are Hong Kong East Cluster (HKEC) and Kowloon Central Cluster (KCC), followed by KWC at 16%. On the other hand, Hong Kong West Cluster (HKWC), KCC and KWC have the highest proportion of population living in old age homes, at 1.4%, 1.3% and 1.1% respectively.

Table 1. Distribution and Age Profile of Geographical Population

Districts	Geographical Population Estimate in Mid-2013*	% Aged 65 or above	% Living in Old Age Homes **	Corresponding Hospital Cluster
Eastern	777 600	17%	0.9%	Hong Kong East Cluster (HKEC)
Wan Chai				
Islands (excl. Lantau Island)				
Central & Western	534 100	15%	1.4%	Hong Kong West Cluster (HKWC)
Southern				
Kowloon City	508 800	17%	1.3%	Kowloon Central Cluster (KCC)
Yau Tsim				
Kwun Tong	1 088 100	14%	0.6%	Kowloon East Cluster (KEC)
Sai Kung				
Mongkok				
Wong Tai Sin	1 931 800	16%	1.1%	Kowloon West Cluster (KWC)
Sham Shui Po				
Kwai Tsing				
Tsuen Wan				
Lantau Island				
Sha Tin	1 258 200	12%	0.9%	New Territories East Cluster (NTEC)
Tai Po				
North				
Tuen Mun	1 088 300	11%	1.0%	New Territories West Cluster (NTWC)
Yuen Long				
<b>Overall Hong Kong</b>	<b>7 187 500</b>	<b>14%</b>	<b>1.0%</b>	

- \* The statistical delineation of the geographical populations for KEC / NTEC and HKEC / KWC has been revised respectively in view of the new services provided to residents of the nearby districts by Tseung Kwan O Hospital and North Lantau Hospital since their commissioning of services. The population figures are based on the population estimate from the Census & Statistics Department. Individual figures may not add up to the total due to rounding and inclusion of marine population.
- \*\* Based on 2011 Population Census by the Census & Statistics Department which is the latest available data.

### Cross-Cluster Service Utilization

14. Cross-cluster utilization of public healthcare services is not uncommon for various reasons. For example, some patients are referred to receive specialized tertiary services which are only available in other clusters; and some others who have moved to a different district may still wish to seek services in the hospitals they used to attend in order to be followed up by the same team of medical staff.

15. Tables 2 and 3 below set out the cross-cluster utilization of HA's inpatient and day inpatient services and specialist outpatient service respectively in 2013-14. The two tables present the proportion of the respective cluster's service throughputs that are utilized by patients living within or outside the catchment districts of the cluster. It is observed that, with the exception of KCC and to a smaller extent HKWC, the vast majority of the services in a cluster are utilized by patients living within its catchment districts.

16. In particular, the KCC is serving a large proportion of patients who are residing outside its catchment districts. The majority of KCC's inpatient and day inpatient services (65%) are utilized by patients living outside its catchment areas, although 48% are used by patients from the neighbouring districts of Wong Tai Sin (28%), Kwun Tong (11%), Sham Shui Po (5%) and Mongkok (4%). Similar pattern is observed for specialist outpatient service, where 67% of KCC's attendances are from patients living outside its catchment districts. This



phenomenon may be due to its central location in the Kowloon Region, and the fact that Queen Elizabeth Hospital, its flagship hospital, is among the largest hospitals under the management of HA and a tertiary referral centre serving cases throughout Hong Kong.

Table 2. Cross-Cluster Utilization of Inpatient and Day Inpatient Services (2013-14)

Catchment Districts	Hospital Cluster	Proportion of the Cluster's inpatient and day inpatient discharge episodes* utilized by patients living within/outside the districts	
		within	Outside
Eastern	HKEC	87%	13% (4% Southern)
Wan Chai			
Islands (excl. Lantau Island)			
Central & Western	HKWC	65%	35% (7% Eastern, 3% Wan Chai)
Southern			
Kowloon City	KCC	35%	65% (28% Wong Tai Sin, 11% Kwun Tong, 5% Sham Shui Po, 4% Mongkok)
Yau Tsim			
Kwun Tong	KEC	90%	10% (5% Wong Tai Sin)
Sai Kung			
Mongkok	KWC	86%	14% (3% Kowloon City, 2% Yau Tsim)
Wong Tai Sin			
Sham Shui Po			
Kwai Tsing			
Tsuen Wan			
Lantau Island			
Sha Tin	NTEC	88%	12%
Tai Po			
North			
Tuen Mun	NTWC	95%	5%
Yuen Long			

