

For discussion
on 29 August 2002

**LegCo Panel on Health Services
Special Meeting to be held on 29 August 2002**

Organ Transplant Arrangements of the Hospital Authority

Purpose

This paper briefs Members on the organ transplant arrangements of the Hospital Authority (HA) and the review HA has recently conducted on organ transplant arrangements.

Organ Donation in Hong Kong

2. In Hong Kong, organs/tissues that could be used for transplantation include kidney, liver, heart, lung, cornea, skin and bone. Since 1991, a total of 2 968 pieces of tissues/organs were harvested by the HA transplant teams and a total of 415 pieces of organs/tissues were harvested in 2001. The number of organ/tissue donations in public hospitals during the period 1997 to June 2002 is at Appendix 1.

Mechanism for Procurement and Distribution of Donated Organs and Tissues

3. Cadaveric organ procurement and transplantations in HA hospitals are coordinated by four transplant coordinators, with each responsible for a specific network of public hospitals. These transplant coordinators are responsible for:

- (a) identifying potential cadaveric donors;
- (b) assisting clinical staff in maintaining optimal function of the tissue/organ prior to harvesting;
- (c) counselling relatives of potential donors and obtaining their consent for organ donation;

- (d) liaising with clinical and laboratory staff in the process of organ procurement;
- (e) organizing transportation of donated organs to recipient hospitals; and
- (f) coordinating inter-hospital communication on organ transplant issues.

4. Procurement of donated organs/tissues is coordinated by the transplant coordinators through the established networks of public hospitals. In addition, two private hospitals have joined the organ donation network of HA to contribute and share organs for transplant. The distribution mechanism of different donated organs and tissues in public hospitals are described below.

Renal Transplantations

5. Kidney transplantation is the definitive treatment for patients diagnosed to have end stage renal failure when their renal functions fall to one tenth of the normal condition. These patients are maintained either by haemodialysis or peritoneal dialysis while waiting for a donated organ. There are four renal transplant centers in HA, namely, Prince of Wales Hospital (PWH), Queen Elizabeth Hospital (QEH), Princess Margaret Hospital (PMH) and Queen Mary Hospital (QMH), each serving patients from a specific network of public hospitals. HA currently runs a central registration system for all patients waiting for renal transplantations. Donated kidneys are distributed to patients through this central mechanism.

Corneal Transplantations

6. Procurement and distribution of eye tissues (including cornea) are centrally coordinated by the HA Lions Eye Bank. Corneal transplantations in HA are carried out at six public hospitals, namely, Tuen Mun Hospital (TMH), Caritas Medical Centre, PWH, Hong Kong Eye Hospital, QMH and Tung Wah Eastern Hospital. The HA Lions Eye Bank centrally coordinates the distribution of eye tissues to patients waiting for transplantations. Most corneal transplantations are performed as elective operations but priority will be accorded to patients who require emergency transplant.

Transplantations of skin tissues

7. Cadaveric skin tissues are required for patients suffering from severe burns. There are currently two burns units (i.e. PWH and QMH) in HA which take care of patients with severe burns. In addition, five burns facilities located in PMH, Pamela Youde Nethersole Eastern Hospital, TMH, Kwong Wah Hospital and QEH are capable of looking after patients with moderately severe burns. That apart, all HA hospitals with surgical departments could take care of patients with minor burns. Donated skin tissues are stored in two skin banks located in QMH and PWH. In general, hospitals taking care of burns patients could obtain skin tissues from the two skin banks as and when required. HA currently has a mechanism in place to arrange transfer of skin in a timely manner whenever the need arises. There is currently no waiting list for skin in HA.

Heart and Lung Transplantations

8. Grantham Hospital (GH) is the only designated center for heart and lung transplantations in Hong Kong. All patients with end stage heart and lung disease are referred to GH for evaluation and the cardio-thoracic surgeons of GH are responsible for harvesting heart and lung in the territory. GH currently administers a waiting list for heart/lung transplantations. Priority accorded to patients will be determined having regard to the clinical urgency of the patients and the compatibility of the donated organs with the patients.

