A PLAN TO CONSOLIDATE, INTEGRATE AND EXPAND DHS HEALTH DELIVERY SYSTEM CAPABILITIES TO EMPHASIZE AMBULATORY CARE

PART II: INPATIENT CARE — PROVIDING OVERFLOW CAPACITY TO THE LAC+USC REPLACEMENT HOSPITAL

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EXECUTIVE SUMMARY

This is the second in a two-part plan for reconfiguration of the DHS health-care delivery system. Part I addresses ambulatory care. This part deals with planning for the provision of overflow inpatient capacity for the LAC+USC replacement facility.

The purpose of this plan is to provide a framework for determining the nature and extent of overflow capacity necessary to enable LAC+USC to maintain access to indigent residents and maintain its role as the region's major trauma and emergency-services provider.

The guiding principle is to utilize existing Department of Health Services (DHS) facilities to the fullest extent, within the constraints of reasonable geographic accessibility and continuity of care, and, once this is accomplished, to contract for additional services with the private sector as needed.

The purpose here is to design an approach to meeting future capacity shortfalls, if any, through the most cost-effective means available (i.e., utilizing available system-wide DHS capacity to its fullest, given health delivery and geographic constraints, and supplementing this capacity with private-sector contracting if and as needed).

Clearly, DHS is not now able to meet all inpatient, or outpatient, health-care needs of the medically-indigent population residing in Los Angeles County; nor is it reasonable to expect these needs to be fully met by DHS in the future. What can be expected, however, is that DHS meet as much need as possible with its available resources. Part I and Part II of this Plan attempt to provide a necessary framework for meeting these future needs through: (1) targeted expansions in ambulatory-care capabilities (Part I); and (2) efficient use and coordination of its inpatient capacity, combined with private-sector contracting.

This plan begins this process by identifying available capacity in other (than LAC+USC) DHS hospitals, and allocates this availability to the projected LAC+USC patient population. It

must be emphasized that the replacement hospital will not be operational until 2007. Thus, any projected capacity shortfall will not occur for another nine years. Needless to say, projections this far into the future have much less reliability than those for shorter time frames. The findings reported here are based on the best available data as of this date.

The exact levels of inpatient overflow capacity needed, and their distribution between other DHS facilities and the private sector, do not have to be determined in the near term; the approximate levels set forth in this document should be sufficient to guide policy at this time. DHS planning efforts are being substantially upgraded. The Director of Public Health will coordinate the development of all Department plans, and these plans will be included in the Lewin Group post-waiver strategic planning effort.

Preliminary results suggest that there is considerable potential for DHS hospitals to internally provide a substantial amount of the overflow capacity (nearly all) that will be required by the LAC+USC replacement facility. At the 600-bed level, it is projected that approximately 50 private-sector beds would be necessary to complement DHS capacity.

Major conclusions and recommendations are as follows:

CONCLUSIONS

- ***A 600-bed LAC+USC replacement hospital will most likely require augmentation by other hospitals (public and, possibly, private).***

- ***There is sufficient inpatient capacity within the DHS system to reduce the need for private sector contracting to minimal levels (i.e., most likely less than 50 beds), while allowing patients to obtain care in DHS hospitals near their place of residence.***

- ***Based on: (1) projected demand for LAC+USC inpatient services; (2) available capacity in other DHS hospitals; and (3) the geographic origin of current LAC+USC patients; outside contracting should require less than 35 med/surg beds and less than 20 psychiatric beds. Demand for other services should be fully accommodated within the DHS system.***

RECOMMENDATIONS

- ***Maximum use should be made of existing DHS resources before contracting with hospitals outside the county system.***

- ***Use of available beds in other DHS facilities should be guided by each patient's medical need and area of residence. <u>As a general rule</u>, patients who would otherwise use LAC+USC should not be required to travel to another DHS hospital unless that hospital is no further (or not significantly further) from their residence than is LAC+USC.***

- ***Efforts should begin in the coming fiscal year to determine the best methods to alter inpatient use patterns to more fully utilize capacity in other DHS hospitals. A plan should be developed for the phased shifting of a small proportion of the LAC+USC patient load to other DHS hospitals.***

- ***To the extent medically appropriate capacity is not available at LAC+USC or in a DHS hospital located within a reasonable distance from the patient's residence, capacity augmentation should be provided through private-sector contracting, within the financial constraints imposed on DHS.***

I. PURPOSE

The purpose of this plan is to determine the most cost-effective methods to complement service availability at the LAC+USC Medical Center replacement facility, in order to maintain access for the unsponsored, indigent population historically dependent on LAC+USC for their health-care needs. On November 12, 1997, the Board of Supervisors approved a resolution to replace LAC+USC at a capacity level not to exceed 600 beds. The replacement hospital is to be complemented by increased community-based outpatient facilities to the extent funding is available.