\* Referring to discharges and deaths

Table 3. Cross-Cluster Utilization of Specialist Outpatient Service (2013-14)

Catchment Districts	Hospital Cluster	Proportion of the Cluster's specialist outpatient attendances utilized by patients living within/outside the districts	
		within	Outside
Eastern	HKEC	85%	15% (3% Southern)
Wan Chai			
Islands (excl. Lantau Island)			
Central & Western	HKWC	62%	38% (9% Eastern, 3% Wan Chai)
Southern			
Kowloon City	KCC	33%	67% (22% Wong Tai Sin, 11% Kwun Tong, 6% Sham Shui Po, 5% Mongkok)
Yau Tsim			
Kwun Tong	KEC	90%	10% (4% Wong Tai Sin)
Sai Kung			
Mongkok	KWC	85%	15% (3% Kowloon City, 1% Yau Tsim)
Wong Tai Sin			
Sham Shui Po			
Kwai Tsing			
Tsuen Wan			
Lantau Island			
Sha Tin	NTEC	86%	14%
Tai Po			
North			
Tuen Mun	NTWC	95%	5%
Yuen Long			

## Scope of Service

17. Under the clustering arrangement, patients in each cluster can have access to different types of care across hospitals within the cluster in different stages of their illness. Comprehensive secondary and tertiary services are provided through clear role delineation and service coordination amongst individual hospitals within the cluster and through networking of services across clusters.

18. A full range of hospital services covering acute, convalescent and rehabilitation services are available to patients in every cluster, including the following major specialist services:

- A&E
- Anaesthesiology
- Ear, Nose and Throat
- Intensive Care
- Medicine and Geriatrics
- Obstetrics and Gynaecology
- Ophthalmology
- Orthopaedics and Traumatology
- Paediatrics and Adolescent Medicine
- Pathology
- Psychiatry
- Radiology
- Surgery

19. For those specialist services that have a relatively small demand and the delivery of which require some state-of-the-art technologies, equipment and comprehensive supporting facilities, they are provided by tertiary service centres at designated hospitals. Examples of specialized services and the relevant hospitals providing such services are set out below:

- (a) Liver transplant – Queen Mary Hospital (HKWC)
- (b) Kidney transplant – Queen Mary Hospital (HKWC), Queen Elizabeth Hospital (KCC), Princess Margaret Hospital (KWC) and Prince of Wales Hospital (NTEC)
- (c) Paediatric surgery – Queen Mary Hospital, Queen Elizabeth Hospital/United Christian Hospital, Prince of Wales Hospital
- (d) Cardiothoracic Surgery – Queen Mary Hospital, Queen Elizabeth Hospital and Prince of Wales Hospital
- (e) Management of major burns – Queen Mary Hospital and Prince of Wales Hospital

### **Bed Capacity**

20. The existing general bed capacity of different clusters as well as the number of general bed capacity per 1 000 geographical population in their catchment districts are set out in Table 4.

21. It is observed that KCC and HKWC have the highest number of bed capacity per 1 000 geographical population, at 5.9 and 5.4 respectively. This could be accounted for by a combination of factors, including the fact that these two clusters have the highest proportion of catchment population living in old age homes (at 1.3% and 1.4% respectively); they both serve a very high proportion of patients living in districts outside their catchment areas (at 65% and 35% respectively for inpatient and day inpatient services); and they are providing highly specialized services for patients throughout the territory through the tertiary referral centres of Queen Elizabeth Hospital and Queen Mary Hospital respectively.

Table 4. Existing General Bed Capacity of Hospital Clusters

<b>Hospital Cluster</b>	<b>Bed Capacity as at 31.3.2014* (General Beds**)</b>	<b>General Bed Capacity per 1 000 Geographical Population of Catchment Districts<sup>^</sup></b>	<b>Catchment Districts</b>
HKEC	2 004	2.6	Eastern, Wan Chai, Islands (excl. Lantau Island)
HKWC	2 860	5.4	Central & Western, Southern
KCC	3 005	5.9	Kowloon City, Yau Tsim
KEC	2 384	2.2	Kwun Tong, Sai Kung
KWC	5 534	2.9	Mongkok, Wong Tai Sin, Sham Shui Po, Kwai Tsing, Tsuen Wan, Lantau Island
NTEC	3 477	2.8	Sha Tin, Tai Po, North
NTWC	2 672	2.5	Tuen Mun, Yuen Long
<b>Overall HA</b>	<b>21 936</b>	<b>3.1</b>	

\* Refers to the number of beds according to planned capacity, including beds that are yet to be opened.

