

**SWSAHS**

**Paediatric Inpatient and  
Ambulatory Services Network  
2001 - 2004**



**SOUTH WESTERN SYDNEY AREA HEALTH SERVICE**

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## **SWSAHS Paediatric Inpatient Services Network 2001 - 2004**

### **1 Executive Summary**

This paediatric inpatient service plan outlines a proposal for development of paediatric inpatient services for children aged 1 month to 14 years and 11 months in South Western Sydney Area Health Service over the next three years. The needs of s are briefly acknowledged. A second stage will be developed once the Department of Health has determined a policy regarding the state or metropolitan wide approach to the reversal of outflows to the three Specialist Children's Hospitals.

The emphasis in this Plan is to ensure appropriate structures and resources to provide high quality inpatient services. This includes the development of high quality ambulatory and outreach services and the establishment of a paediatric surgical network. Improvements in the health outcomes of children require a broader approach than paediatric inpatient service development. There is a need for inpatient and ambulatory services to establish links to a range of population health approaches such as the Families First Program and the Tobacco Control Plan to ensure the improvement of children's health.

This paediatric inpatient service plan does not specifically address the needs of neonates and those requiring perinatal care as these will be subject to the recommendations of the metropolitan services implementation group. A separate planning process for Neonatal services is currently underway. However the actions outlined in this plan have been developed following consideration of the needs for perinatal and obstetric services.

The Area Health Service has adopted a number of high level prioritisation principles which include Equity, Efficiency, Effectiveness and Acceptability. Quality improvement and consumer participation are key components of the latter two principles. Five guiding principles provide the basis for this Plan. These five principles are consistent with the Area's prioritisation principles. The principles include

1. Safety and quality
2. Accessibility
3. Avoidance of hospitalisation of children unless necessary
4. Cost effectiveness and cost efficiency
5. Acceptability

There are a number of objectives that arise from an analysis of the service provision issues. These objectives are to:

1. Improve the safety and quality of inpatient children's care in SWSAHS hospitals.
2. Establish an appropriate model for child health service delivery. This model would reduce the emphasis on inpatient paediatric care as the marker of excellence and develop a child health improvement model.
3. Ensure service improvements are cost effective, cost efficient and practical.
4. Develop an appropriate strategy to manage any returned resident outflows, arising from metropolitan wide specialty planning.

The fourth objective would be implemented according to the Department of Health's policy determination following metropolitan wide specialty planning. Initial funding for three

specialist paediatric networks linked to the three specialist children's hospitals has been provided by the Department of Health. This process will identify strategies for service improvement and provide a starting point for the negotiation of returned flows in the context of budget holding.

The Plan notes that residents of SWSAHS experience significant social disadvantage and notes the links between this and poor health. The literature supports the links to population health approaches to improve the health of children in SWSAHS.

The Plan examines the human resource and physical infrastructure currently available within SWSAHS inpatient and outpatient services. It identifies the need for physical infrastructure improvements at Liverpool, Fairfield and Bowral hospitals. It further identifies the need to resolve the roles of Fairfield and Bankstown Hospitals in terms of the appropriate level of paediatric service. It identifies the need for networks with the Specialist Children's Hospitals and improved access to training for all staff employed within child health services.

The Plan does not propose an increase in the current level of case complexity or a general return of flows from Specialist Children's Hospitals, though the latter may occur if recommended by the specialist metropolitan planning group and funded in the context of budget holding.

The Plan recommends the expansion of the Ambulatory Care and Outreach Services across SWSAHS and including services within:

- Emergency Department
- Community Outreach
- Community Child Health
- Population Health

The model of service delivery should be underpinned by principles:

1. The inpatient paediatric services in SWSAHS should be effectively networked with specialist Children's Hospitals. Local units must be well linked to units with greater specialty and back up resources to ensure safety and quality of care,
2. Hospitalisation of children should be avoided if at all possible,
3. When in hospital the NSW Guidelines for the Hospitalisation of Children and Role Delineation should be adhered to,
4. Facilities where children receive services in SWSAHS hospitals will be designed to facilitate a well functioning service and be child and parent friendly and age appropriate,
5. Where possible, children should receive care close to home,
6. When children are admitted to hospital, the length of stay should be minimised and clear discharge pathways identified with necessary home and community support,
7. The skills of our child health staff should be used collaboratively across settings to optimise care,
8. Cross appointment of VMOs to related units to facilitate networking and continuity of care for children managed by those units,
9. Support for children and families in the community by general practitioners and medical specialists plus or minus community health services, is an integral part of the ongoing management of children,

10. Prevention and early intervention should be the keystones of management of children,

A model of care has been developed to address the problems and challenges identified for SWSAHS paediatric inpatient services. The model will encompass the following elements:

1. Effective triage of children presenting in Emergency Departments in an area suited to their special needs,
2. A direct access point for GPs or families with concerns about their child's condition,
3. Prompt management of their presenting complaint and planning for their immediate and ongoing needs,
4. Agreed treatment guidelines for common conditions across all sites in SWSAHS and consistent across the specialist paediatric networks including the CHW and the Greater Western Network and SCH and the Greater Eastern Network,
5. Defined Ambulatory Teams with relevant skills and of sufficient size to cover the hours of operation with adequate and safe levels of medical and nursing cover,
6. Clear pathways for referral, management and discharge will be developed by Sectors in consultation with VMOs and General Practitioners and reflecting the community needs and sector resources,
7. Access to allied health services on an outpatient basis and
8. Access to specialist outreach paediatric clinical services following networking with the Specialist Children's Hospitals.

## **2 INTRODUCTION AND BACKGROUND**

### **2.1 Introduction**

This paediatric inpatient service plan identifies a number of issues to be addressed in the provision of Paediatric services. It outlines a proposal for development of paediatric inpatient services for children aged 1 month to 14 years 11 months in South Western Sydney Area Health Service over the next three years. The service provision data presented in this Plan is identified as the Paediatric group aged 1 month to 14 years 11 months. However, some demographic information is presented for children aged 0 – 14 years 11 months as it is not possible to exclude the 0 – 1 month age group. Babies from 0 to 1 month are generally accommodated within perinatal or obstetric services. Babies in the obstetric wards are considered “unqualified”. They are cared for by their mothers and require no specific care by the ward staff. The needs of babies requiring perinatal services are specifically noted in section 5.4. The needs of adolescents are considered, although a detailed analysis is not presented.

While this paediatric inpatient service plan does not specifically address the needs of neonates and those requiring perinatal care, the actions outlined in the plan have been developed following consideration of these needs. Local planning for neonatal services is currently underway and will be informed by the recommendations regarding maternity services of the metropolitan services implementation group.

This plan identifies the need for a two stage process for improving paediatric inpatient services in SWSAHS. The first stage identifies strategies to improve current services and the projected future services for SWSAHS without a return of outflows. The second stage would be developed once the Department of Health has determined a policy regarding the

state or metropolitan wide approach to the reversal of outflows to the three Specialist Children's Hospitals. These policy determinations and the principles of the Greater Western Paediatric Network Feasibility Proposal would inform the development of the second stage.

Improvements in the health outcomes of children require a broader approach than paediatric inpatient service development. The emphasis in this Plan is to ensure appropriate structures and resources to provide high quality inpatient services. This includes the development of high quality ambulatory and outreach services and the establishment of a paediatric surgery network. The NSW Child Health Policy "Good Start Better Health", identifies the need for inpatient and ambulatory services to establish links to a range of population health approaches to ensure the improvement of children's health. The Families First Program and the Tobacco Control Plan are two major public health programs that are relevant to Children's health improvement.

## **2.2 Guiding Principles**

The Area Health Service has adopted a number of high level prioritisation principles which include Equity, Efficiency, Effectiveness and Acceptability. Quality improvement and consumer participation are key components of the latter two principles. Five guiding principles provide the basis for this Plan. These five principles are consistent with the Area's prioritisation principles. The principles include:

1. Safety and quality
2. Accessibility
3. Avoidance of hospitalisation of children unless necessary
4. Cost effectiveness and cost efficiency
5. Acceptability

The fifth principle is crucial to successful implementation ie communities, General Practitioners, paediatricians and staff have to be conversant with and support the proposal for them to go ahead.

## **2.3 Purpose**

There are two major issues for current paediatric inpatient care in SWS. These are:

1. The need to ensure the safety of children who seek emergency care or are inpatients in SWSAHS hospitals. SWSAHS has had difficulty in attracting paediatric registrars to work in SWSAHS hospitals on a 24 hour basis. After hours periods are the most difficult to cover and thus during this time the medical staff covering some hospitals may have little paediatric experience. This may vary throughout the year from site to site. This plan aims to improve this situation.
2. There is a need to establish a more appropriate model of service delivery in SWS to improve child health. Paediatric emergency and outreach services assist in reducing the length of hospitalisation of children and avoid hospitalisation when possible. These services also assist in referral and local networking with General Practitioners and other child health and welfare services.

A third issue arises when considering the paediatric outflows:

3. There is a need to ensure access to local services is viable and safe. All SWSAHS hospitals except Camden have a paediatric inpatient ward and all receive children at Emergency Departments. Despite this, there is a frequent tendency for hospital care that could be delivered in a local paediatric unit to be sought from one of the two Children's Hospitals. This travelling for care at Specialist Children's Hospitals threatens the viability of local units and raises the cost of care.

## **2.4 Objectives**

There are a number of objectives that arise from an analysis of the service provision issues. These objectives are to:

1. Improve the safety and quality of inpatient children's care in SWSAHS hospitals.
2. Establish an appropriate model for child health service delivery. This model would reduce the emphasis on inpatient paediatric care as the marker of excellence and develop a child health improvement model.
3. Ensure service improvements are cost effective, cost efficient and practical.
4. Develop an appropriate strategy to manage any returned resident outflows, arising from metropolitan wide specialty planning.

The fourth objective would be implemented according to the Department of Health's policy determination following metropolitan wide specialty planning. Initial funding for three specialist paediatric networks linked to the three specialist children's hospitals has been provided by the Department of Health. This will process will identify strategies for service improvement and provide a starting point for the negotiation of returned flows in the context of budget holding.

## **2.5 Background**

The Paediatric Inpatient Services Plan is consistent with:

1. the principles outlined in the Area Operations Plan (AOP);
2. the aims and objectives of the NSW Health Guidelines for the Hospitalisation of Children;
3. the goals of NSW Health's The Start of Good Health; and
4. the priority health issues of the Commonwealth Government Health Goals and Targets for Australian Children and Youth.

The AOP principles include the need to emphasise "services" not beds; the need for entry points to the health system to ensure an appropriate service response and establish excellent patient/ client relations; and the need to increase services that can be provided on an ambulatory rather than inpatient basis.

The aims and objectives of the Guidelines for the Hospitalisation of Children are provided in detail in Appendix 1. In summary, these include the provision of safe and effective inpatient care and the concentration of paediatric services requiring special facilities or skills in hospitals which can provide those services most effectively and efficiently. Also

included is the recognition of the special requirements of children in ambulatory services, operating theatres and allied health services and the special psychological needs of the child and the importance of their carer's participation in their care. The goals of The Start of Good Health and the priority health issues of the Health Goals and Targets for Australian Children and Youth are also provided in Appendix 1.

Over the last three years paediatric ambulatory services have been developed at Fairfield Hospital. These include paediatric medical consultancy to the Emergency Department and outreach paediatric services. These services have improved links to General Practitioners and a range of community based services including child protection services. Initial consultation with key stakeholders indicates that there is considerable support for an increased ambulatory focus across SWSAHS, such as that developed at Fairfield, and recognition of the importance of ensuring a high quality Emergency Department response to paediatric presentations.

The AOP notes that outflows for paediatric and perinatal services are significant. While outflows for tertiary services are appropriate, it is considered that most children in SWS should be able to access non tertiary care locally. In response to these flow issues a Greater Western Paediatric Network Feasibility Proposal was developed in collaboration with Western Sydney and Wentworth Area Health Services (WSAHS & WAHS) and the Children's Hospital at Westmead (CHW). This Feasibility Proposal identified opportunities for networking of district level inpatient services with CHW and for returning some non tertiary outflows from CHW. However, the CHW is currently funded to service these outflows. As noted above, the Department of Health will need to determine a state or metropolitan wide approach to the reversal of outflows to the three Specialist Children's Hospitals and reallocation of funding. Until this is determined, the Area will need to fund growth in demand for paediatric services within the growth funding currently available.