While the replacement hospital will have less capacity than the current facility, its considerable trauma and emergency-service capabilities are expected to be maintained at close to current levels. In addition, the replacement hospital will emphasize high-end, specialized acute care; services that may be provided through overflow contracting will be of a more routine nature, and more widely available in the community.

Clearly, DHS is not now able to meet all inpatient, or outpatient, health-care needs of the medically-indigent population residing in Los Angeles County; nor is it reasonable to expect these needs to be fully met by DHS in the future. What can be expected, however, is that DHS meet as much need as possible with its available resources. Part I and Part II of this Plan attempt to provide a necessary framework for meeting these future needs through: (1) targeted expansions in ambulatory-care capabilities (Part I); and (2) efficient use and coordination of its inpatient capacity, combined with private-sector contracting (Part II).

According to most recent studies projecting capacity requirements for LAC+USC, demand for services will exceed capacity at 600 beds.[1] Thus, it is essential that arrangements be

[1] See Harvey M. Rose Accountancy Corporation, *Evaluation of the Los Angeles Department of Health Services Facilities Replacement and Improvement Plan*, October 1995; Lewin-VHI, Inc., *Study Report Prepared for the Steering Committee for the Study of Los Angeles Health Resources*, May 1995; Tranquada, Robert E., M.D. and Henry W. Zaretsky, Ph.D., *County of Los Angeles Health Facilities Improvement and Replacement Plan Analysis*, October 1996; and The Lewin Group, *LA Model: Inpatient and Emergency Services Component Update*, May 19,

made to provide additional capacity in other locations, within the Department of Health Services (DHS) system, through private-sector providers, or both. This plan seeks to: (1) determine which LAC+USC services are likely to need augmentation; (2) estimate the extent of such augmentation; and (3) identify the most cost-effective mechanisms to provide the needed overflow capacity.

In terms of planning for LAC+USC overflow capacity, the major priorities should be to:

- Centralize tertiary-level services at LAC+USC.
- Configure LAC+USC so that, to the extent feasible, services that would require overflow arrangements are readily available in other DHS facilities and geographically accessible to indigents currently using such services at LAC+USC.
- Assure that, for those services not geographically accessible within the DHS system, there is ready availability in the private sector in the LAC+USC service area.

DHS planning efforts are being substantially upgraded. The Director of Public Health will coordinate the development of all Department plans, and these plans will be included in the Lewin Group post-waiver strategic planning effort.

II. PROCEDURES

The starting points are as follows:

(1) The 600-bed overall capacity level at the LAC+USC replacement hospital;

(2) The planned bed configuration, based on evolving medical-practice standards, including the growing acuity of inpatients as more and more "routine" care is shifted to non-acute settings, and maintenance of the LAC+USC mission (i.e., principal trauma and emergency services provider and major source of inpatient care for the indigent population in the County), and developed to assure maximum flexibility in moving between bed categories[2];

1997.

[2] The planned bed configurations and their underlying principles are presented in "Revised Service Configuration for the LAC+USC Medical Center Replacement Project," memorandum from Mark Finucane to David E. Janssen and Harry W. Stone, January 23, 1998.

(3) For each bed category, an estimate of capacity available to LAC+USC patients in each of the other DHS hospitals (i.e., the difference between current available and staffed beds);

(4) The current patient origin of LAC+USC patients according to DHS service area, and use levels according to bed category; and

(5) Estimates of demand for inpatient services at LAC+USC for the year 2005, according to bed type.

Given the above, LAC+USC inpatient demand estimates are then compared to planned capacity to yield estimates of overflow contracting (within DHS and with the private sector) requirements by bed type. For each service showing an excess demand (relative to planned capacity), a comparison is made with available capacity in the other DHS hospitals. The available capacity in each of the other hospitals is then compared to projected LAC+USC patient days on behalf of patients residing in these other hospitals' service areas. Projected LAC+USC patient days according to hospital geographic service area are derived from the service area distribution of current LAC+USC patients, forced to the projected LAC+USC demand estimate by bed type. This process yields estimates of the excess LAC+USC demand that could reasonably be accommodated in each of the other DHS hospitals.