\*\* General beds refer to acute, convalescent and rehabilitation beds (infirmarary beds and beds for mentally ill / handicapped are not included).

<sup>^</sup> Based on the distribution of geographical population in mid-2013 as presented in Table 1.

22. Table 5 sets out the projected geographical population of the various districts in 2021 based on the latest publicly available data and the planned bed capacity of the hospital clusters in the same period. The planned capacity includes additional beds that could be accommodated in existing hospitals through ward renovations that have been planned, and the additional beds that could be provided through hospital development/redevelopment projects that have already been approved with funding commitment and are currently underway or expected to be completed by 2021. Examples of these hospital development projects are the construction of new Tin Shui Wai Hospital and Hong Kong Children's Hospital, and the expansion of United Christian Hospital.

23. Compared to the bed situation in end-March 2014 (Table 4), it is noted that KEC will have the greatest increase in planned capacity by 2021 (Table 5), with an addition of 564 beds arising mainly from the commissioning of the expanded United Christian Hospital. Another cluster expected to have a big increase of over 500 additional beds is KCC, which is mainly contributed by the development of Hong Kong Children's Hospital at the Kai Tak Redevelopment Area within the cluster's catchment area.

Table 5. Distribution of Projected Geographical Population and Planned General Bed Capacity of Hospital Clusters in 2021

<b>Catchment District</b>	<b>Projected Geographical Population of Catchment Districts in 2021<sup>#</sup></b>	<b>Hospital Cluster</b>	<b>Planned Bed Capacity* (General Beds<sup>**</sup>) in 2021</b>	<b>General Bed Capacity per 1000 Geographical Population of Catchment Districts</b>
Eastern, Wan Chai, Islands (excl. Lantau Island)	746 200	HKEC	2 244	3.0
Central & Western, Southern	513 700	HKWC	2 860	5.6
Kowloon City, Yau Tsim	562 000	KCC	3 533	6.3
Kwun Tong, Sai Kung	1 181 200	KEC	2 948	2.5
Mongkok, Wong Tai Sin, Sham Shui Po, Kwai Tsing, Tsuen Wan, Lantau Island	2 040 900	KWC	5 534	2.7
Sha Tin, Tai Po, North	1 414 000	NTEC	3 857	2.7
Tuen Mun, Yuen Long	1 203 500	NTWC	3 002	2.5
<b>Overall Hong Kong</b>	<b>7 662 000</b>	<b>Overall HA</b>	<b>23 978</b>	<b>3.1</b>

- # The projected population figures are based on the latest projection by the Planning Department. Individual figures may not add up to the total due to rounding and inclusion of marine population.
- \* Refers to the number of beds according to planned capacity up to 2021. These include existing beds and beds that are yet to be opened, additional beds that could be accommodated in existing hospitals through planned ward renovations, and planned additional beds that could be provided through hospital development projects already approved with funding commitment which are currently underway or expected to be completed by 2021 (e.g. new Tin Shui Wai Hospital, Hong Kong Children's Hospital, expansion of United Christian Hospital, etc.).
- \*\* General beds refer to acute, convalescent and rehabilitation beds (infirmery beds and beds for mentally ill / handicapped are not included).

### **Manpower Situation**

24. As at December 2014, the staff strength of HA was 69 849 (full-time equivalents), including 5 502 doctors, 23 527 nurses and 6 885 allied health professionals, amongst others. As with other healthcare providers throughout the world, HA is facing manpower shortage, especially in doctors and nurses. The shortfall of doctor manpower in 2014-15 was around 340, while the nursing manpower shortfall in acute setting was around 500. Breakdown of shortfall by hospital clusters is not available as healthcare personnel are deployed to different hospitals according to operational needs. To better meet the community's healthcare needs, HA is currently conducting the latest round of manpower requirement projection, taking into account future service demands as well as the projected supply and demand of doctors, nurses and allied health professionals.