

INTENSIVE CARE SERVICES

CHAPTER 2

Intensive Care is care provided for life-threatening illnesses, injuries or complications. Care is provided to maintain or restore vital organ function until the cause can be identified. High dependency care is a level of care between the intensive care and general hospital wards.

Intensive Care Services in SWSAHS are provided at the Bankstown and Liverpool Hospitals. A third Intensive Care Unit (ICU) is being developed at Campbelltown Hospital. High Dependency Units (HDU) are in place in all hospitals across SWSAHS excluding Camden Hospital. SWSAHS currently has an average of 22 ICU beds and 20 level 4 HDU beds.

In 2002/03, SWSAHS delivered 5,328 episodes of care in ICUs/HDUs across the Area, accounting for a total of 21,376 bed days. A total of 149 patients were transferred out of SWSAHS for ICU Services and 131 were transferred within SWSAHS. This figure excludes ambulance transfers and patients cared for in other critical care areas such as Emergency Departments, Recovery and Coronary Care Units. There is no data to accurately indicate the SWSAHS outflows for ICU/HDU services.

SWSAHS has 5.3 ICU beds per 100,000. The State average is 7.5 beds per 100,000 and NSW Health recommends 8.6 beds per 100,000 for 2006, with an increase to 8.8 beds per 100,000 by 2011.

Current Services

ICU Services in South Western Sydney Area Health Service currently operate as a network with Liverpool ICU as the hub, with role delineation of Level 6 and resource base designed to provide for more complex ICU cases.

An Area ICU Adviser provides advice and promotes quality care across the network through the Area ICU Advisory Committee.

Bankstown Hospital

Bankstown Hospital has a level 5 ICU service. It has 11 ICU and HDU beds funded as 7 ICU and 4 HDU beds. There are 3 additional spaces available. In 2002/03 Bankstown Hospital ICU/HDU service had 159 separations and 681 transfers to wards. The unit had an average length of stay of 4.09 days.

The level of acuity of patients in the ICU is higher than peer hospitals (Draft SWSAHS ICU Plan). There is a need for a larger number of HDU beds and for additional beds in order to provide transfer and clinical support to the Level 3 service at Fairfield.

The (Draft) ICU Plan recommends that 6 additional spaces be planned for Bankstown in the Master Development Control Plan.

Fairfield Hospital

Fairfield Hospital has a combined ICU/CCU with a total of 10 beds. Coronary care patients generally occupy 7 of these beds.

In 2002/03, the unit had a total of 446 separations and 768 transfers to wards. The unit had an average length of stay of 2.81 days.

Currently, patients are admitted under a VMO.

The Level 3 service at Fairfield has experienced difficulties in recruiting Intensivists. The draft ICU Plan recommends that a significantly stronger relationship be developed with the Bankstown Hospital ICU. Bankstown Intensivist VMOs would visit Fairfield each weekday for 4 hours per day. Outside of those hours, the VMO would be on call for Fairfield until 5pm. After 5pm, the Intensivist on call for Bankstown would take calls from Fairfield and provide advice, but critically ill patients would need to be transferred to Bankstown. Admission and discharge would then be the responsibility of the Bankstown Intensivist. Transfer protocols would be agreed and beds provided such that Bankstown would accept critically ill Fairfield patients.

Liverpool Hospital

Liverpool Hospital currently has 23 ICU and HDU beds open (14 ICU and 9 HDU). It has three additional spaces.

In 2002/03, the unit had a total of 295 separations and 1776 transfers to wards. The average length of stay in 'ICU 1' (8 beds) was 4.1 days, in 'ICU 2' (4 beds) 2.13 days and in 'ICU 3' (11 beds) 4.25 days.

The service has a significant district level load transferred from Fairfield and Campbelltown. The development of the Campbelltown service to a fully functioning Level 5 ICU service should reduce these district inflows. Linking Fairfield and Bankstown should also reduce the district inflows from the north. These two strategies, together with some additional tertiary beds, will allow Liverpool to undertake a more significant tertiary and metropolitan role and reduce the need for out of Area transfers.

Campbelltown Hospital

Campbelltown Hospital has 1 ICU and 7 HDU beds. The newly completed Campbelltown ICU/HDU service has recently been commissioned. It has capacity for 8 ICU and 15 HDU beds.

In 2002/03, the unit had a total of 1044 separations and 648 transfers to wards. The unit had an average length of stay of 3.13 days.

In 2004, the Campbelltown ICU achieved 24-hour coverage by VMO Intensivists from Liverpool Hospital. This coverage allows the service to gradually open beds and services to develop its agreed Level 5 ICU role.

Bowral Hospital

Bowral Hospital has 8 HDU/CCU beds. Coronary care patients generally occupy 5 of the 8 HDU/CCU beds. The physical space at Bowral requires refurbishment. Preliminary discussions have taken place with the private hospital with a view to exploring an option of a shared HDU facility.