The projected volume that cannot be accommodated within the DHS system provides an indication of the extent of private-sector contracting that will be necessary. A pilot project to test the feasibility of private-sector contracting is currently being implemented. A request for proposal was issued on March 2, 1998 soliciting interest and bids. The project is envisaged to involve multi-year contracts for approximately 50 beds across two contracting hospitals. It is restricted to indigent patients, who would be screened through LAC+USC prior to referral to the contracting hospitals.

The critical assumptions underlying this approach include:

(1) The geographic distribution of DHS patients will not change materially by 2005, as indicated by the present patient origin patterns of LAC+USC patients according to bed type;

(2) Through improved patient management and education, as outlined in Part I of this Plan (Ambulatory Care), substantial portions of patients currently migrating into the LAC+USC service area for non-emergency services will elect to access services in other DHS facilities closer to their residence, as medically appropriate;

(3) The costs of making unused capacity in other DHS hospitals available for occupancy will be less than the costs of contracting with the private sector for equivalent services. In most cases, staffed beds are held below available beds

because of budgetary curtailments. Assumptions are made that: (1) DHS capacity available to LAC+USC will be at levels currently identified; (2) this capacity will be available for occupancy when needed; and (3) the costs of making these beds available will be less than the costs of contracting with the private sector for equivalent beds; and

(4) The DHS system will be able to generate sufficient Medi-Cal revenue to support a limited private-sector contracting program.

III. PLANNED CAPACITY VERSUS PROJECTED DEMAND

Table A1, in Appendix A, estimates potential bed availability to LAC+USC according to bed type in each of the other DHS hospitals, based on current data. Bed availability to LAC+USC is defined as the difference between available beds and staffed beds. All three hospitals have substantial available capacity in med/surg. Of 162 med/surg beds available to LAC+USC among all three hospitals, 59 are at Harbor, 62 at Olive View and 41 at King/Drew. At 84 percent average occupancy, these beds could collectively accommodate an ADC of 136.

Table A2 relates this bed availability to the proposed bed configuration at LAC+USC at the 600-bed level. The table is structured as follows:

(1) Column 1 displays the proposed bed configuration for the 600-bed replacement facility;

(2) Column 2 provides the projected ADC for the current fiscal year (excluding bassinets);

(3) Column 3 presents target occupancy percentages based on previous transmittals to the Board;

(4) Column 4 applies these occupancy targets to the 600-bed configuration to arrive at target ADCs for each service;

(5) Column 5 shows the difference between current (FY 97-98) ADCs and target ADCs;

(6) Column 6 displays the beds available to LAC+USC in other DHS hospitals, from Table A1 (note that ICU in Table A2 includes CCU);

(7) Column 7 converts these available beds to ADC through applying the Column 3 occupancy targets;

(8) Column 8 projects ADC for 2005 through use of the adjustment factors presented in Column 9;

(9) Column 10 displays the adjustment factors. These factors, which are still preliminary at this writing, are an attempt to project demand for

LAC+USC inpatient services to the year 2005. Their rationale is as follows:

- 130 percent for ICU is the net effect of reduced overall census and greater acuity of remaining patients.[3]
- 75 percent for med/surg reflects lower market share and per-capita utilization on the part of Medi-Cal patients, constant market share and slightly reduced per-capita utilization on the part of indigent patients, and a shift away from med/surg to ICU.
- 60 percent for pediatrics, 71 percent for pediatric intensive care, 72 percent for NICU and 66 percent for OB-Gyn, reflect the high Medi-Cal (primarily those aid categories mandated to join managed-care plans) mix, and increasing competition for these patients.
- 95 percent for psychiatric reflects the net effect of improved patient management and the likely shift in emphasis away from the criminal justice system to the health sector.