### 3 OPERATING ENVIRONMENT

#### 3.1 The population of SWSAHS

In 1998 the estimated child population (0 to 14 years) of SWSAHS was 181,143 which represented 23.9% of the total population. The estimated age category breakdown of the child population for 1998 is provided in Appendix 2. Table 1 outlines the estimated child population by Sector and presents the child population as a proportion of the total Sector population.

**Table 1**

Estimated Resident Population of SWSAHS 1998						
Population 0 – 14 years in 1998	Winge-carribee	Macarthur	Bankstown	Liverpool	Fairfield	SWSAHS
Number	9,219	59,785	34,914	33,441	43,784	181,143
Percentage of total population	23.43%	26.84%	20.80%	23.57%	20.14%	23.9%

Source: ABS Estimated Resident Population 1998

In 1996, people of Aboriginal and Torres Strait Islander (ATSI) background comprised 1.2% of the SWSAHS population. Campbelltown LGA had the largest community of ATSI people with 2.3% and Liverpool LGA the next highest at 1.6%. Bankstown was the smallest community with 0.6% of the total population.

In 1996, people of Non English Speaking Background (NESB) comprised 28.5% of the SWSAHS population. Fairfield LGA had the largest community of NESB people with 50.4% and Liverpool LGA the next highest at 29.7% then Bankstown with 28.8% of the total population.

## **3.2 The Burden of Disease**

### **3.2.1 Mortality**

The SWSAHS Epidemiological Profile 2000 describes the mortality and morbidity of the population of SWS and is the source for the following information. The average Infant Mortality Rates (IMR) have tended to decline in all SWS LGAs during the period 1987-1994. However in 1991 – 1996 the IMR for SWS residents was marginally higher than that for NSW residents.

In the 0 – 14 year age group there were 563 deaths for the years 1993 – 1997, which represented 3% of all deaths for SWSAHS residents over the same period. “Other diseases and disorders” comprised nearly 70% of child related deaths including those from conditions arising in the perinatal period, congenital abnormalities and Sudden Infant Death Syndrome. Cancers, injuries and poisonings accounted for 22% of deaths of SWS residents aged 0 to 14 years for the same period. In SWSAHS the average annual age specific death rate for children 0 – 14 years of English Speaking Background is over twice as high as that for the children of Non English Speaking Background (0.7 to 0.3 respectively). There were no significant differences in the death rates experienced by SWS residents when compared to NSW residents.

The reports of the NSW Child Death Review Team identify a number of systemic issues relating to service provision that may reduce the incidents of death of children. SWSAHS has established a Child Death Review Subcommittee of the Child Health Advisory Committee to systematically identify strategies to address the recommendations of these reports. Deaths of children involving parental substance dependence are being targeted as the first priority.

### **3.2.2 Morbidity**

Over the period 1987-1994 SWS residents experienced a significantly higher rate of low birthweight babies (at term) compared with the rate for NSW. Two factors which account for this higher rate of low birth weight babies are smoking in pregnancy and a high proportion of mothers from Asian countries who tend to have smaller babies. The proportion of SWS women who smoked during pregnancy for the period 1993-1994 was similar to those in NSW, however some LGAs such as Campbelltown, Wingecarribee and Camden were found to have higher proportions of women smoking.

In South Western Sydney, 25.3% of the population currently smoke. This is higher than the NSW rate of 24% (SWSAHS Epidemiological Profile 2000). The smoking prevalence in SWSAHS is not evenly distributed across Sectors. In 1994/95 smoking rates were highest in Liverpool and lowest in Camden, Wollondilly and Wingecarribee (CWW). Males and females aged 18 to 44 in SWS had a higher smoking rate (31.4% and 25.8%) than older age groups. This age group fits within the primary child bearing age. Children of parents within this age group are thus more likely to be exposed to environmental tobacco smoke.

This environmental exposure may exacerbate asthma if the child has an existing predisposition to it.

Table 2 identifies the total number of Emergency Department visits by children aged 0 to 14 years at each of the SWSAHS hospitals and for SWSAHS as a whole. It also notes the percentage this number represents of the total Emergency Department visits for each hospital and for SWSAHS as a percentage of total number of Emergency Department visits. Campbelltown Hospital has the highest percentage of children presenting to the Emergency Department with Bowral then Fairfield Hospitals having the next highest. However, the actual numbers of children visiting are highest at Campbelltown then Liverpool. This 0 – 14 year age group comprises an average of 25.7% of all Emergency Department visits to SWSAHS hospitals.

**Table 2**

Number of Emergency Department Visits by children 0 – 14 years in SWSAHS 1998 (EDDC)							
Hospital	Bowral	Campbelltown	Camden	Bankstown	Liverpool	Fairfield	SWSAHS
Number	2,963	11,123	2,476	6,682	9,292	5,953	38,489
% of total number	26.4%	35.1%	22.1%	21.5%	22.3%	26.2%	25.7%

Source: SWSAHS Epidemiological Profile 2000

Table 3 identifies the age and sex specific presentations to the Emergency Department for asthma. Asthma presentation rates for SWSAHS 0- 14 year old residents are generally higher than for NSW of the same age. The rate for SWSAHS 0 – 4 year olds is particularly high in comparison to the NSW presentations for the same age. This appears to be consistent with high smoking rates in the parental population.

**Table 3**

Age Specific presentation rates ( per 1000 population) to ED for asthma, SWSAHS, 1998 (EDDC)				
Age Group	SWSAHS		NSW	
	Males	Females	Males	Females
0 – 4	26.0	14.1	21.2	12.5
5 - 14	9.6	6.8	8.1	5.9

Source: SWSAHS Epidemiological Profile 2000

Tables 4, 5 and 6 identify the top 10 ANDRGs and total ANDRGs for children admitted to SWSAHS hospitals for planned and emergency non tertiary separations in 1998/99. Most unplanned admissions are for common childhood illnesses with the top 10 DRGs comprising 64.6% of the total emergency episodes of care. Respiratory medicine and gastroenterology represent 29.7% and 14.6% of the total unplanned non tertiary admissions for SWSAHS hospitals. This represents a higher proportion than that for the same admissions to all NSW public hospitals. The NSW proportion is 25% and 13.2% respectively for respiratory medicine and gastroenterology. Length of inpatient admissions for children is generally short with the average length of stay 2.5 days.

**Table 4**

<b>Top 10 DRGs and total DRGs for children (1 mth to 14 years) admitted to SWSAHS hospitals for Unplanned Non Tertiary Episodes of Care in 1998 / 1999</b>				
DRG	EOC	Beddays	CWTD	% total SWS EOC
187 Bronchitis & Asthma Age<50 w/o cc	1,262	2,225	574	13.7%
350 Gastroenteritis Age<10	1,034	1,967	556	11.2%
188 Whooping Cough & Acute Bronchiolitis	718	1,937	625	7.8%
135 Otitis Media & Uri Age<10	650	1,297	337	7.0%
815 Viral Illness Age<60	549	1,089	303	6.0%
172 Respiratory Infections/inflamns Age<55 w/o cc	514	1,440	414	5.6%
473 Fx,sprn,strn&disloc Of Fr arm,hnd,ft Age<75 w/o cc	447	518	184	4.8%
049 Febrile Convulsions (age<5)	410	683	204	4.4%
136 Laryngotracheitis	221	312	70	2.4%
047 Seizure Age<65 w/o cc	157	256	65	1.7%
Total of top 10 DRGs	5,962	11,724	3,332	64.6%
<b>Total emergency non tertiary episodes of care</b>	<b>9,226</b>	<b>19,845</b>	<b>5,742</b>	<b>100%</b>

Planned admissions are predominantly day only episodes of care with a strong focus on ear nose and throat related problems. Campbelltown and Liverpool Hospitals (39% and 31%) provide the majority of these services. The top 10 DRGs make up 54.6% of the total of the planned non tertiary episodes of care. Length of stay is again generally short (1.71 days).

**Table 5**

<b>Top 10 DRGs and total DRGs for children ( 1 mth - 14 years) admitted to SWSAHS hospitals for planned non tertiary episodes of care in 1998/99</b>				
DRG	EOC	Beddays	CWTD	% total SWS EOC
122 Tonsillectomy &/or Adenoidectomy	532	571	293	17.2%
613 Circumcision Age<10	330	330	118	10.6%
124 Myringotomy w Tube Insertion	248	248	93	8.0%
321 Hernia Procedures Age<10	106	111	52	3.4%
424 Local Excision & Removal Int Fix Devs Exc Hip & Femur	101	122	65	3.3%
484 Other Skin, Subcutaneous Tissue & Breast Procedures	99	99	57	3.2%
139 Other Ear, Nose, Mouth & Throat Diagnoses w/o cc	71	79	25	2.3%
188 Whooping Cough & Acute Bronchiolitis	70	211	61	2.3%
473 Fx,sprn,strn&disloc Of Frarm,hnd,ft Age<75 w/o cc	69	71	28	2.2%
117 Miscellaneous Ear, Nose, Mouth & Throat Procedures	66	71	49	2.1%
Total of top DRGs	1692	1913	841	54.6%
<b>Total Planned Non Tertiary Episodes of Care</b>	<b>3,100</b>	<b>5,301</b>	<b>1,726</b>	<b>100.0%</b>

The tertiary workload is small and comprises only 1.4% of the total SWSAHS paediatric activity. The majority of tertiary episodes of care (76%) admitted to SWSAHS hospitals are unplanned. Of the planned tertiary admissions neonates growing up makes up 5.5% of the total tertiary EOC and 31.4% of the total tertiary beddays.

**Table 6**

Top 10 DRGs and total DRGs for children ( 1 mth - 14 years) admitted to SWSAHS hospitals for Tertiary Episodes of Care in 1998/99				
DRG	EOC	Beddays	CWTD	% Total SWS EOC
051 Moderate Head Injury	40	54	29	21.86%
763 Coagulation Disorders Age<70	35	102	32	19.13%
173 Cystic Fibrosis	12	49	41	6.56%
510 Major Skin Disorders Age<10	11	33	12	6.01%
004 Tracheostomy Except for Mouth, Larynx or Pharynx Disorder Age<16	10	11	46	5.46%
708 Neonate, admission Wt 1000-1249g,w/o Signif O.R. Proc	10	232	133	5.46%
175 Sleep Apnoea w/o cc	7	20	3	3.83%
788 Acute Leukaemia w/o Major O.R. Proc w Non-major cc	7	7	22	3.83%
846 Eating & Obsessive-compulsive Disorders	7	33	11	3.83%
264 Congenital Heart Disease	6	39	12	3.28%
Total of Top Ten Tertiary DRGs	145	580	341	79.23%
Total Tertiary DRGs	<b>183</b>	<b>739</b>	<b>428</b>	<b>100.00%</b>

### 3.2.3 Social Determinants of Health

The SWSAHS Epidemiological Profile notes that socioeconomic status (SES) is an important determinant of health and people with higher SES achieve better health outcomes and often better access to services. This is a complex relationship that includes a number of characteristics such as income, employment, education and home ownership.

Table 7 identifies the Index of Disadvantage for 1996 by LGA for each of the LGAs in SWS and for SWSAHS in comparison to NSW. The score of an index of socioeconomic status is only meaningful when used to rank geographical areas. The higher the value on the Index of Disadvantage the fewer families on low income, fewer people with low educational attainment and lower levels of unemployment, fewer people living in rented dwellings and fewer people lacking fluency in English.

Table 7 also identifies the related ranking among LGAs. An LGA with a ranking of 1 falls within the lowest 10% of all LGAs and a ranking of 8 means the LGA falls within the 70 to 79% band for the index. Fairfield is in the lowest 10% of LGAs on this index and is the most disadvantaged LGA within SWSAHS. Liverpool, Campbelltown and Bankstown are the next most disadvantaged being in the lowest 40% of LGAs. Wingecarribee, Wollondilly and Camden are relatively well advantaged compared to the other SWSAHS LGAs. The SWSAHS Epidemiological Profile also notes that the relative positions between the SWSAHS LGAs were stable for 10 years prior to 1996.