Bone Transplantations

9. Donated bones mainly come from two sources, namely, femoral heads removed from living patients for therapeutic reasons and bones removed from cadaveric source.

(a) Supply of femoral heads

Bone tissues are removed from femoral heads of living patients with fracture neck of femur who require replacement by prosthesis. There are a total of 11 bone banks for femoral heads in HA. Since fracture neck of femur is a relatively common condition in elderly patients, there is no shortage of supply of bone tissues from this source.

(b) Supply of bones from cadaveric source

Bones removed from cadaveric sources are mostly long bones. Long bones are required for reconstructive surgery, mostly for patients with bone tumour. There are currently two long bone banks in PWH and QMH that are responsible for the storage and supply of long bones to public hospitals.

Similar to the arrangement of skin tissues, HA has an established mechanism to arrange for transfer of bone tissues in a timely manner whenever such need arises. It should be noted that where no suitable long bone is available, artificial prosthesis could be used instead.

Liver transplantations

10. Liver transplantation is a highly specialized field in surgery, and requires substantial support from other multidisciplinary teams of specialists, including physicians, surgeons, clinical psychologists, intensivists and radiologists. The first cadaveric and living liver transplantations in Hong Kong were performed by QMH in 1991 and 1993 respectively. Like all other transplant and clinical service programmes, the liver transplant programme in QMH initially started as a pioneer programme. With increasing experience in the transplant operation and availability of more effective immunosuppressive therapy and diagnostic techniques, the liver transplant programme at QMH is now firmly established and QMH is currently the designated liver transplant center in HA, performing the bulk of the liver transplantations in the territory. Such an arrangement is in line with the recommendations of the review on the provision of surgical services in HA in 2000 conducted by a panel of international experts who advised that the provision of highly sophisticated services, such as liver transplantation, should be concentrated in one designated center in Hong Kong.

11. Liver transplantation is an effective procedure for treating patients with liver failure. As such, HA supports the establishment of a liver transplant programme in QMH and has designated QMH as HA's liver transplant center. At the same time, liver transplant is being developed in PWH. Under such an arrangement, QMH carries out the bulk of the liver transplantations in Hong Kong. The number of liver transplantations performed in QMH increased from 24 in 1996 to more than 50 in 2001. On the other hand, the number of liver

transplantations performed in PWH in general remained at less than 10 per year. The total number of liver transplantations performed by QMH and PWH from 1996 to 2002 were 213 and 47 respectively (details at Appendix 2). HA has been monitoring the liver transplant programme in PWH as the hospital gradually accumulates experience in this field. There has been an established arrangement between QMH and PWH in that where a donated liver is not taken up by one hospital, the organ would be arranged for transfer to the other hospital.

Brief Account of the Liver Transplant Incident on 15 June 2002

12. Liver transplantations are highly specialized procedures which require the support by teams of specialists, including staff from the operation theatre and the intensive care unit. Taking into consideration the need to balance competing priorities of different services in the cluster and the number of liver transplantations (amounting to six) performed by PWH in 2001, in mid June this year the cluster management of the New Territories East (NTE) cluster started to plan the liver transplantation programme of PWH for the 2002/03 financial year. On 13 June 2002, the management of the PWH advised its liver transplant team to work towards performing one liver transplant per month for the remaining months of 2002/03. The decision has been made on the understanding that in line with the established mechanism, any donated liver not taken up by PWH would be transferred to QMH.