Total demand is projected for an ADC of 610 (column 8), which at 85 percent occupancy, would require 718 beds, close to the range of previous independent projections.[4] A more complete discussion of these adjustment factors is provided in Appendix B. These market-share and utilization-rate assumptions differ in two respects from those employed by Tranquada and Zaretsky (1996). The latter are based on data up to 1996. We now have access to current LAC+USC census data. The more recent data show a continuing decline in inpatient volume. That decline, however, is consistent with projections presented in the Tranquada-Zaretsky report. For example, in Table 10 of the report one scenario projects an ADC for 1998 of 758.[5] This compares with a current DHS staff projection for the current fiscal year, based on data through February 1998, of 765. The bulk of the recent decline is attributed to losses in Medi-Cal obstetrics volume to competing private hospitals. The report

[3] It should be noted that some med/surg patients are currently placed in Closely Monitored Area (CMA) beds (which are licensed as med/surg beds). These areas provide a level of care closer to ICU than med/surg. Thus, the current census data understate the acuity level of med/surg patients. In the replacement facility no CMAs are planned.

[4] Tranquada and Zaretsky (1996) projected bed need in the range of 750 to 780, using a 90-percent occupancy target. At 90 percent occupancy, the 610 ADC would require 678 beds.

[5] Tranquada and Zaretsky (1996), Table 10, p. 34.

assumed a drop in market share of Medi-Cal managed-care enrollees of 50 percent, and a drop in per-capita utilization of that group of 20 percent. Here, those assumptions are revised to 25 percent and 30 percent, respectively. The former is based on an expectation that the bulk of the Medi-Cal market-share loss has already occurred. The latter is based on recent anecdotal evidence that Medi-Cal managed care has resulted in per-capita patient day drops of 30 percent in Sacramento subsequent to implementation of Geographic Managed Care in 1994;

(10) Column 10 presents the projected ADC shortfalls. That is, column 10 shows year 2005 demand (column 8) minus planned ADC capacity (column 4).

The greatest ADC shortfall is in med/surg — 109 ADC. This is followed by psychiatric (24 ADC), obstetrics (13 ADC) and pediatrics (7 ADC). The remaining services are either in balance or show surpluses. Obviously, there is considerable uncertainty regarding demand projections at this level of detail going out seven years. Thus, these estimates should be viewed as only approximations. For example the service with the greatest projected shortage (med/surg), should be evaluated in terms of a range, such as 80-to-135 ADC. Similarly for the other services [e.g., psychiatric (20-30), obstetrics (10-15) and pediatrics (5-10)].

Table 1, below, compares the Table A2 demand projections with capacity available to LAC+USC in all DHS hospitals (including LAC+USC). It shows that, if geography were not a factor, there is a projected system-wide bed surplus in all categories but burn and jail. Geography, however, is a factor. Not requiring patients to travel outside their hospital service area will restrict the ability to fully utilize available beds in the other DHS hospitals. In the next section, estimated LAC+USC demand is apportioned to hospital service areas based on each current patient's area of residence.

TABLE 1
PRELIMINARY PROJECTION OF DHS SYSTEM-WIDE SURPLUSES
AVAILABLE TO LAC+USC
ACCORDING TO BED CATEGORY
IN TERMS OF ADC

Bed Category	Total Capacity Available to LAC+USC	LAC+USD DEMAND	DHS Surplus
ICU/CCU	154	77	77
M/S	393	366	27
BURN ICU	8	9	(1)
JAIL	20	20	(0)
PICU	11	5	6
PED	49	25	24
NICU	51	23	28
PSYCH	70	45	25
OB-G	94	40	54
Total	851	610	241

IV. APPORTIONING PROJECTED DEMAND TO HOSPITAL SERVICE AREAS

The service areas assigned to each DHS hospital are shown in Table 2. They are defined according to aggregations of LA Model regions.

TABLE 2
COMPARISON OF LOS ANGELES MODEL REGIONS
WITH HOSPITAL-SPECIFIC REGIONS

L.A. Model Regions	Hospital-Specific Regions
1	High Desert (HD)
2	Olive View (OV)
3	Olive View (OV)
4	Olive View (OV)
5	LAC+USC (LAC)

L.A. Model Regions	Hospital-Specific Regions
6	Harbor (HAR)
7	LAC+USC (LAC)
8	LAC+USC (LAC)
9	Martin Luther King, Jr. (MLK)
10	Harbor (HAR)

LAC+USC patient-origin data (in terms of patient days) for the period January-June 1997 were aggregated according to zip code of patient's residence and bed service. The zip codes were then aggregated into the service areas displayed in Table 2 above. A small number of zip codes that did not fall into these regions were assigned to the LAC+USC region, as was the High Desert region, since that hospital identified no excess beds available to LAC+USC. Transfers from these hospitals to LAC+USC (inpatient-to-inpatient and emergency-room-to-emergency-room) were identified from a different data base. This data base did not identify bed service, only counted patients, not patient days, and covered the entire 1996-97 fiscal year. A length of stay of five days was applied to these transfers to estimate patient days. Within each hospital service area, the transferred patient days were apportioned to each bed category according to the distribution of non-transferred patient days. They then were netted out of each service area's bed-category totals and assigned to the LAC+USC service area. Since these patients were transferred from other DHS hospitals to LAC+USC, it is assumed they could not be appropriately hospitalized in any DHS hospital other than LAC+USC.