**Table 7**

Index of Disadvantage by LGA and related ranking among LGAs based on deciles for 1996		
LGA / Area / State	Index of Disadvantage	Rankings among LGAs
Fairfield	905	1
Liverpool	956	3
Campbelltown	964	4
Bankstown	969	4
Wollondilly	1028	8
Wingecarribee	1029	8
Camden	1051	9
<b>SWSAHS</b>	<b>959</b>	-
<b>NSW</b>	<b>1007</b>	-

Source: SWSAHS Epidemiological Profile 2000

The Chief Health Officer's Report 2000 describes the association between socioeconomic status and indicators of health status and potentially modifiable health risk factors in the NSW population. Some of these associations are summarised below in relation to the SWS population.

- SWSAHS had the highest unemployment rate of any urban Area Health Service. The SWSAHS rate was also higher than the NSW average in 1996 for both males 10.9%: 9.5% and females 10.6%: 7.9%. The report advocates that the health sector “can play a part in reducing the impact of unemployment on health by effectively managing health problems to reduce barriers to reemployment and to work with organisations dealing with unemployed people to prevent and detect health problems”
- SWSAHS ranks in the top 6 Area Health Services with the highest number of people aged 15 years and over with no post-secondary education. The SWSAHS rate was also higher than the NSW average in 1996 for males 56.3%: 50.8% and females 67.9%: 61.0%. The report notes that higher levels of parental education are associated with better health.
- SWSAHS ranks second highest among Area Health services with couple families with dependent children (45.4%) and fourth highest with one parent families with dependent children (11.0%). The report notes that “family and family structure has a strong impact on the health and well being of children and their parents” and that “inadequate family income is more common in single parent families and poverty has a strong impact on health.”

While this Plan focuses on inpatient care, there are many influences on why children are ultimately admitted for inpatient care. A New Zealand study of socioeconomic deprivation and hospitalisation rates found that people living in socio-economically deprived areas have a greater need for hospitalisation than those living in less deprived areas<sup>1</sup>. The Chief Health Officer's report and the poor ranking of four of the seven local government areas within SWSAHS indicates that many families within SWSAHS experience significant disadvantage that impacts negatively on their health.

A brief review of the literature on social disadvantage and health<sup>2 3 4</sup> indicates that there is a need for policy and planning to address social disadvantage in order to improve health. Though many of the policy directions advocated by the literature are those that address economic disadvantage there is a consistent argument for population based approaches to reduce the negative health impact of social disadvantage. This argument supports the broader focus of this plan and the need to link to population health approaches to improve the health of children in SWSAHS.

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<sup>1</sup> Crampton, Peter and Salmond Clare, *Socioeconomic Deprivation and Hospitalisation Rates in New Zealand*. Australasian Epidemiologist, Volume 7 Number 3 September 2000.

<sup>2</sup> Marmot, Michael and Wilkinson, Richard G *Social Determinants of Health* Oxford University Press, Oxford, 1999

<sup>3</sup> Harris, Elizabeth, Sainsbury Peter and Nutbeam, Don *Perspectives on Health Inequity* Australian Centre for Health Promotion, Sydney 1999

<sup>4</sup> Benzeval, Michaela, Judge, Ken and Whitehead, Margaret. *Tackling Inequalities in Health, An agenda for action*. The Kings Fund, London 1995

## 4 CURRENT INPATIENT SERVICES AND PATTERN OF UTILISATION OF SERVICES

### 4.1 Current Population Generated Activity for SWS Residents

The total population generated activity or demand for all paediatric acute inpatient services by SWS residents in 1998/99 was 20,985 episodes of care. This includes public and private sector activity for residents treated within SWSAHS and those treated outside SWSAHS. The total public sector demand was 18,641 episodes of care. Of the total demand the private sector made up 11% or 2344 episodes of care. The change in paediatric activity since 1995/96 to 1998/99 is outlined in detail in Appendix 3. Over this time there has been:

- A 3% increase in public sector episodes of care
- An 8% reduction in private sector episodes of care
- No change in public sector average length of stay
- A 6% reduction in private sector average length of stay

Table 8 provides a summary of inpatient flows for SWSAHS residents in 1998 / 1999 by type of episode of care and type of flow. Public demand indicates the total demand for services by SWSAHS residents in public hospitals. The public demand that is met within SWSAHS hospitals is described as public capture and the demand provided by hospitals outside SWSAHS is indicated as public outflow. Of the total public demand, SWSAHS hospitals provided 11,469 episodes of care indicating a moderate level of self-sufficiency (61.53%) in the provision of public paediatric inpatient services.

**Table 8**

Summary of Inpatient flows for SWSAHS residents in 1998 / 1999				
Flow Type	Day Only	Non Tertiary	Tertiary	Total
Public Demand	6236	11744	661	18641
Public Outflow	3386	3250	536	7172
Public Capture	2850	8494	125	11469
Private	1397	930	17	2344
<b>Self Sufficiency</b>	<b>45.70%</b>	<b>72.33%</b>	<b>18.91%</b>	<b>61.53%</b>

### 4.2 Outflows

7172 episodes of care or 38.47% of the demand for service within the public sector is met by services outside of SWSAHS. Table 9 outlines the top 10 DRGs for SWSAHS presenting to public hospitals outside of SWSAHS. The majority of which (4720 EOC or 66%) are provided by the Children's Hospital at Westmead. The Sydney Children's Hospital is the next biggest provider with 1295 EOC or 18%. An analysis of the nature of SWSAHS outflows is provided below.

**Table 9**

Top 10 DRGs for SWSAHS residents presenting to Hospitals external to SWSAHS in 1998 /1999				
DRG	EOC	Beddays	CWTD	EOC % of Outflow EOC
780 Chemotherapy	467	474	88	6.5%
122 Tonsillectomy &/or Adenoidectomy	347	496	204	4.8%
187 Bronchitis & Asthma Age<50 w/o cc	261	523	119	3.6%
934 Short Stay Contacts w Health Services	239	240	56	3.3%
613 Circumcision Age<10	215	221	76	3.0%
350 Gastroenteritis Age<10	191	375	102	2.7%
188 Whooping Cough & Acute Bronchiolitis	162	576	146	2.3%
321 Hernia Procedures Age<10	152	186	74	2.1%
760 Red Blood Cell Disorders (age>64 w/o cc) or (age<65 w cc)	136	178	57	1.9%
172 Respiratory Infections/inflamns Age<55 w/o cc	134	516	118	1.9%
Total of Top Outflow DRGs	2304	3785	1040	32.1%
<b>Total of Outflow DRGs</b>	<b>7,172</b>	<b>19,448</b>	<b>6,538</b>	<b>100%</b>

Tertiary overnight outflows make up only 7.5% of the total outflows. 95% of these tertiary overnight outflows are appropriately provided within a Specialist Children's Hospital.

Provision of non tertiary care within the Specialist Children's Hospitals cost the Health system as a whole, more than it would if those services were provided by District level hospitals. For example, the average cost of a weighted inpatient episode of care that is adjusted for tertiary cases is \$2,456 for a specialist paediatric hospital and \$2,147 for a major metropolitan hospital. The average cost reflects the cost of more complex infrastructure provided at the specialist hospitals. Services provided at Campbelltown Hospital are generally cheaper again than the average for a major metropolitan hospital.

Of the 3250 non tertiary overnight outflows:

- the CHW and SCH provide 64% and 16% of the service respectively,
- 1820 or 56% of these episodes of care are unplanned,
- Respiratory illnesses and gastroenterology combined represent 39% of the unplanned component.
- Of the 1430 planned admissions, 736 or 51% were surgical admissions with ear nose and throat, miscellaneous surgery and orthopaedics representing the highest demand. Respiratory and miscellaneous medical admissions represented the highest demand for 615 medical admissions.

Of the 3386 day only outflows:

- the CHW and SCH provide 67% and 18.5% of the service respectively,
- 704 or 21% of these episodes of care are unplanned,
- the majority of the unplanned episodes of care are provided by CHW
- Miscellaneous medicine, chemotherapy and haematology were the major reasons for day only emergency care.
- Major reasons for planned day only care were for miscellaneous surgery, medical oncology, ear nose and throat surgery, haematology and urological surgery.

### 4.3 Private Demand

Private sector made up 11% or 2344 episodes of care of the total inpatient demand in 1998 / 1999. Table 10 identifies the top 10 DRGs for SWSAHS residents presenting to Private Hospitals in this year with the majority being for surgical or procedural treatment on a day only basis. Recent changes to Federal Government policy changes to private health insurance may impact on the demand for private sector services in the future. The recent closure of Bankstown Private Hospital is expected to result in an increase in the births at Bankstown Hospital.

**Table 10**

Top 10 DRGs for SWSAHS residents presenting to Private Hospitals in 1998 /1999				
DRG	EOC	Beddays	CWTD	EOC % of Private EOC
122 Tonsillectomy &/or Adenoidectomy	783	795	380	33.4%
124 Myringotomy w Tube Insertion	322	322	106	13.7%
128 Dental Extractions & Restorations	212	212	86	9.0%
613 Circumcision Age<10	113	113	36	4.8%
484 Other Skin, Subcutaneous Tissue & Breast Procedures	102	103	52	4.4%
117 Miscellaneous Ear, Nose, Mouth & Throat Procedures	61	63	40	2.6%
515 Minor Skin Disorders	51	51	19	2.2%
054 Other Disorders Of The Nervous System w/o cc	47	156	33	2.0%
139 Other Ear, Nose, Mouth & Throat Diagnoses w/o cc	45	46	13	1.9%
611 Testes Procedures Except for Malignancy Age<10	35	35	15	1.5%
Total of top 10 Private DRGs	1771	1896	780	75.6%
<b>Total of Private Demand</b>	<b>2,344</b>	<b>3,276</b>	<b>1,218</b>	<b>100%</b>

### 4.4 Current Supply of Paediatric Inpatient Services

South Western Sydney provides inpatient paediatric services in all its hospitals. Activity presented is the total activity for 1998/99.

- Campbelltown and Liverpool provide the greatest volume and complexity of service. (Approximately 4300 and 3500 episodes of care (EOC) per annum respectively) Campbelltown currently employs a Paediatric Staff Specialist in their Emergency Service (currently funded from their ED budget) and Liverpool provides a nursing outreach service.
- Bankstown provides the next largest volume of services (2,200). However, a proportion of its activity is from Central Sydney and is largely unplanned in nature.
- Fairfield provides a smaller service (nearly 1,700) and has built up a nursing outreach service and a paediatric staff specialist presence in the Emergency Department.
- Camden does not have a paediatric unit and provides mostly unplanned or day only services (over 200).
- Bowral operates as a rural hospital (700).

Table 11 outlines the existing bed numbers and occupancy in 1998/99

**Table 11**

Summary of Total Paediatric Admissions ( children 1mth - 14 years) in SWSAHS Hospitals in 1998/99						
Sector	Total EOC	Total Beddays	ALOS	Built Beds	Occupancy Rate (built beds)	Total CWTD
Macarthur	4,335	8,562	1.98	30	67.97%	2,669
Liverpool	3,457	7,311	2.11	25	80.63%	2,292
Bankstown	2,246	4,591	2.04	20*	68.09%	1,337
Fairfield	1,740	3,703	2.13	24*	52.84%	1,069
Bowral	730	1,456	1.99	10	40.55%	479
<b>SWSAHS</b>	<b>12,508</b>	<b>25,623</b>	<b>2.05</b>	<b>109</b>	<b>n/a</b>	<b>7,845</b>

\* Available beds range from 12 to 17 beds depending on seasonal fluctuations.

SWSAHS currently provides 109 built beds. At present, these beds are not fully utilised with the occupancy rate ranging from 40.55% at Bowral to 80.63% at Liverpool. While Bankstown and Fairfield Hospitals have greater built capacity, the paediatric wards are staffed to operate at 12 – 17 available beds depending on seasonal fluctuation. A higher occupancy rate than identified in Table 11 is achieved if based on the available rather than built beds.

Table 12 outlines the non-tertiary admissions to SWSAHS Hospitals in 1998 / 1999. These admissions are based on the total supply of non tertiary services in SWSAHS Hospitals. This includes supply for SWSAHS residents and residents of other areas. 74.8% of the total non tertiary admissions are unplanned, though Bankstown, Fairfield and Camden Hospitals have a slightly higher percentage of emergency admissions.