13. The PWH liver transplant team carried out two liver transplantations on 1 and 11 June 2002 respectively. A cadaveric liver became available on 14 June and was received by the QMH liver transplant team. While the QMH liver transplant team was performing the transplant operation on 15 June, another cadaveric liver became available in QEH. Since the QMH liver transplant team was engaged in transplanting the liver donated on 14 June, the PWH team was approached for the possibility of receiving the donated liver from QEH for transplantation. Due to the need to balance competing priorities of service delivery, the hospital management decided that the potential donation would not be pursued. On the other hand, the unstable clinical conditions of the donor in QEH could not allow the harvesting of the liver to wait until the QMH transplant team has finished its transplant operation and would then be ready to perform another liver transplantation. As a result, the donated liver was unfortunately not harvested.

Review of the incident

14. Investigations by HA revealed that the PWH transplant team has performed a total of eight liver transplantations in the first six months of 2002. The increase in the number of liver transplantations has caused significant strain to the clinical staff and resources in other essential services of the hospital and concerns have been expressed to the hospital management. For better planning of resource utilization in the remaining months of the 2002/03 financial year, the hospital management decided to work towards keeping the number of liver transplantations at one per month. However, circumstances which would warrant the exercise of flexibility have not been discussed.

15. HA has taken the opportunity to review the overall coordination mechanism for organ donations in public hospitals. Organ procurement and distribution have always been carried out effectively by the transplant teams according to the established networks of public hospitals and clinical guidelines under the overall coordination of HA Head Office. There are also established procedures for organ sharing, inter-hospital transfers of organs/tissues, and selection of recipients. As such decisions often involve a lot of clinical judgment relating to the clinical conditions and special circumstances of both the donor and the recipient patient, procurement and distribution of donated organs/tissues are more effectively carried out through the professional network of clinicians rather than through central administrative staff. HA Head Office has all along been more involved in issues concerning seeking consent from patient relatives, legal issues and inter-hospital communication on organ transplantations. It is recognized that timely intervention of the decision-making pertaining to this particular incident at the central level could have potentially avoided the wastage of the donated organ, and there is room for improvement in the existing coordination mechanism.

Way Forward

16. In the light of the incident on 15 June 2002, HA has taken the following measures to improve the mechanism on organ procurement and distribution:

- (a) HA Head Office's co-ordination in the clinical decisions on organ donation has been reinforced in order to ensure that resources could

be mobilized in a timely manner to avoid wastage of organs for cases involving inter-hospital arrangements. HA Head Office will work out a mechanism for determining the priority of liver transplant recipients in QMH and PWH to ensure that the donated livers will go to the most deserved patients.

- (b) The inflexible arrangement of restricting the number of liver transplantations in PWH has been lifted. With QMH remaining as the designated center for liver transplantation, PWH will continue to develop its liver transplant programme taking into consideration the clinical urgency of the transplants, the availability of resources and other special circumstances on the donations of the organs.
- (c) HA will continue to monitor the development and clinical outcomes of liver transplantation in PWH and QMH and review its arrangement for the designation of liver transplant centers.

Advice Sought

17. Members are requested to note the content of this paper.

Health, Welfare and Food Bureau
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Appendix 1

**Number of Organ / Tissue Donations in Public Hospital
During 1997 to June 2002**

Organ/tissue	1997	1998	1999	2000	2001	First six months of 2002
Kidney						
Cadaveric	47	33	47	41	48	43
Living	23	37	24	19	14	3
Liver						
Cadaveric	14	15	19	18	23	17
Living	1	12	17	36	37	24
Heart	7	2	6	6	10	7
Lung	1	1	2	0	1	2
Cornea (pieces)	204	253	141	166	239	158
Skin	17	25	37	45	37	12
Bone	6	3	8	6	6	4

Appendix 2

**Number of Liver Transplantations Carried Out
by Queen Mary Hospital and Prince of Wales Hospital
During 1996 to June 2002**

Year \ Hospital	Queen Mary Hospital		Prince of Wales Hospital	
	Cadaveric	Living	Cadaveric	Living
1996	10	14	2	1
1997	9	1	5	0
1998	14	9	1	3
1999	13	15	6	2
2000	9	32	9	4
2001	18	36	5	1
First six months of 2002	13	20	4	4
Total	86	127	32	15