After the above adjustments were made, within each bed category the percent distribution of LAC+USC patient days according to each service area was calculated, and applied to the estimated 2005 LAC+USC demand totals for each bed category. Table 3 provides the percent distribution of LAC+USC patient days net of transfers. Note that the greatest number of out-of-region patients come from the King/Drew area. This could reflect relative proximity (and considerable overlap) of the two areas.

TABLE 3
PERCENT DISTRIBUTION OF LAC+USC PATIENT DAYS
ACCORDING TO HOSPITAL SERVICE AREA
1996-97

Bed Category	Percent Of Patient Days				
	Total	H/UCLA	OV/UCLA	KING/DREW	LAC+USC
ICU/CCU	100.00%	3.25%	8.75%	14.24%	73.77%
M/S	100.00%	4.03%	7.00%	14.58%	74.39%
BURN ICU	100.00%	11.00%	10.87%	16.33%	61.80%
JAIL	100.00%	10.83%	6.42%	21.29%	61.47%
PICU	100.00%	1.60%	10.75%	15.77%	71.89%
PED	100.00%	4.13%	8.42%	19.38%	68.07%
NICU	100.00%	4.15%	2.28%	18.27%	75.31%
PSYCH	100.00%	5.38%	4.21%	9.23%	81.17%
OB-G	100.00%	2.44%	2.34%	20.40%	74.83%
Total	100.00%	3.97%	6.44%	15.44%	74.15%

* Net of transfers from other DHS hospitals to LAC+USC.

Table 4 shows the estimated LAC+USC ADC demand according to service area.

TABLE 4
ESTIMATED LAC+USC DEMAND ACCORDING TO
HOSPITAL SERVICE AREA
2005

Bed Category	LAC+USC Demand				
	ADC				
	Total	H/UCLA	OV/UCLA	KING/DREW	LAC+USC
ICU/CCU	77	2.49	6.71	10.92	56.58
M/S	366	14.76	25.61	53.36	272.28
BURN ICU	9	0.99	0.98	1.47	5.56
JAIL	20	2.17	1.28	4.26	12.29
PICU	5	0.08	0.53	0.78	3.57
PED	25	1.04	2.12	4.88	17.15
NICU	23	0.96	0.53	4.21	17.35
PSYCH	45	2.40	1.88	4.12	36.24

Bed Category	LAC+USC Demand				
OB-G	40	0.98	0.94	8.21	30.13
Total	610	25.86	40.58	92.22	451.16

V. MATCHING DEMAND AND SUPPLY

Table 5 presents a count of ADC capacity available to LAC+USC in each of the other DHS hospitals.

TABLE 5
CAPACITY AVAILABLE TO LAC+USC
IN DHS HOSPITALS*

Bed Category		Available ADC Capacity			
	Total	H/UCLA	OV/UCLA	KING/DREW	LAC+USC
ICU/CCU	153.90	5.40	21.60	8.10	118.80
M/S	393.12	49.56	52.08	34.44	257.04
BURN ICU	8.40	0.00	0.00	0.00	8.40
JAIL	19.92	0.00	0.00	0.00	19.92
PICU	11.20	2.40	0.00	0.80	8.00
PED	49.20	6.56	16.40	8.20	18.04
NICU	51.00	5.10	10.20	1.70	34.00
PSYCH	69.70	5.95	40.80	2.55	20.40
OB-G	94.35	25.50	0.00	41.65	27.20
Total	850.79	100.47	141.08	97.44	511.80

* For LAC+USC, planned capacity at 600 beds (512 ADC). For all other hospitals, current counts of available minus staffed beds.