**Table 12**

Summary of Non Tertiary Admissions to SWSAHS Hospitals in 1998 / 1999						
Hospital	Non Tertiary EOC	Beddays	ALOS	CWTD	Unplanned % of Total NT EOC	Unplanned % of Total NT Beddays
Campbelltown	4,062	8,144	2.0	2,423	70.1%	75.7%
Liverpool	3,408	7,089	2.1	2,163	71.1%	78.7%
Bankstown	2,209	4,497	2.0	1,293	81.8%	85.4%
Fairfield	1,718	3,658	2.1	1,027	87.7%	84.6%
Bowral	722	1,436	2.0	462	63.0%	66.4%
Camden	207	322	1.6	102	89.4%	65.5%
<b>Total</b>	<b>12,326</b>	<b>25,146</b>	<b>2.0</b>	<b>7,469</b>	<b>74.8%</b>	<b>78.9%</b>

Table 13 outlines the tertiary admissions to SWSAHS Hospitals. These tertiary admissions make up only 1.5% of the total paediatric admissions to SWSAHS Hospitals. Fairfield and Camden hospitals have a significantly higher percentage of unplanned admissions than the other hospitals. This relates in part to the lower role delineation of these hospitals and the fact that they did not admit neonates growing up under a tertiary code.

**Table 13**

Summary of Tertiary admissions to SWSAHS Hospitals in 1998 / 1999						
Hospital	Tertiary EOC	Beddays	ALOS	CWTD	Unplanned % of Total EOC	Unplanned % of Total Beddays
Campbelltown	56	198	3.5	138	69.64%	46.46%
Liverpool	47	215	4.6	117	78.72%	44.19%
Bankstown	44	231	5.3	115	75.00%	59.31%
Fairfield	21	51	2.4	33	95.24%	82.35%
Bowral	11	40	3.6	22	54.55%	32.50%
Camden	4	4	1.0	3	100.00%	100.00%
<b>Total</b>	<b>183</b>	<b>739</b>	<b>4.0</b>	<b>428</b>	<b>75.96%</b>	<b>51.83%</b>

Source: Flow Info v4

The need to adjust for seasonal fluctuations in demand for paediatric admission is an ongoing concern in the planning of paediatric services. The first quarter of the financial year generally has the highest number of episodes of care and beddays and the third quarter has the lowest. For 1998 / 1999 there were 3,580 episodes of care and 7,841 beddays in the first quarter. In the third quarter this dropped to 2,771 episodes of care and 5,284 beddays. Table 14 describes the variation in these seasonal fluctuations for each of the SWSAHS hospitals.

**Table 14**

Seasonal Fluctuation between the third and first quarter in 1998 / 1999							
Hospital	Bowral	Campbelltown	Camden	Bankstown	Liverpool	Fairfield	SWSAHS
EOC	156-206	924-1,138	45 - 49	536-672	752 - 995	358-520	2771-3580
Fluctuation	32%	23%	9%	25%	32%	45%	29%
Beddays	274-471	1824-2546	45-102	1027-1422	1462-2126	652-1174	5284-7841
Fluctuation	72%	40%	127%	38%	45%	80%	48%

Source: Flow Info v4

Planning for inpatient beds needs to identify options to accommodate the substantial variation for bedday requirements resulting from this seasonal fluctuation. Using this fluctuation rate and an occupancy rate of 85%, a review of the built beds indicates the total number of beds currently built within SWSAHS provides for this range of fluctuation, however some hospitals are over bedded and others are under bedded. Table 15 outlines the match between the current built beds and the estimated bed requirements for 1998. The difference in bed numbers between existing beds and the bed numbers required to meet seasonal fluctuations is identified. A positive bed number indicates an oversupply and a negative number indicates a bed deficit. In 1998, Liverpool and Macarthur had limited flexibility to cope with the seasonal bedday fluctuations. Fairfield and Bankstown Hospitals currently operate with fewer beds available than built, varying between 12 to 18 depending on seasonal fluctuations. Thus services are provided to meet the actual need.

**Table 15**

Match between bed availability and estimated bed requirements 1998						
Supply 1998	Macarthur	Bankstown	Fairfield	Liverpool	Winge-carrabee	SWSAHS
Existing built beds	30	20	24	25	10	109
Estimated beds required	29	16	12	25	5	87
Estimated beds required for seasonal fluctuations	35	18	17	30	7	108
<b>Difference between existing built beds in 1998 and those required for seasonal fluctuation</b>	<b>-5</b>	<b>2</b>	<b>7</b>	<b>-5</b>	<b>3</b>	<b>1</b>

Source: APPI 2000

#### 4.4.1 Impact of Adolescent Services on existing bed numbers.

Adolescents have particular needs in the hospital setting. At present they receive services within the paediatric ward or in general medical or surgical settings. It is important for service development to recognise the development needs of the adolescent. Adolescents mature, physically and emotionally at different rates. Individual preference for where they are located as an inpatient is important for adolescents, particularly for longer stays and for older adolescents. Those with greater maturity may prefer to be placed in adult wards. Less mature adolescents would be better placed within a specially designated area of the Paediatric Ward. Given the fluctuation in episodes of care for adolescents, it is proposed that an area within the children's ward could be used flexibly according to the need for adolescent beds over time, rather than building a specific adolescent ward that would not be utilised efficiently.

Table 16 outlines the numbers of beds required for adolescents. Beds for adolescents aged 12 years to 14 years 11 months are included within the existing and estimated paediatric inpatient beds identified in Table 15. Bed requirements for older adolescents (aged 15 years to 17 years 11 months) have been estimated in Table 16. These beds will be required in addition to those estimated for the younger age group, but exclude those adolescents giving birth as these were considered to require particular care. The larger number of older adolescents at Liverpool reflects the demand for orthopaedic services. The estimation of additional beds required is based on the assumption that it would be more developmentally appropriate to place approximately half this older group of adolescents in an adult setting.

**Table 16**

Additional beds required for older Adolescents 1998						
Supply 1998	Macarthur	Bankstown	Fairfield	Liverpool	Bowral	SWSAHS
15 years to 17 years 11 months	3	2	1	6	1	13
<b>Estimated additional beds for adolescents</b>	<b>1.5</b>	<b>1</b>	<b>.5</b>	<b>4</b>	<b>.5</b>	<b>6.5</b>

Source: Flowinfo v4

Table 17 identifies the number of swing beds required for adolescents in each hospital. The broader needs of adolescents may also be met by considering the recruitment of an Area adolescent specialist in the next appropriate round of VMO appointments.

**Table 17**

Estimated beds required for a swing area for Adolescents						
Supply 1998	Macarthur	Bankstown	Fairfield	Liverpool	Bowral	SWSAHS
12 years to 14 years 11 months	3	2	1	3	1	10
15 years to 17 years 11 months	1.5	1	.5	4	.5	7.5
<b>Total swing beds required (12 years to 17 years 11 months)</b>	<b>4.5</b>	<b>3</b>	<b>1.5</b>	<b>7</b>	<b>1.5</b>	<b>17.5</b>

#### 4.4.2 Inpatient Admissions from the Emergency Department

The Emergency Department provides an important point of access for the community to the Health Service. Table 18 outlines the number of admissions following Emergency Department visits by children 0 – 14 years in SWSAHS 1998 (EDDC). On average 24.4% of children presenting to the Emergency Department are admitted to the Hospital. Access to paediatric medical cover has been raised as a problem at night. On average 20.9% of

children admitted have presented between 10pm and 7.59am. Appendix 4 provides greater detail of the time that children are admitted following presentation to the Emergency Department and the triage category at the time of presentation.

**Table 18**

Number of Admissions following Emergency Department Visits by children 0 – 14 years in SWSAHS 1998 (EDDC)							
Hospital	Bowral	Campbell-town	Camden	Banks-town	Liverpool	Fairfield	SWSAHS
Total Paediatric presentations to ED	2,960	11,114	2,471	6,678	9,256	5,943	38,422
Total admitted from ED	326	2876	154	1915	2581	1512	9364
Total % who present and are admitted	11.0%	25.9%	6.2%	28.7%	27.9%	25.4%	24.4%
% of Night admissions 10pm-7.59 am to total Admissions	16.0%	17.1%	22.1%	27.6%	19.9%	22.6%	20.9%

Source: EDDC - Epidemiology Unit

NB: The actual numbers in Table 18 vary slightly from Table 2 as it excludes data in which the Triage category was not stated or missing, or where the Age or Time of Arrival was missing or mis-coded.

## 4.5 Inflows

The majority of inpatient services provided in SWSAHS hospitals are for SWSAHS residents. However SWSAHS provides inpatient services to a small number of residents of other Area Health Services. In 1998 / 1999 SWSAHS hospitals received 1040 inflows from other Area Health Services. This represents 8.3% of the total supply of services within SWSAHS. The major inflows to SWSAHS hospitals in 1998 / 1999 are outlined in Table 19. Most inflows (453 or 43.5%) come from Canterbury to Bankstown hospital. Bankstown, Bowral, Liverpool and Fairfield hospitals also have some inflows from surrounding suburbs, Campbelltown and Liverpool have inflows from across the state. Respiratory medicine represents the majority or 22.9% of the total inflows and surgical and procedural intervention for ear nose and throat, miscellaneous surgery and orthopaedics represents 35.7% of the total inflows.

**Table 19**

Inflows to SWSAHS hospitals in 1998 / 1999				
Flow Type	Day Only	Non Tertiary	Tertiary	Total
Capture	2850	8494	125	11469
Inflow	309	724	7	1040
Supply	3159	9218	132	12509
Inflow % of supply	9.8%	7.9%	5.6%	8.3%

Source: Flow Info v4

### 4.5.1 Potential Changes in CSAHS Inflows

Bankstown Hospital activity has been significantly affected by flows from Central Sydney residents over the last 5 years. Following the closure of the Children's Hospital at Camperdown in 1995 there was an increase in flows from Central Sydney in 1996/97. This occurred despite the establishment of a temporary paediatric service at RPAH. The volume of CSAHS clients flowing to Bankstown has gradually declined each year since 1996/97. In November 1998, Canterbury Hospital opened 9 paediatric beds.

10 paediatric beds have remained open at RPAH. In that year 1998/99 CSAHS residents represented 21.2% of the Bankstown supply, by 1999/00 this proportion declined to 14.2%. This represents a significant decline in residents of CSAHS attending Bankstown Hospital. However, the Punchbowl / Roselands activity makes up 44 to 57 % of the

CSAHS inflow, this decline may plateau out as a result of natural flows to Bankstown from this area. The impact of CSAHS flows and services needs to be considered in planning services for Bankstown.

## 5 CURRENT HUMAN RESOURCE AND PHYSICAL INFRASTRUCTURE FOR INPATIENT SERVICES

### 5.1 Revised Role Delineation and Specialist Paediatric Services Planning

Role delineation is a process that determines the support services, staff profile, minimum safety standards and other requirements to provide particular services. Each hospital is required to provide services consistent with the hospital's role and catchment area. Table 20 outlines the current role delineations of paediatric and related services within SWSAHS hospitals based on the June 1991 NSW Health Guide to Role Delineation. The current levels were determined by consultation with Sector Management and following a review of the Hospital's support structures required to meet the Role Delineation guidelines.

**Table 20**

Current Role Delineation for paediatric and related services within SWSAHS Hospitals						
	Bankstown	Fairfield	Liverpool	Campbelltown	Camden	Bowral
<b>Maternal and Child Services</b>						
Obstetrics	5	4	6	4	3	3
Neonatal	3	3	5	4	2	2
Paediatric Medicine	3	3	5	5	1	3
Paediatric Surgery	3	3	4	4	1	2
Family and Child Health	5	5	6	5	3	3
Child Protection	3	3	4	4	1	3
<b>Integrated Community and Hospital Services</b>						
Adolescent Health	3	1	4	5	1	3
Health Promotion	5	5	6	5	4	5

Source: Area Operations Plan 1999.

NB Campbelltown and Camden delineations are those proposed for the service following the completion of the Macarthur Strategy rebuilding / refurbishment.