In 2002/03, the unit had a total of 523 separations and 276 transfers to wards. The unit had an average length of stay of 2.92 days.

Table 2.1: Summary of ICU/HDU beds and spaces in SWSAHS 2003

Hospital	Role Level	ICU Beds	HDU Beds	Extra ICU/HDU Spaces
Bankstown	5	7	4	3
Bowral	3		8 (5 CCU and 3 HDU)	0
Campbelltown	4 (developing as a 5)	1	7	15
Camden	0	0	0	2 extra HDU spaces
Fairfield	3	3	7 CCU	0
Liverpool	6	14	9	3
Total		25 ICU	28 HDU (20 Level 4 or above)	23 extra HDU/ICU spaces

Source: PIRS Reports; Advice from Units

Based on the State average bed number or the bed need identified in the NSW Government Action Plan, SWSAHS requires sustained growth in ICU and HDU bed numbers.

SWSAHS requires 18 more Level 4 or above ICU beds to reach the state average. By 2006 this will increase to 21 beds. This includes 3 tertiary ICU beds.

Staffing

Staffing needs to move towards Australian and New Zealand Intensive Care Society ANZICS recommendations for Intensivists and Nursing staff.

Activity

SWSAHS hospitals recorded nearly 2,500 separations in intensive care beds.

ICU score the severity of illness on the APACHE scoring systems (Acute Physiology and Chronic Health Evaluation). The average APACHE 11 score for Liverpool and Bankstown are within the expected range for their peer groups. Bankstown provides for more acutely ill patients than its peer hospitals. Liverpool's score reflects its high local service role.

Workload complexity differences between Bankstown and Liverpool are reflected in the top ten diagnoses recorded for ICU patients. Planned admits to ICU in Bankstown via complex upper gastro-intestinal surgery, and the heavy emergency respiratory load of COPD patients are notable for Bankstown. Trauma, cancer surgery, cardiothoracic surgery are notable admissions for Liverpool Hospital.

NSW Health operates the Medical Retrieval Unit (MRU), which transports critically ill patients to hospitals around the state via air or road.

The present ICU networking arrangements provide for Fairfield Hospital to contact Bankstown ICU, while Campbelltown, Camden and Bowral Hospitals contact Liverpool ICU. If a bed is not available, the tertiary ICU (Liverpool) is contacted. If Liverpool ICU is unable to assist with beds then the MRU must find a bed outside of the area. If no ICU bed is available in NSW, a 'default' system is activated, which means the patient will be transported to the tertiary ICU and they must accommodate the patient.

Rural areas are linked to the tertiary referral hospitals. Liverpool's ICU link is Southern Area (Goulburn Hospital).

The MRU data shows that the number of SWSAHS patients being transferred out of Area has doubled from 68 in 2001 to 127 in 2002 (Total Out of Area minus Quaternary cases). The total number of transfers within and out of Area rose from 236 (2001) to 279 (2002).

Table 2.2: ICU/HDU Activity 2002/03

2002/03	Bankstown	Fairfield	Liverpool ICU1	Liverpool ICU2	Liverpool ICU3	Campbelltown	Bowral	SWSAHS
Beds	14	10	8	4	11	8	8	63
Separations	159	446	114	36	145	1044	523	2,467
Transfers	681	768	512	584	680	648	276	4,149
Bed Days	3,436	3,397	2,565	1,319	3,506	4,823	2,330	21,376
ALOS	4.09	2.81	4.10	2.13	4.25	3.13	2.92	NA
Occupancy	67.24	93.07	87.84	122.93	89.62	84.29	79.79	93.2

Source: PIRS 2002/03

Figure 2.1 : Average APACHE 11 Score for SWS ICU Services compared to Metropolitan and Tertiary Service Average Scores