Table 6 goes the next step, estimating the extent of remaining excess capacity in each hospital after LAC+USC demand has been accommodated within each patient's hospital service area. Note that a negative excess capacity number indicates all of the excess demand originating in a particular hospital's service area cannot be accommodated. For example, King-Drew does not have sufficient excess med/surg beds to accommodate all the LAC+USC med/surg demand originating in its service area; it has shortage of 19 ADC.

TABLE 6
ESTIMATES OF EXCESS CAPACITY REMAINING
AFTER ACCOMMODATING LAC+USC PROJECTED DEMAND
WITHIN THE DHS SYSTEM

Bed Category	Excess Capacity After Accommodating LAC+USC Demand Within DHS System				
	ADC				
	Total	H/UCLA	OV/UCLA	KING/DREW	LAC+USC
ICU/CCU	77.20	2.91	14.89	-2.82	62.22
M/S	27.12	34.80	26.47	-18.92	-15.24
BURN ICU	-0.60	-0.99	-0.98	-1.47	2.84
JAIL	-0.08	-2.17	-1.28	-4.26	7.63
PICU	6.23	2.32	-0.53	0.02	4.43
PED	24.00	5.52	14.28	3.32	0.89
NICU	27.96	4.14	9.67	-2.51	16.65
PSYCH	25.05	3.55	38.92	-1.57	-15.84
OB-G	54.09	24.52	-0.94	33.44	-2.93

There are four services for which a capacity shortfall at LAC+USC is projected — med/surg, pediatrics, psychiatric and obstetrics. Table 7 presents each services' estimated surplus, and the extent of outside contracting that would be necessary, above and beyond the demand accommodated within the DHS system.

TABLE 7
EXTENT OF OUTSIDE CONTRACTING PROJECTED
ACCORDING TO BED CATEGORY
LAC+USC
2005

Bed Category	LAC+USC Surplus	Accommodated Within System	Outside Contracting
	ADC	ADC	ADC
ICU/CCU	42		
M/S	(109)	75	34
BURN ICU	(1)		
JAIL	(0)		
PICU	3		
PED	(7)	7	0

Bed Category	LAC+USC Surplus	Accommodated Within System	Outside Contracting
NICU	11		
PSYCH	(24)	7	17
OB-G	(13)	9	4
Total		98	55

() Indicates shortage.

The extent of outside contracting is calculated by summing the negative numbers for each shortage service in Table 6, since a surplus of beds at one of the non-DHS hospitals cannot offset a shortage in another non-DHS hospital. The column in Table 7 labeled "Accommodated within DHS System" is merely the difference between the LAC+USC shortage and the amount to be contracted.

Table 7 suggests a minimal level of outside contracting will be necessary; basically 34 med/surg beds and 17 psychiatric beds (in terms of ADC).[6] Given a reasonable range of forecasting error in terms of bed-service demand, it appears prudent to conclude contracting needs for med/surg should range from zero to 50 beds, and for psychiatric, a range of zero to 30. It should be noted that Rancho Los Amigos Medical Center (RLA) has identified six ICU beds and 49 med/surg beds available to LAC+USC. Given this hospital's rehabilitation emphasis, the "fungibility" between beds at LAC+USC and RLA may be more limited than with respect to other DHS hospitals; thus RLA available capacity was not considered in this analysis. It is likely, however, that some of this capacity could be of use to LAC+USC, thus further reducing the need for private-sector contracting for med/surg beds.

Tables 6 and 7 provide preliminary estimates of excess demand for all bed types that can be accommodated within the DHS system without requiring patients to travel outside their hospital service area. Several caveats are in order:

(1) There are varying degrees of overlap among service areas, especially between King/Drew and Harbor;

(2) There are reasons patients migrate out-of-area to LAC+USC. To the extent patients travel to LAC+USC to obtain services unavailable in nearby DHS hospitals, the latter cannot fill the gaps. However, an analysis of approximately 1,000 three-digit ICDA9 diagnosis codes suggests that virtually none of these diagnoses is unique to LAC+USC, versus all other DHS hospitals. The only significant diagnostic group with LAC+USC accounting for a greater-than-90-percent share of DHS patients is burn; and this group accounts for approximately one-half percent of LAC+USC discharges. Thus, unique LAC+USC services do

[6] Given the small number of obstetrics beds that would be candidates for outside contracting, and the intense competition for obstetrics patients, at this time concern about potential shortages in this area are not warranted.

not appear to be a major factor inhibiting fuller use of other DHS hospitals;

(3) To the extent patients migrate out-of-area to LAC+USC out of habit, due to cultural or linguistic capabilities at LAC+USC, or due to physician referrals not based on unique LAC+USC capabilities, DHS has several years until the replacement facility opens, in which to attempt to change patient and physician habits. The approach recommended here to providing overflow capacity to LAC+USC based on patient residence should improve convenience for patients and reduce travel time; and

(4) This approach will work best with elective admissions. Transporting emergency patients is not as desirable; although in cases of emergencies where immediate hospitalization is not medically indicated, such transporting is feasible.