The Department of Health has recently reviewed the Role Delineation for all services including paediatric medical and surgical services. The NSW Department of Health Guide to Role Delineation of Health Services (draft revised September 1999) outlines revised requirements. Though this revision has not yet been released in full, the major implication for SWSAHS hospitals of the revised requirements for paediatric medicine and surgery are the use of paediatric competent nurses in level 2/3 services. Most hospitals have sought to recruit staff with paediatric experience and training for the paediatric inpatient services. If the recommendations become policy, then SWSAHS hospitals may need to develop recruitment and training strategies to meet these requirements. Level 5 paediatric services require a paediatric registrar on site 24 hours. Though Campbelltown and Liverpool Hospitals are currently defined as level 5 medical services they do not provide a paediatric registrar on site 24 hours. This plan seeks to identify options to improve SWSAHS's ability to meet these role delineation requirements.

Statewide paediatric planning of services in 1999 recommended the need for district hospitals to refer tertiary services to the Specialist Children's Hospitals and to provide only those services allowable within their role delineation. This process reviewed a range of DRGs that were appropriate for care in role delineation level 2, 3 and 4 hospitals. Policy determinations following this review are expected following the metropolitan wide specialty planning.

There is a need to ensure the provision of paediatric surgery by appropriately qualified paediatric surgeons and anaesthetists and the development of a SWSAHS network for paediatric surgical services.

## **5.2 Paediatric nursing competencies**

The current requirement for nursing staff according to the June 1991 Role Delineation Guidelines is that paediatric units require “a nurse unit manager and experienced registered nurses” for paediatric level 3 medical and “registered nurses” for surgical services. Level 3 medical services require that some nurses should have or undertake relevant post basic training. Level 3 surgical services require that there be continuing nursing educational programs available specific to the needs of the service.

Most Sector paediatric inpatient services expect that all staff in paediatric units have a paediatric certificate. Most services encourage their staff to complete the College of Nursing graduate certificate in paediatric nursing and provide Sector based annual paediatric workshops for staff to upgrade key paediatric skills.

The revised role delineation document proposes an upgrade of the requirements to “registered nurses with skills consistent with a competent paediatric nurse” and provides for a nurse unit manager or access to a clinical nurse consultant within the Area.

There are currently two sets of competencies for paediatric nurses. One focuses on competencies for community based early childhood services for children under 5 years of age. This is the Child and Family Nursing Association (CAFNA). These competencies do not adequately address the full paediatric age group or inpatient services. The other is the Australian Confederation of Paediatric and Child Health Nurses (ACPCHN). This is applicable to the full paediatric age group (0 to 14 years of age) and for both inpatient and community based services. However, this does not yet provide a formal system for credentialling of nurses. Provision of ongoing training and the potential for these upgraded skill requirements for nurses needs to be considered in the service planning for paediatrics.

## **5.3 Paediatric Medical Officer Coverage for SWSAHS Hospitals**

There is a strong network of Paediatric Visiting Medical Officers appointed to each of the hospitals within SWSAHS. Quarterly meetings of this group ensure a focus on quality of services throughout the SWSAHS paediatric services. A number of the VMOs have cross appointments with other hospitals including CHW, SCH and Canterbury. The Specialist Children’s Hospitals have established a number of specialist outpatient clinics at Liverpool and Campbelltown hospitals. These have provided high quality assessment and follow up of children. However, there is a need to negotiate more regular provision of these services including inpatient consultation.

Paediatric VMOs and registrars provide a service to the maternity and neonatal wards as well as the paediatric ward. Callbacks of VMOs occur for clinical reasons and where registrar cover is not sufficient to address the clinical problem at hand. Any changes to the paediatric services within SWSAHS must ensure appropriate ongoing medical coverage of maternity and neonatal services. There is a need to improve the quality of care provided in Paediatric services. Accreditation of VMOs is an important mechanism to maintain and improve the quality of care. This needs to be linked to call back guidelines. The provision of networked services is another mechanism. A third mechanism is the selection of VMOs

with particular accreditation to target areas of need. Both Liverpool and Campbelltown Sectors have recently appointed additional paediatric surgeons and are negotiating paediatric anaesthetic cover. Details of this are included in Section 6.5. The appointment of an adolescent specialist would also address the particular needs of adolescents within the inpatient setting.

Table 21 outlines access to paediatric medical officer services within each sector. The Macarthur sector includes Campbelltown and Camden Hospitals and VMOs and staff specialists provide services to both hospitals. In addition to these medical services Liverpool Hospital also provides 2 clinical genetic staff specialists and a genetics counselor through the Department of Genetics. The Department of Developmental Paediatrics provides 1 Developmental Paediatrician Staff Specialist and a seconded registrar from SCH. Enhancement funding has been allocated for a senior staff specialist based at Liverpool to provide PANOC services for the Area.

**Table 21**

Medical Officer coverage including Staff Specialists and Visiting Medical Officers					
Medical Officer coverage	Wingecarribee	Macarthur	Bankstown	Liverpool	Fairfield
Number of VMOs	1 and 8 GP paediatricians	3 & 1 associate, 2 Staff Specialists	4	4 1 Staff specialist	3 & 1 Consultant Paediatrician 1 Staff Specialist
VMO roster	VMO on call or support from C'town GP roster	1 in 4	1 in 4 for one week at a time	1 in 5 including staff specialist	1 in 3
Major cross appointment	Nil	CHW - 2 SCH - 2 & 1 expected	SCH - 3 Canterbury - 3 B'twn Priv - 3 CHW - 1	Fairfield - 2 SCH - 2 CHW - 2 1 each for Westmead, The Hills and NSW Private 3 - Sydney South West	Liverpool - 2 CHW - 1 1 - Nepean & Mt Druitt
Estimated VMO callbacks	10 / mth 50:50 to maternity: children's ward	7 - 10 per week	7.2 per week	2 per week NB acute neonatology is covered by a separate service.	6 per year

SWSAHS hospitals have experienced difficulties in attracting 24-hour registrar cover (as required under the role delineation for level 5 paediatric medical services) and junior medical cover with some training or experience in paediatrics. This varies from hospital to hospital and over time. The employment of Staff Specialists or Career Medical Officers with some paediatric experience offers an alternative, though more expensive strategy to improve the safety and quality of care provided.

**Table 22**

Registrar and Junior Medical Officer coverage					
Hospital	Bowral	Macarthur	Bankstown	Liverpool	Fairfield
Junior Medical Officers in paediatric wards	Nil	1 x Senior Registrar 2 Registrars  5 RMOs usually 2 year or above All rotated 4 each from SCH and CHW	1 x registrar seconded from SCH  RMOs may not have paed experience	1 x registrar from SCH funded by neonatology;  3 RMOs - 1 from SCH - RMO 2 or higher & may have some paed experience, 2 from Liverpool RMO 1 or 2 but may not have paed experience	1 x SRMO

## 5.4 Paediatric Links to Maternity and Perinatal Services

Medical staffing of paediatric inpatient services is linked to the provision of oncall services by VMO paediatricians or paediatric registrars in the delivery suite and to the provision of perinatal care. Table 23 identifies the total births delivered in SWSAHS Hospitals in 1998 / 1999. Caesarean births make up 13.5% of the total deliveries. Table 22 also indicates that there is very slight variation in the percentage of caesarean deliveries between SWSAHS hospitals. Caesarean births are more likely to require a paediatrician to be called than vaginal deliveries. The need for paediatric and anaesthetic support for neonatal and obstetric services require resolution in the neonatal plan. These issues also need to be considered in the planning of general paediatric services to ensure appropriate clinical staffing and resources are not compromised in maternity and perinatal services at each of the SWSAHS hospitals.

**Table 23**

Total Births in SWSAHS Hospitals in 1998 / 1999						
Births	Macarthur	Bankstown	Fairfield	Liverpool	Wingecarribee	SWSAHS
Caesarean	400	249	263	428	83	1423
Vaginal Delivery	2472	1674	1775	2681	519	9121
Caesarean % of total births	13.93%	12.95%	12.90%	13.77%	13.79%	13.50%
<b>Total Births</b>	<b>2872</b>	<b>1923</b>	<b>2038</b>	<b>3109</b>	<b>602</b>	<b>10544</b>

Table 23 summarises the perinatal admissions to SWSAHS Hospitals in 1998 / 1999. Liverpool and Macarthur each manage one third of the total SWSAHS perinatal services with Liverpool as the largest service provider. Fairfield has the next greatest load, then Bankstown with very few admissions to Wingecarribee. These admissions do not represent the full activity of the Special Care Nurseries within SWSAHS. This data discrepancy will be addressed in more detailed local planning for the needs of neonates.

**Table 24**

Summary of Perinatal Admissions and Qualified Babies admitted to SWSAHS Hospitals in 1998 / 1999 for children less than 1 year						
Hospital	EOC	Beddays	ALOS	CWTD	% of Total EOC	% of Total CWTD
Liverpool	783	8,494	10.85	3,254	31.25%	55.12%
Campbelltown	698	5,693	8.16	1,206	27.85%	20.43%
Fairfield	587	3,536	6.02	777	23.42%	13.16%
Bankstown	261	2,212	8.48	448	10.42%	7.59%
Bowral	92	204	2.22	102	3.67%	1.73%
Camden	85	571	6.72	115	3.39%	1.95%
SWSAHS	2,506	20,710	8.26	5,903	100.00%	100.00%

Source: Flow Info v4

## 5.5 Paediatric Ambulatory and Outreach Services.

SWSAHS recognised the need to improve the care provided to children presenting to Emergency Departments and to ensure a smooth transition to a continuum of care including greater ambulatory and outreach services. Campbelltown and Fairfield hospitals' Emergency Departments have appointed a paediatric staff specialist within their Departmental profiles. In the Macarthur sector the Emergency Department Paediatric Staff Specialist position provides a direct care role for children in the Emergency Department. However, these positions are primarily Emergency Department Positions and may not

necessarily be replaced as such in the long term. A paediatric emergency consultation service was established at Fairfield Hospital following an initial proposal to relocate paediatric inpatient services to Liverpool Hospital. Paediatric nursing outreach services operate at Fairfield and Liverpool Hospitals and are supported by generalist primary health nurses. Table 24 outlines the current availability of these services by sector.

**Table 25**

<b>Paediatric Ambulatory and Outreach Services in SWSAHS</b>					
<b>Hospital</b>	<b>Bowral</b>	<b>Macarthur</b>	<b>Bankstown</b>	<b>Liverpool</b>	<b>Fairfield</b>
Specialist Paediatrician in the Emergency Department	Nil	1 ED Staff Specialist (Paediatrician)	Nil	Nil	.5 ED Staff Specialist with Paed skills
Paediatric staff specialist available for consultation within Emergency Department	24 hour access to GP with paediatric skills	No designated position. Role provided by ED Paediatric Staff Specialist	No designated position	1 Paediatric Staff Specialist for policy and staff education	1 Paediatric Staff Specialist
Nursing outreach program	Nil	Nil	Nil	1 CNC 1CNS & PHN backup	1CNC 1.4 RN & PHN backup
Community Paediatrician	Nil	Provided by Developmental Staff Specialist	Nil	Role provided by Paediatric Staff Specialist 1 Registrar	Role provided by Paediatric Staff Specialist 1 Registrar

Emergency Department Specialist advocate that services provided within the Emergency Departments are best served by Emergency Department physicians who are trained to assess and treat the full range of presentations to emergency services. The nature and extent of paediatric consultation or educational support within Emergency Departments needs to be negotiated within Sectors according to an agreed model of care.

Fairfield Hospital has developed a particular model for ambulatory and outreach services that is outlined in a draft discussion paper (appendix 5). The Fairfield model includes Emergency Department services, community nursing outreach using specialist paediatric registered nurses, community child health services and a population health focus. This type of service has not yet been properly evaluated. Though the overall average length of stay (ALOS) for Fairfield was higher than other Sectors in 1998/99, there is some evidence that the ALOS has declined for some key unplanned admissions at Fairfield such as for asthma and respiratory medicine. The unplanned ALOS for asthma reduced from 2.52 in 95/96 to 1.99 in 98/99 and respiratory medicine reduced from 3.2 in 95/96 to 2.05 in 98/99. The evaluation of this service needs to address the fidelity of the program, a closer examination of the ALOS and readmissions in comparison to other services, the specialist component of the services and the satisfaction of stakeholders.

There is a need for allied health outpatient services to be expanded and linked with the Ambulatory model and for the provision of specialist outreach clinics from the Specialist Children's Hospitals to be supported by a nurse coordinator. The extent of expansion of allied health services will need to be reviewed in terms of the need for inpatient services, ambulatory care and to avoid duplication with community based services, funded externally to Health.