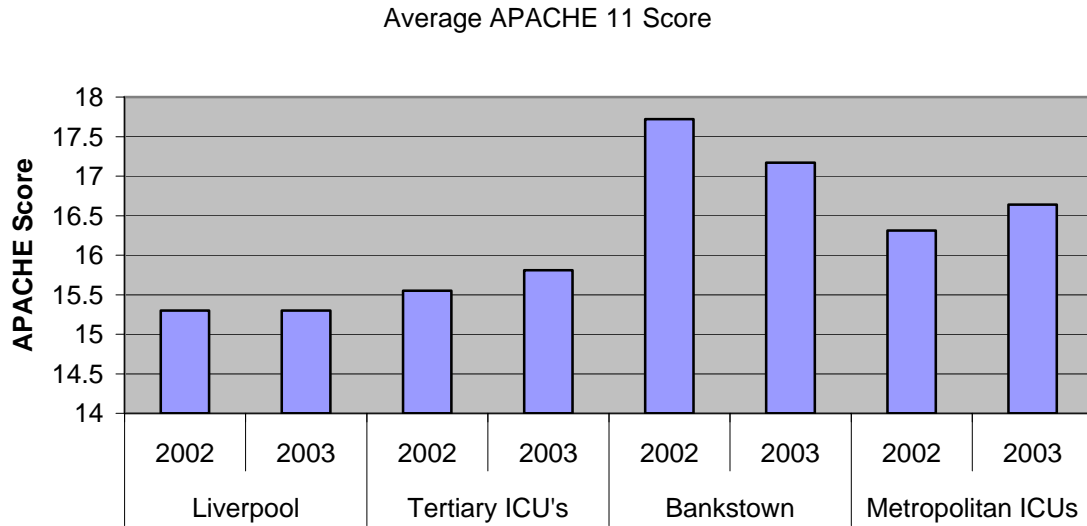


Figure 2.2 : Liverpool Top Ten APACHE Diagnoses 2002/03

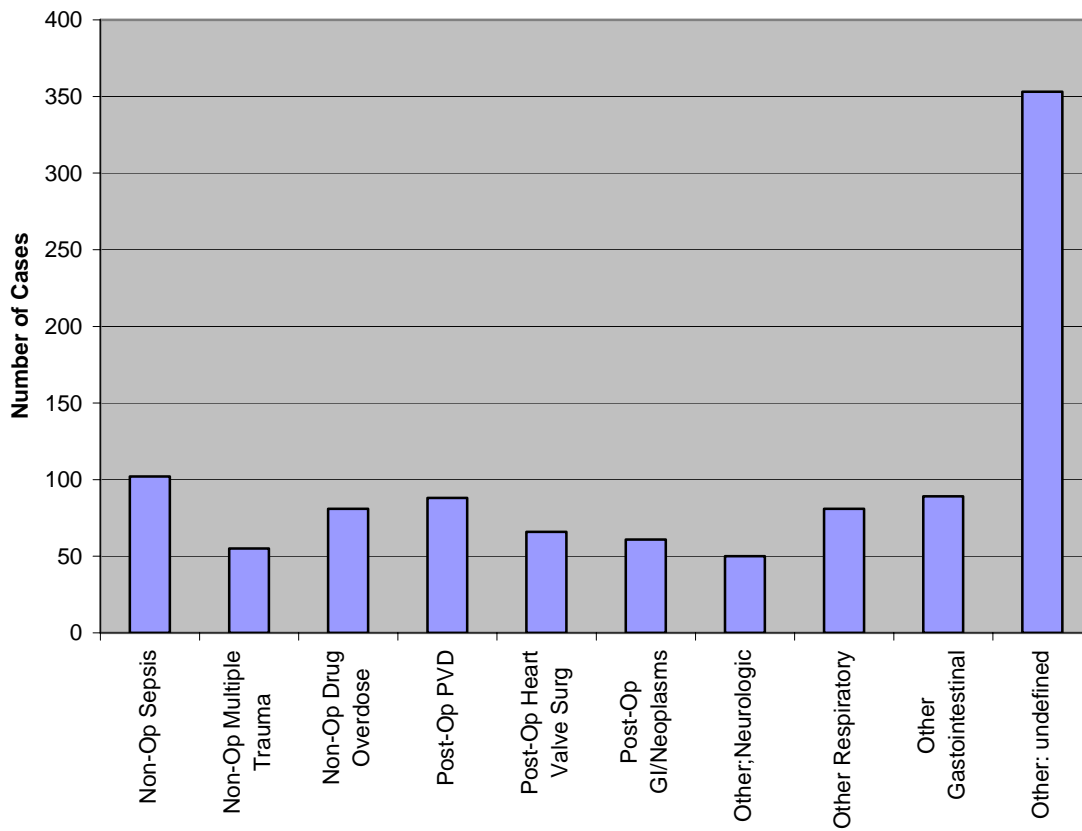


Figure 2.3 : Bankstown Top Ten APACHE Diagnosis 2002/03

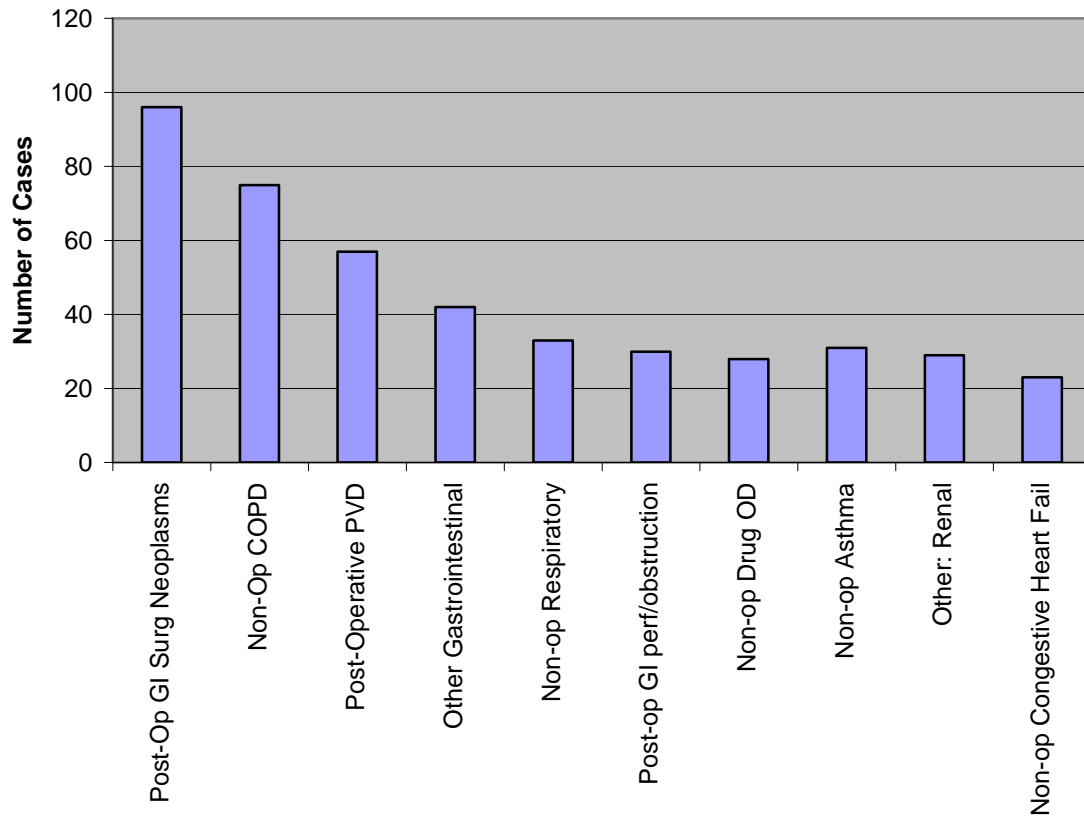


Table 2.3 :Medical Retrieval Data for SWSAHS and Metropolitan Area Health Services 2001/02

SWSAHS	2001				2002			
	Total	Within Area	Out of Area	Quart	Total	Within Area	Out of Area	Quart
Liverpool	22	2	20	12	30	1	29	14
Fairfield	52	35	17	0	65	35	30	0
Bankstown	35	18	17	3	40	13	27	3
Camden	23	18	5	0	22	14	8	0
Campbelltown	87	64	23	3	100	60	40	2
Bowral	17	10	7	3	22	8	15	3
SWSAHS Total	236	147	89	21	279	131	149	22
NSAHS Total	150	102	49	5	163	121	40	5
CSAHS Total	82	52	30	5	87	65	22	1
SESAHS Total	59	40	19	12	86	45	42	13
WSAHS Total	181	89	92	19	163	104	60	7
WWAHS Total	121	69	52	15	129	60	69	13
IAHS Total	194	48	146	38	144	45	109	15
HAHS Total	0	0	0	0	0	0	0	0
Grand Total	1023	547	477	115	1051	571	491	76

RECOMMENDATIONS

- ICU/HDU services in SWSAHS be operated as a single network with the following key components:-
 - An Area Director be appointed to oversee the effective operation of all units;
 - An Area ICU/HDU intranet program with beds and services logged will be implemented;
 - An Area retrieval and transport system for acutely ill patients be established. The system would operate on the basis of a single phone number system for transfer within the Area; and
 - Quality assurance systems, common protocols and policies will be developed. A data management system will be developed and implemented across the Area Health Service.

- The service network be established to comprise Liverpool as the Level 6 tertiary ICU supporting Campbelltown; Bankstown as the Level 5 service in the north of SWSAHS supporting the Level 3 service at Fairfield. Campbelltown will be a Level 5 service for the south of SWSAHS supporting Camden and the Level 3 service at Bowral Hospital.

- All hospitals to have medical, nursing, allied health and other support staff commensurate with defined ICU roles.

- An Area coordinated stand-alone MET system be present in all SWSAHS hospitals. A single phone number to be utilised and linked to each hospital ICU.

- Additional SWSAHS ICU/HDU beds be developed as follows:

	Bankstown	Fairfield	Liverpool	Macarthur	Bowral
2004/05	1 ICU		1 ICU	2 ICU 2 HDU	
2005/06	1 ICU		1 ICU	2 ICU 2 HDU	
2006/07			1 ICU	2 ICU 3 HDU	
2007/08				1 ICU 1 HDU	

Source: SWSAHS Intensive Care Services Plan, 2004 (Draft).