APPENDIX A

TABLE A1
POTENTIAL BED AVAILABILITY WITHIN DHS SYSTEM
1996-97

Bed Category	H/UCLA			OV/UCLA			KING/DREW			TOTAL		
	Avail.	Staffed	Potential	Avail.	Staffed	Potential	Avail.	Staffed	Potential	Avail.	Staffed	Potential
ICU	42	36	6	42	18	24	23	15	8	107	69	38
M/S	264	205	59	170	108	62	157	116	41	591	429	162
PSYCH	38	31	7	80	32	48	34	31	3	152	94	58
OB	49	19	30	29	29	0	83	34	49	161	82	79
PED	30	22	8	32	12	20	27	17	10	89	51	38
PICU	10	7	3	0	0	0	6	5	1	16	12	4
NICU	16	10	6	24	12	12	43	41	2	83	63	20
CCU	6	6	0	0	0	0	6	5	1	12	11	1
Total	455	336	119	377	211	166	379	264	115	1,211	811	400

TABLE A2
PROJECTED IMPACT OF 600-BED LAC+USC CONFIGURATION ON BED AVAILABILITY

	1	2	3	4	5	6	7	8	9	10
Bed Category	600-Beds	1997-8 ADC Estimates	Target Occupancy %	Target ADC 600 Beds	1997-8 vs 600 Difference in ADC	DHS Beds Avail.	DHS ADC Avail.	1997-8 Adj to 2005	Adjustment Factors*	2005 ADC Shortfall @ 600 Beds
ICU	132	59	90.00%	119	(60)	39	35	77	130.00%	(42)
M/S	306	488	84.00%	257	231	162	136	366	75.00%	109
BURN ICU	10	9	84.00%	8	1	0	0	9	100.00%	1
JAIL	24	20	83.00%	20	0	0	0	20	100.00%	0
PICU	10	7	80.00%	8	(1)	4	3	5	71.00%	(3)
PED	22	42	82.00%	18	24	38	31	25	60.00%	7
NICU	40	32	85.00%	34	(2)	20	17	23	72.00%	(11)
PSYCH	24	47	85.00%	20	27	58	49	45	95.00%	24
OB-G	32	61	85.00%	27	34	79	67	40	66.00%	13
Total	600	765	85.30%	512	253	400	339	610		98

* Assumed percent of 1997-98 census retained due to reduced demand from better patient management and Medi-Cal competition; and due to higher acuity of inpatients.

APPENDIX B

DERIVATION OF ADJUSTMENT FACTORS TO PROJECT INPATIENT DEMAND ACCORDING TO BED TYPE

The Adjustment Factors reported in Table A2, column 10, are intended to adjust current LAC+USC bed-service inpatient volume to the demand levels projected for 2005. These factors are calculated in Table B1. They are derived as follows:

1. The current LAC+USC payer mix according to bed type is divided into Medi-Cal and Indigent and All Other.

2. Within the Medi-Cal category, a further division is made between Managed-Care Mandatory and Non-Mandatory. The former (primarily AFDC and medically indigent children) are required to enroll in one of the two Medi-Cal managed-care plans in operation in Los Angeles County. The remainder are permitted to remain in the fee-for-service system, or voluntarily enroll in one of the two plans. We know that for all LAC+USC inpatient services combined, approximately 20 percent of the Medi-Cal patient load falls into the mandatory category.

3. Thus, estimates of the mandatory proportion were required for individual bed types. Given that the bulk of the mandatory population (approximately 90 percent) is comprised of young women and children, a 15 percent mandatory mix was assumed for med/surg and ICU. For obstetrics and pediatrics, a 100 percent mix was assumed. For pediatric intensive care and neonatal intensive care, a 50 percent mix was assumed, since these services are CCS intensive, and CCS is carved out, and paid on a fee-for-service basis.