## **5.6 Current Network of Specialist Outreach Clinics**

The Sydney Children's Hospital and the Children's Hospital at Westmead both provide a number of Specialist Outreach clinics in hospitals within SWSAHS. The Royal Prince Alfred Hospital at Camperdown also provides specialist clinics.

Specialist clinics at Campbelltown Hospital are mostly provided by the Sydney Children's Hospital and include monthly clinics for Neurology, Haematological Oncology, Respiratory Medicine and Endocrinology. The Children's Hospital at Westmead provides a monthly cardiology clinic.

Specialist clinics at Liverpool Hospital are mostly provided by the Sydney Children's Hospital and include monthly clinics for Neurology, Cardiology, Immunology / Allergy and Nephrology. The Royal Prince Alfred Hospital at Camperdown provides a diabetes clinic every three months.

The Greater Western Paediatric Network proposes to increase the specialist outreach clinics available from the Children's Hospital at Westmead.

## **5.7 Links to Population Health Programs**

Improvements in the health outcomes of children require a broader approach than paediatric inpatient service development. The emphasis in this Plan is to ensure appropriate structures and resources to provide high quality inpatient services. However, as identified in the NSW Child Health Policy Good Start Better Health, these services need to have clearly established links to a range of population health approaches aimed at the improvement of children's health. The Families First Program and the Tobacco Control Plan are two major public health programs that are relevant to Children's health improvement.

The Families First Program includes a home visiting component that provides practical advice and support to new parents. SWSAHS is the first Area Health Service to implement this program as it is phased in across the state. The program is based on a partnership of key agencies including Department of Community Services, Health, Local Government and other community based agencies. The program operates in a collaborative way. Evaluation of similar programs in the US has indicated the achievement of significant health gains for the children involved. Most Sectors are in the process of developing a Families First Program.

Implementation of the Tobacco Control Plan will address a number of the issues related to smoking and thus indirectly address the impact of smoking on children's health. These two major public health programs require an investment in health promotion and require a partnership approach at both an Area and Sector level.

## **5.8 Current Paediatric Inpatient Infrastructure**

The functionality of inpatient paediatric wards is crucial to the provision of safe and effective services. This includes good line of sight from the nursing station to key beds where the most acute cases are nursed. Additional facilities are required in a ward to promote the welfare of children in hospital and their parents. A number of these facilities include:

- access to rooms where parents can “room in” (a role delineation requirement for level 3 medical and surgical services),
- access to outside play areas,
- provision of a specific area for children to attend school; and
- the ability to swing beds according to the required need for utilisation at the time. This does not mean that children would share a room with adults, but that there would be flexibility to use more or less beds according to seasonal fluctuations.

A review of the SWSAHS Paediatric Units’ Infrastructure is summarised below:

- In 1998/99 Campbelltown Hospital needed an additional 5 built beds to meet seasonal fluctuations for children under 15 and 1.5 beds to meet the needs of older adolescents. Management of children requiring day surgery within the day surgery service gave the Sector with some flexibility to meet the service needs. The Campbelltown Hospital Paediatric redevelopment was opened in October 2000. It has sufficient built infrastructure (38 paediatric beds and 8 adolescent beds) to provide for growth and return of outflows to Macarthur. The design of the ward is functional and provides the facilities noted above. The ambulatory care component of the service will include 10 of the 38 beds.
- Liverpool Hospital currently has only 25 built beds. The 1998/99 demand for service and seasonal fluctuations indicates 8 additional beds are needed for children and older adolescents. Currently the Liverpool Hospital paediatric unit has a number of problems with its infrastructure. The ward area was not originally designed as a paediatric ward and requires refurbishment or replacement to improve the line of sight for key beds. It has one room available for rooming in but this is more often used by the neonatal services. Refurbishment of the treatment room, schoolroom and outside play area is also required to improve the functionality of the ward. There is also a need for a short stay area fitted with chairs rather than beds for same day pre and post operative care and medical services. This would provide more effective management of beds for the service as a whole. As a minimum the ward needs to be refurbished, or preferably relocated to a space that would allow sufficient beds for the services required.
- Bankstown Hospital paediatric ward of 20 built beds was opened in 1997 and is designed as a functional ward for the management of children with all the appropriate facilities. This includes a swing area that can be used for children or adults and locked into place according to which area needs the flexible area. Allowing for seasonal fluctuations in 1998, Bankstown needed one less built bed to meet the needs of children and older adolescents.
- Fairfield Hospital paediatric ward is in a large area, some of which is not used as it is not well appointed and is separate from the rest of the ward. The ward does not provide a schoolroom and it is difficult to separate toddlers and adolescents. Some additional sinks are required to meet infection control standards. The ward was built for 24 beds, but operates with 12 to 18 beds depending on seasonal fluctuations. This lower bed availability reflects the service’s need for 7 less built beds to meet the needs of children. However when adjusted to include the needs of older adolescents, 6.5 fewer built beds were required to meet the service needs in 1998.

- Bowral Hospital paediatric ward is co-located with the adult short stay ward. The paediatric ward needs 2.5 less beds after adjusting for seasonal fluctuations and the needs of children and adolescents. The ward needs refurbishment or relocation.

Hospital Emergency Departments are a key point of contact with the health service for families with children. As 25.7% of emergency presentations are for children under 15 years these departments need to reflect a child friendly approach.

- The Emergency Departments in Bankstown and Liverpool Hospital each provide 4 paediatric specific places. The new Campbelltown Hospital Emergency Department will provide for 6 paediatric spaces. The Bankstown and Campbelltown paediatric areas are decorated in a child friendly way. The Liverpool Emergency Department requires expansion and refurbishment.
- Both Bowral and Fairfield Hospital Emergency Departments need refurbishment to provide separate paediatric areas that are decorated in a child friendly manner. The needs of the Bowral service should be considered as part of the Wingecarribee clinical services planning. The Fairfield Hospital Emergency Department is relatively small and currently does not have the space to provide for separate child friendly waiting or treatment areas. The location of the Emergency Department between two major corridors and next to the radiology department would make it difficult to rearrange or extend the area to meet these needs. It would require substantial redesign / refurbishment to address the particular design issues in meeting these needs.

## 6 FUTURE SITUATION

### 6.1 Projected Paediatric Population

Table 25 shows the projected change in the population of children 0 – 14 years from 1998 to 2011. There is a growth expected from 1998 to 2006 in SWSAHS, but the child population is then expected to decline by 2011. Liverpool will experience the most growth and Macarthur will remain relatively steady over that time, however Fairfield and Wingecarribee are expected to see decreasing child populations. A chart of these changes is provided in appendix 6.

**Table 26**

Projected Growth and Decline in the Estimated Resident Population of SWSAHS 1998 to 2011						
0-14 Years	Wingecarribee	Macarthur	Bankstown	Fairfield	Liverpool	SWSAHS
1998	9,219	59,785	34,914	43,784	33,441	181,143
growth/ decline	-2.16%	1.68%	1.33%	-6.11%	28.73%	13.46%
2006	9,020	60,790	35,380	41,110	43,050	205,530
growth/ decline	-1.00%	-0.69%	-3.99%	-5.21%	8.27%	-8.12%
2011	8,930	60,370	33,970	38,970	46,610	188,850

Source: ABS Estimated Resident Population 1998

### 6.2 Projected Paediatric Inpatient Services

The Plan does not propose an increase in the current level of case complexity and any return of flows from the Specialist Children's Hospitals will require negotiation through budget holding. The Greater Western Metropolitan Planning proposal outlined in 6.3 proposed a systematic reversal in flows from the CHW to ensure a greater volume of

services at Liverpool and Campbelltown Hospitals. This proposal had substantial infrastructure implications. The current proposal for flow reversal includes non-sub specialty surgical services from CHW which has minimal impact. Section 6.5 identifies the potential return of non-sub specialty flows from the CHW and SCH.

Table 26 identifies the total projected demand by SWSAHS residents from 1998 to 2011. Total demand is expected to grow by 13.6% from 1998 to 2006 and then slow to 4.3% growth by 2011. The growth in private demand is expected to be smaller at 8.1% by 2006 and 1.1% by 2011. APPI 2000 projects that the private share of the total demand will drop from 11.2% in 1998 to 10.6% in 2006 and 10.3% in 2011. These projections reflect historical changes in demand, but do not take into account the possible changes in demand following recent Federal Government policy changes on private health insurance or the short or longer term closure of some local private hospitals within SWS.

**Table 27**

Projected Paediatric Demand by SWSAHS residents from 1998 to 2011											
Data	1998			2006			% growth	2011			% growth
	EOC	Beddays	ALOS	EOC	Beddays	ALOS		EOC	Beddays	ALOS	
Total demand	21004	46236	2.2	23862	46711	2.0	13.6%	24885	46023	1.8	4.3%
Public demand	18660	43125	2.3	21329	43566	2.0	14.3%	22324	42930	1.9	4.7%
Public outflow	7191	19489	2.7	8525	18991	2.2	18.6%	9068	19126	2.1	6.4%
Public capture	11469	23636	2.1	12803	24576	1.9	11.6%	13256	23804	1.8	3.5%
Private	2344	3111	1.3	2534	3144	1.2	8.1%	2561	3093	1.2	1.1%

Source: APPI 2000

Table 27 outlines the projected supply of inpatient episodes of care in SWSAHS Sectors in 1998 to 2011. The supply is projected by APPI 2000 and as it is derived from historical data reflects the natural flows to particular hospitals. Liverpool Hospital receives natural flows from the northern Campbelltown suburbs and from the Cabramatta area. Bowral Hospital receives flows from the south of the Wollondilly area and cases in the northern Wollondilly flow to the Nepean. These natural flows are taken into account in planning services.

**Table 28**

Projected Supply in SWSAHS Hospitals 1998 to 2011											
Sector	1998			2006			% growth	2011			% growth
	EOC	Bed-days	ALOS	EOC	Bed-days	ALOS		EOC	Bed-days	ALOS	
Macarthur	4,335	8,562	2.0	4,746	8,853	1.9	9.48%	4,900	8,566	1.7	3.24%
Bankstown	2,246	4,591	2.0	2,442	4,783	2.0	8.71%	2,450	4,501	1.8	0.35%
Fairfield	1,740	3,703	2.1	1,853	3,801	2.1	6.52%	1,888	3,609	1.9	1.85%
Liverpool	3,457	7,311	2.1	4,104	7,775	1.9	18.73%	4,328	7,666	1.8	5.45%
Winge-carribee	730	1,456	2.0	760	1,429	1.9	4.09%	797	1,407	1.8	4.94%
SWSAHS	12,508	25,623	2.0	13,906	26,642	1.9	11.17%	14,363	25,748	1.8	3.29%

Source: APPI 2000

The overall projected growth in supply for SWSAHS is consistent with the paediatric population growth projections for the same period. However, the growth in supply at individual hospitals does not reflect the population growth pattern such as for Liverpool sector or the substantial increase in Macarthur's capacity to provide services to its

residents or the full potential for provision of ambulatory services in each of the hospitals. APPI is therefore not considered reliable for supply, outflow or self-sufficiency forecasts. While acknowledging these limitations to the projections, they indicate that growth at Liverpool Hospital is the highest expected at 18.73% by 2006, with Macarthur expecting the next highest growth at 9.48% for the same period. Wingecarribee expects the lowest growth at 4.09%.

Over eight years between 1998 and 2006 APPI 2000 forecasts growth of 18.57% (or 2.35% growth per annum) in the day only component of total paediatric beddays in SWSAHS hospitals. Table 28 identifies the percentage of growth in the day only component of paediatric beddays over this period. These forecasts may be low as they reflect past trends. There is the potential to substantially increase day only services beyond that projected with appropriate sector based outreach services and the establishment of strong links to General Practitioners, VMOs and community services. Liverpool and Wingecarribee will experience the greatest growth in day only services. This will be important for Liverpool Hospital to achieve to address its physical constraints.

**Table 29**

Percentage of Growth in the Day only component of Beddays 1998 – 2006			
	1998	2006	1998 - 2006
Sector	% Day only Beddays	% Day only Beddays	Growth %
Macarthur	15.38%	17.98%	16.87%
Bankstown	11.68%	13.26%	13.56%
Fairfield	7.16%	8.32%	16.27%
Liverpool	11.68%	14.59%	24.86%
Wingecarribee	13.12%	15.64%	19.23%
SWSAHS	12.34%	14.64%	18.57%

Source: APPI 2000

Table 29 outlines the match between bed availability in 2006 and estimated bed requirements for 2006 based on an occupancy rate of 85% and allowing for similar seasonal variations to those experienced in 1998/99. The table indicates an increase of 15 beds available for Macarthur following the completion of the Macarthur Strategy. This includes 8 adolescent beds.

The bed requirements identified are based on APPI 2000's forecast of the supply of services within SWSAHS Hospitals. This does not allow for a return of flows from other Area Health Services. Similar discrepancies to those seen in 1998/99, between bed requirements and bed supply still remain. Liverpool requires 8 additional beds to meet the requirement for beds.

Fairfield, Bankstown and Bowral Hospitals have more beds than the demand for service requires. These hospitals are over supplied by 6.5, 1 and 3 beds respectively.

The table indicates that the Macarthur Hospitals are over supplied by 9 beds. However, these beds were planned to allow the Macarthur Hospitals to return flows from a number of other hospitals in order to achieve 85% self sufficiency. The Macarthur Strategy recognised that natural patient flows would continue to go to Liverpool, Wingecarribee and Nepean Hospitals. The implications of the Macarthur Strategy would be that some bed space would be freed up at Liverpool Hospital by patients who are non natural flows returning to Macarthur and that a similar proportion of Macarthur residents would continue to flow to Bowral Hospital. There have been a number of changes in service arrangements

since the development of the Macarthur Strategy Project Definition Plan. There is a need to review the flows between Macarthur and Liverpool Health Services and to develop a service agreement between the two Health Services.

**Table 30**

Match between total bed availability and estimated bed requirements 2006						
Supply 2006	Macarthur	Bankstown	Fairfield	Liverpool	Bowral	SWSAHS
Current beds (2000)	46	20	24	25	10	125
Estimated beds required	31	16	12	27	5	91
Estimated beds required for seasonal variations.	37	19	17	33	7	113
Estimated beds required for older adolescents	1.5	1	.5	4	.5	7.5
<b>Difference between available beds and beds required for seasonal variations</b>	<b>7.5</b>	<b>0</b>	<b>6.5</b>	<b>- 12</b>	<b>2.5</b>	<b>4.5</b>

Source: APPI 2000

### 6.3 Paediatric Planning for the Greater Western Metropolitan Area and the Metropolitan Services Implementation Group

Over the last three years, three Paediatric Networks have been established between the Specialist Children's Hospitals at Westmead, Randwick and Newcastle and their neighbouring Area Health Services.

The Greater Western Paediatric Network Feasibility Proposal was one of the first developed and followed planning by the CHW and the Greater Western Sydney Area Health Services including SWSAHS, WAHS and WSAHS. The Greater Western Metropolitan Planning and Feasibility Proposal identified the need to establish hub services operating at a role delineation of level 4/5 with smaller ambulatory based medical services operating at level 2/3. All surgical services would be provided by the level 4/5 services. It was recommended for SWSAHS that Liverpool and Campbelltown become hub hospitals and that Bankstown and Fairfield become level 2/3 services. Surgical and overnight flows were planned to flow from Bankstown to Canterbury Hospital and CHW and from Fairfield to Liverpool Hospital and CHW.

The objective of this proposal was to increase accessibility of services to the local community. The proposal would allow two sites (Campbelltown and Liverpool) to achieve sufficient activity to attract 24 hour registrar cover. The proposal was also aimed at increasing quality of services and networking across the Greater West. Joint training and specialist outreach clinics were identified as key components of improving quality services. A badging system was also proposed to promote the quality of services to the public.

In 2000, the network partners formalised the relationship into the Greater Western Sydney Child Health Network. The priority of this Network has been on improving ambulatory paediatric and emergency services and auditing of existing facilities in terms of the Guidelines for the Hospitalisation of Children. Rotation of nursing staff and collaboration in the training of nursing staff, improved recruitment of allied health staff and improved communication within the Network and about the Network are also high priorities. SWSAHS has raised the option of returning surgical flows to the Children's Hospital Westmead in the context of budget holding. Any further flow returns will be discussed in this context.

SWSAHS also belongs to a Greater Eastern Paediatric Network including its eastern and northern metropolitan neighbours. It will be important for medical cross appointments to ensure links to both Sydney metropolitan specialist children's hospitals.

In May 2001 the Department of Health's Paediatric Services Network Steering Committee issued a discussion paper for comment on the Guidelines for Networking of Paediatric Services. This proposed the expansion of these three greater metropolitan paediatric networks to include rural health services. In August 2001 the Department of Health provided initial funding of \$1 million to the Greater Western Child Health Network to improve ambulatory paediatric services. Liverpool Health Service has received \$340,000 of this to provide ambulatory medical services and enhance the existing nursing outreach services.

#### **6.4 Networking of Services**

Networks are a cooperative approach by people providing services. This at a basic level may involve a sharing of information, expertise and knowledge to provide the same level of high quality of care to all people who need it.

Networks may operate in a number of ways, For example

- Services distributed at a number of sites - such as emergency services;
- Hub and spoke models - where more complicated surgery or services are performed at larger hospitals such as defined by the role delineation;
- Services provided only at particular designated "Centres" – such as chemotherapy at the specialist paediatric hospitals.

Network of the services is recognised in the Guidelines for the Hospitalisation of Children and by the findings of the NSW Health Council as an important strategy to ensure access to a range of services and to ensure quality of care. It will be important for the development of paediatric services in SWSAHS to identify appropriate opportunities for networking with the Greater West and between paediatric services within SWSAHS to ensure the same standard of care across the Area. The particular network developed for a service will need to marry together cost-efficiency and effectiveness of outcomes with factors such as community accessibility and practicalities such as workforce availability.

#### **6.5 Surgical Services Network**

The Liverpool Division of Surgery identified the need for qualitative improvement in the provision of paediatric surgical and anaesthetic services for both emergency on call services and elective surgery. As a result two paediatric surgeons have been appointed to Liverpool and Campbelltown and negotiation is occurring to recruit paediatric anaesthetic cover. These positions will address the population based growth in demand for services providing for an additional 877 EOC when fully implemented and a return of non –sub specialty surgical flows from the CHW of 331 EOC. This workload will be distributed across Campbelltown and Liverpool Hospitals. As the majority of services are day only surgery the impact on bed capacity is minimal.

#### **6.6 Potential return of flows**

In considering flow reversal, the volume and nature of the outflow activity was reviewed. CHW is a higher priority for the Area due to the large volumes and low complexity of a

significant proportion of the outflow. When assessing the activity that would be suitable to target for flow reversal, the following assumptions have been made:

- Information for 1999/00 has been used and has been sourced from the Department of Health's FlowInfo version 4.2;
- Tertiary paediatric services will continue to be provided at the specialist children's hospitals;
- 50% of flows to CHW from the Fairfield LGA will continue to flow to the CHW;
- Activity suitable for general surgery has been considered with activity related to other surgical specialities continuing to be managed by the relevant specialities;
- Both planned and unplanned non tertiary activity is considered suitable for reversal given the establishment of paediatric on-call rosters;
- Non-sub specialty medical services are also considered appropriate for flow reversal to the SWSAHS generalist paediatric services

There were 6,389 EOC provided for SWSAHS children outside the Area. The majority of the outflow is to the two Sydney specialist children's hospitals with 4,162 EOC (65%) of all outflows to CHW.

3,930 EOC (94%) to CHW in 1999/00 were for non tertiary services. Over 60% of this activity was classified as medical. The activity being targeted does not represent a significant component of the CHW workload.

Of the 3,930 EOC, 489 EOC were for non-sub specialty surgery. 66% of this activity was provided on a same day basis. Nearly 60% of the activity was related to the following ARDRGs: M05Z - Circumcision (134 EOC), G10Z - Hernia procedures age < 1 (58 EOC); I76C - Other connective tissue disorders < 70 w/o cc (50 EOC); and G09Z – Inguinal and femoral hernia procedure Age > 0 (47 EOC).

The 489 EOC were from the following Sectors:

- Fairfield 169 EOC
- Bankstown 123 EOC
- Liverpool 95 EOC
- Macarthur 92 EOC
- Wingecarribee 9 EOC

It is therefore proposed to target 50% of the Fairfield activity and 85% of the remaining activity in 2001/02. This would equate to 357 EOC and 242 CWTD EOC. Following discussions with CHW there is general agreement that 331 EOC and 220 CWTD EOC would be appropriate for flow reversal. A Paediatric Surgical Network has been established and on call and elective surgical services enhanced at Liverpool and Campbelltown Hospitals. Two beds will be provided within existing capacity. Funding for these services within the budget holding context is currently being negotiated.

Other options for flow reversal based on the same assumptions include medical non sub specialty from CHW and both surgical and medical sub specialty from SCH. The return of medical flows may be more difficult to achieve because of the emergency nature of many medical EOC. A number of outflows relate to follow up on completion of treatment. These have been excluded from flow reversal as they relate follow up of chronic or specialty conditions.

Of the 3,930 EOC to CHW in 1999/00, 2572 EOC are medical EOC, of this 1059 (41%) were provided on a same day basis and 1410 EOC (55%) were emergency admissions. Only 265 EOC were non sub speciality services, however 63% was for follow up of previous treatment thus not necessarily appropriate for flow reversal. Of the overnight services 414 (27%) were for non-sub specialty purposes. The 512 EOC for non-sub specialty medicine (excluding follow up of treatment) were from the following Sectors:

- Fairfield 170 EOC
- Bankstown 140 EOC
- Liverpool 106 EOC
- Macarthur 89 EOC
- Wingecarribee 7 EOC

If these EOC were reversed based on the same assumptions as for surgical return of flows 3 beds would be required for the Area. The bed requirements based on a distribution of flows according to Sector of residence would include Bankstown 0.8, Liverpool 0.8, Fairfield 0.8 and Campbelltown 0.6.

The outflows to SCH represent a small percentage of overall paediatric outflows, with the majority related to more specialised services. These are considered appropriate. In 1999/00 there were outflows of 1,049 EOC to Sydney Children's Hospital of these 654 EOC or 62% were medical. Of the medical EOC, 169 EOC or 26% were emergency admissions and 123 EOC were for non-sub specialty medicine (excluding follow up of treatment). Of the surgical EOC 115 EOC were for non-sub specialty surgery. Based on the same assumptions applied to the flow reversals from CHW 2 beds would be required across the Area to reverse medical and surgical non-sub specialty flows from SCH. The bed requirements would be provided within the network.

SWSAHS is limited in its ability return outflows to the paediatric ward of residence as the available beds and paediatric medical and surgical staff profile may not match a return of residents to their Sector hospital. It should be noted that there is currently not appropriate physical infrastructure at Liverpool to accommodate a significant increase in volume or complexity (such as a high dependency area or monitoring equipment). While Stage 2 Liverpool planning has allowed for a 40 bed paediatric inpatient unit and ambulatory care service, there is currently no capital funding available.

The establishment of paediatric networks will focus on return of flows to Liverpool and Campbelltown Hospitals. However, Liverpool Hospital has limited paediatric ward capacity, though considerable elective surgical services would be provided through the day surgical facilities. The feasibility of returning these medical flows will need to be reviewed more closely in the context of budget holding and future networking within SWSAHS.

## **6.7 Problems and Challenges to be addressed by the Plan**

A number of problems and challenges to be addressed by the Plan have been outlined below. These were developed following initial consultation with the Area Paediatricians on future options for service delivery, a review of the SWSAHS current services and forecast growth and relevant documentation such as the Guidelines for Hospitalisation of Children SWSAHS and the draft revised Guide for Role Delineation. They have been grouped into six categories.