4. The following Medi-Cal and Indigent utilization and market-share assumptions were employed here:

   (1) The Medi-Cal mandatory market share will be reduced by 25 percent;

   (2) The Medi-Cal mandatory per-capita utilization rate will be reduced by 30 percent;

   (3) The Medi-Cal non-mandatory utilization rate will drop 10 percent;

   (4) The Medi-Cal non-mandatory market share will drop 10 percent;

   (5) The indigent utilization rate will fall 10 percent; and

   (6) The indigent market share will remain constant, but the population will grow 10 percent.

Reductions in inpatient use rates are based on expansion in managed-care penetration and the spill-over into medical management in the fee-for-service sector; and continued advancements in bio-medical technology. DHS's efforts to meet the 1115 Waiver goals of substantially increasing outpatient capacity capitalize on these trends. There is no available formula, however, to confidently predict the quantitative impact of increases in outpatient use on inpatient demand.

These market-share and utilization-rate assumptions differ in two respects from those employed by Tranquada and Zaretsky (1996). The latter are based on data up to 1996. We now have access to current LAC+USC census data. The more recent data show a continuing decline in inpatient volume. That decline, however, is consistent with projections presented in the Tranquada-Zaretsky report. For example, in Table 10 of the report one scenario projects an ADC for 1998 of 758.[7] This compares with a current DHS staff projection for the current fiscal year, based on data through February 1998, of 765. The bulk of the recent decline is attributed to losses in Medi-Cal obstetrics volume to competing private hospitals. The report assumed a drop in market share of Medi-Cal managed-care enrollees of 50 percent, and a drop in per-capita utilization of that group of 20 percent. Here, those assumptions are revised to 25 percent and 30 percent, respectively. The former is based on an expectation that the bulk of the Medi-Cal market-share loss has already occurred. The latter is based on recent anecdotal evidence that Medi-Cal managed care has resulted in per-capita patient day drops of 30 percent in Sacramento subsequent to implementation of Geographic Managed Care in 1994.

5. The net effect of these assumptions is as follows:

(1) Medi-Cal managed care ADC reduction of 47.5 percent;

(2) Medi-Cal non-managed care reduction of 19 percent; and

(3) Indigent and all other reduction of 1 percent.

6. Applying these net factors to the payer mix in each bed category results in the total adjustment factors shown in the second column from the far right in Table B1.

7. One further adjustment was made to med/surg and ICU to reflect the likely impact of greater acuity of inpatients in the future, due to advances in bio-medical technology and a continuing shift of less acute patients to outpatient settings. The final factors for these two services are 75 percent and 130 percent, respectively (far right column in Table B1). There is no scientific basis for these adjustments. They are based on the commonly accepted expectation that acute hospitals will become more and more intensive-care oriented. The net result of these two adjustments is a further erosion in demand for med/surg beds, and an increase in demand for ICU beds, notwithstanding declines in overall demand for LAC+USC services from current levels.

TABLE B1

[7] Tranquada and Zaretsky (1996), Table 10, p. 34.

DERIVATION OF BED-CATEGORY ADJUSTMENT FACTORS
BASED ON CURRENT LAC+USC PAYER MIX

	Payer Mix %				Adjustment Factors		"Final" Factors
Bed Svc	Medi/Cal	% MC Mand	% MC Non-Mand	Ind + Other	Medi-Cal	***Total***	**Total***
M/S	47.00%	15.00%	85.00%	53.00%	76.73%	***88.53%***	**75%**
ICU/CMA	50.00%	15.00%	85.00%	50.00%	76.73%	***87.86%***	**130%**
OBG	70.00%	100.00%	0.00%	30.00%	52.50%	***66.45%***	**66%**
Ped	83.00%	100.00%	0.00%	17.00%	52.50%	***60.41%***	**60%**
PICU	86.00%	50.00%	50.00%	14.00%	66.75%	***71.27%***	**71%**
NICU	84.00%	50.00%	50.00%	16.00%	66.75%	***71.91%***	**72%**
Psych	25.00%	0.00%	100.00%	75.00%	81.00%	***94.50%***	**95%**

LAC+USC Opening Assumptions

Category	Market Share	Utilization Rate	Net Effect
	Projected/Current	Projected/Current	Projected/Current
MC Mand	75.00%	70.00%	52.50%
MC Non-Mand	90.00%	90.00%	81.00%
Indigent + Other	110.00%	90.00%	99.00%