### **6.7.1 Improved safety and quality:**

- The model of care for Paediatric services needs to provide clear continuity of care, flexibility in service provision and links to child health improvement strategies,
- None of the activity of the SWSAHS Paediatric Units is currently of sufficient volume of activity to attract sufficient registrars and to provide 24-hour registrar cover. This is required by the Role Delineation Guidelines for Campbelltown and Liverpool Hospitals to meet the definition of Level 5 paediatric medical services. Paediatricians in the Greater Western Planning process estimated an optimal volume of at least of 4,500 episodes of care per annum. Under the APPI 2000 forecast growth, Macarthur will be the first Sector to reach this volume by 2006, but there is a current need to improve overnight access to medical care for children in SWSAHS hospitals. Implementation of the Macarthur Strategy would allow for some returned flows from within SWSAHS and some returned outflows and thus could potentially achieve this volume earlier than 2006,
- The Fairfield Paediatric Outreach model as (outlined in appendix 5) has not been formally evaluated, but there is agreement that it offers an appropriate means of reducing the time children spend in hospital and providing a better quality Emergency Service for children. There is some evidence that the service is reducing length of stay, but as yet there is no clear evidence that it is reducing readmission rate over time.
- All services provided within SWSAHS Hospitals need to operate within the defined role delineation, according to agreed standards and with appropriately competent staff to ensure the safety and quality of care. The implications of the role delineation guidelines should be reviewed by all SWSAHS hospitals.
- Opportunities for networking of low volume or specialist services should be identified, particular between Wingecarribee and Macarthur, and between Fairfield, Bankstown and Liverpool. Networks at the simplest level may define the agreed standards and training required for service provision within the role delineation, at the more complex level, they may develop protocols for cross admissions and hub and spoke networks for particular services,
- Cross appointment of VMOs between networked hospitals may assist in the implementation of networked services,
- Service planning needs to ensure appropriate training for medical and nursing staff to develop and maintain the appropriate skills to meet the requirements of best practice in respect to role delineation and patient safety. Hospital and outreach staff need to be appropriately accredited as paediatrically competent.

### **6.7.2 Acceptability:**

- Access to Children's services within a district hospital is of major concern to the local community. The planned closure of the Children's ward at Fairfield Hospital did not proceed in 1995 as a result of VMO and community concern. Fairfield Health Service has worked closely with its VMOs to address many concerns regarding the paediatric inpatient and emergency services. After approximately 2 years implementation of their new emergency and nursing outreach model, VMOs and families indicate satisfaction with the service,

- Community and VMO issues need to be considered in any proposed plan.

### **6.7.3 Infrastructure:**

- Liverpool Hospital currently has only 25 beds and will not have sufficient beds to provide a service for the projected growth in demand for service by 2006. The implementation of the Macarthur Strategy would free up some bed space at Liverpool. There is a need for between 8 and 15 additional beds to provide for the forecast demand by APPI 2000 and the potential for returned flows under the Greater Western Paediatric Network proposal. The draft development control plan for the Liverpool Hospital site would require construction of a new facility. This would be designed to include the full range of paediatric services.
- The Emergency Departments in Fairfield and Bowral Hospitals need refurbishment to provide for a specific paediatric / child friendly area,
- The functionality of the paediatric wards at Fairfield and Bowral needs to be reviewed and recommendations for refurbishment and / or relocation needs to be made.

### **6.7.4 Cost effective and practical service improvements:**

- Emergency Departments are a crucial point of access to the Hospitals for children and their families. In SWSAHS, children under 15 years of age make up one quarter of all Emergency Department visits. General Practitioners are key partners in the health improvement of children. There is a need to negotiate strong and appropriate partnerships between the Ambulatory Paediatric Services, Emergency Departments and General Practitioners. The Area currently funds paediatric ambulatory and outreach services at Fairfield, Liverpool, Macarthur and Wingecarribee at a cost of approximately \$1,257,000. This service provides an essential link between this front door and the community based partners. Expansion of this program across the Area based on the Fairfield service would cost an additional \$958,500. Details are provided in appendix 7. This is based on a staff profile of 5.4 FTE (2 medical, 2.4 nursing and 1 clerical) for most services except in the case of Wingecarribee it would be 1.5 nursing FTE and provision of sessional medical hours,
- Service planning needs to ensure appropriate medical and nursing infrastructure within the Emergency Department, paediatric ward, maternity and neonatal setting of SWSAHS hospitals. This may include greater use of appropriately skilled Career Medical Officers if it is not possible attract paediatric registrars to SWSAHS,
- Service planning needs to include the flexibility to manage returned flows should the Department of Health recommend this.

### **6.7.5 Management of potential returned flows:**

- People bypass SWSAHS hospitals for day only and non tertiary services that could be delivered locally. The Specialist Children's Hospitals provide 80% of the service for these outflows, which increases the cost to the health system as a whole. While services such as chemotherapy are more appropriately provided by a specialist hospital, many services could be provided within SWSAHS hospitals if the funding was made available.

## 6.7.6 Resolve the Roles of Bankstown and Fairfield Hospitals

- Bankstown and Fairfield Hospitals currently have a lower volume of paediatric services than Liverpool and Campbelltown Hospitals. The Greater Western Metropolitan Planning and Feasibility Proposal proposed that these hospitals should provide ambulatory based medical services operating at level 2/3 with surgical and overnight services provided by either Canterbury, Liverpool or CHW.
- Initial discussions with VMOs appointed to these hospitals have identified a range of difficulties in implementing these proposed changes to inpatient services.
- There is strong VMO support for the need for ambulatory paediatric services to be provided within all Sector Health services.
- There is agreement that the role of Paediatric inpatient services within Fairfield Hospital needs to be considered within the context of broader planning for the hospital.
- The Greater Eastern Paediatric Network has identified the need to consult more closely with VMOs appointed to Bankstown and Canterbury Hospitals to identify opportunities for cooperation and service development.

These issues are to be addressed over 2002 / 2003.

## 6.8 Principles

The model of service delivery should be underpinned by principles:

1. The inpatient paediatric services in SWSAHS should be effectively networked with the Specialist Children's Hospitals. Local units must be well linked to units with greater specialty and back up resources to ensure safety and quality of care,
2. Hospitalisation of children should be avoided if at all possible,
3. When in hospital the NSW Guidelines for the Hospitalisation of Children and Role Delineation should be adhered to,
4. Facilities where children receive services in SWSAHS hospitals will be designed to facilitate a well functioning service and be child and parent friendly and age appropriate,
5. Where possible, children should receive care close to home,
6. When children are admitted to hospital, the length of stay should be minimised and clear discharge pathways identified with necessary home and community support,
7. The skills of our child health staff should be used collaboratively across settings to optimise care,
8. Cross appointment of VMOs to related units would facilitate networking and continuity of care for children managed by those units,

9. Support for children and families in the community by general practitioners and medical specialists plus or minus community health services, is an integral part of the ongoing management of children, and
10. Prevention and early intervention should be the keystones of management of children

## **6.9 Proposed Model of Care**

A model of care has been developed to address the problems and challenges identified for SWSAHS paediatric inpatient services. The model will encompass the following elements:

1. Effective triage of children presenting in Emergency Departments in an area suited to their special needs,
2. A direct access point for GPs or families with concerns about their child's condition,
3. Prompt management of their presenting complaint and planning for their immediate and ongoing needs,
4. Agreed treatment guidelines for common conditions across all sites in SWSAHS and consistent with those in use across the specialist paediatric networks including the CHW and the Greater Western Network and SCH and the Greater Eastern Network,
5. Defined Ambulatory Teams with relevant skills and of sufficient size to cover the hours of operation with adequate and safe levels of medical and nursing cover,
6. Clear pathways for referral, management and discharge will be developed by Sectors in consultation with VMOs and General Practitioners and reflecting the community needs and sector resources,
7. Access to allied health services on an outpatient basis and
8. Access to specialist outreach paediatric clinical services following networking with the Specialist Children's Hospitals.

The model of care will be supported by

1. Access to appropriate training for medical, specialist and generalist nurses and allied health services and will be linked to the networking with the Specialist Children's Hospitals
2. Appropriate physical facilities will be developed according to need and consistent with the elements of the model

## **6.10 Implications of the Greater Western Paediatric Inpatient Network Proposal for the SWSAHS Model of Care**

Much of the Greater Western Child Health Network relates to improving the quality of services, through providing increased ambulatory services or improved opportunities for training, communication and rotation of staff across the Network. One aspect of the

proposal related to returning inpatient flows to the Area Health Services. The Department of Health's Guidelines for Networking of Paediatric Services noted this aspect of the proposal but focused on the need to improve networks with rural services. If this aspect of the proposal was recommended as the agreed model for Metropolitan service development, a number of issues would need to be considered:

1. VMOs and communities would need to be consulted on the development of an alternative to inpatient admission that would be acceptable to them. A paediatric ambulatory and outreach service will need to be established in each sector prior to implementing any greater change in role,
2. Ambulatory Wards / holding areas would need to be established in each of the hospitals with appropriate operating times,
3. An agreed model of care for these ambulatory services would need to be developed. The feasibility of co-location with the Emergency Departments would need to be reviewed.
4. Agreed referral protocols would need to be established between Level 2/3 sites and their ambulatory wards to Level 4/5 sites and their inpatient and ambulatory wards,
5. A transport system would need to be established to enable referral to Level 4/5 sites or to Children's Hospitals,
6. Bankstown and Fairfield Hospitals are not currently set up to provide day only units under an ambulatory model where children are held for observation, but not admitted. This would require capital funding for refurbishment / redesign. The location of the Children's ward and the location, size and design of the Emergency Department in the Fairfield Hospital do not provide easy design solutions to the establishment of a holding ward. The design of Bankstown Hospital provides reasonable solutions to this development but would require some refurbishment and redesign.
7. The feasibility of diverting half of Bankstown Hospital's overnight and surgical flows to Canterbury hospital or of amalgamating Canterbury and Bankstown at one or other site would need to be reviewed.
8. The implementation of the Greater West proposal would have different implications for capital funding and built infrastructure than the requirements for ongoing services provision, particularly for Liverpool and Fairfield.
9. The impact of the Greater West proposal on the training needs and the implications for attraction of staff will need to be reviewed.

## **6.11 Action Plan**

An action plan is provided to meet the objectives of this plan and to address the challenges identified in the section "Problems and Challenges to be addressed by the Plan".

APPI 2000 estimates an increase in demand by its residents for services within SWSAHS of 1334 Episodes of Care from 1998 to 2006. The Area Enhancement process has

provided additional funding for both adult and paediatric inpatient services for the two year period to June 2003 through medical and surgical enhancements across all Sectors. These funds will support the development of paediatric inpatient services across the Area. Macarthur Sector was allocated \$500,000 to open 2 ambulatory care beds and provide an outreach nursing service. \$75,000 was provided to Wingecarribee for paediatric outpatient services and \$200,000 was provided for a Senior Medical Specialist based at Liverpool Hospital to provide PANOC (Child Protection - Physical Abuse and Neglect of Children) services for the Area.

Liverpool Health Service was funded for \$347,000 per year for 2001/2002 and 2002/2003 through the Greater Western Child Health Network to expand their ambulatory and outreach services. The Plan identifies an additional cost of \$981,500 to expand the paediatric ambulatory and outreach services within SWSAHS. A program of staged implementation over four to six years is proposed.

A number of reviews of networking of services could be used to identify Area wide priorities for inpatient service enhancements. The needs for staged implementation of all human resource infrastructure requirements including paediatric surgeons, allied health staff and other relevant staffing or VMO appointments should be considered in this process.

## **CONCLUSION**

The main outcomes of the SWSAHS Inpatient Paediatric Plan are as follows:

- Essentially there is no change in the current role or volume of existing paediatric inpatient units recommended in this plan, however specific enhancement of services is proposed through the expansion of outreach and ambulatory models of care;
- There will be two larger paediatric inpatient units at Liverpool and Campbelltown. Campbelltown has been completed as part of the Macarthur Strategy and planning for the stage 2 of Liverpool has allowed for a 40 bed unit;
- Bankstown and Fairfield will be smaller units. Even if there is a return of activity proposed as part of the Greater West Networking proposal these services would not achieve a critical mass capable of sustaining 24 hour registrar cover. The Area will need to continue to explore a variety of options to address issues of quality and safety particularly out of hours. The relationship between Canterbury and Bankstown services will be considered;
- Improvements in management of children in the emergency department are proposed, through partnerships with between the paediatric ambulatory services and the emergency departments; and
- Any change to surgical activity will be negotiated through the budget holding process. While volume may increase as part of these negotiations, it is not proposed to increase the complexity of surgery performed with this continuing to be provided at the specialist children's hospitals.

## Action Plan

Objective	Action	Performance Indicator	Timeframe	Responsibility	Priority
1 Improve the safety and quality of inpatient children's care in SWSAHS hospitals.	1.1 Implement the enhanced paediatric ambulatory service in Liverpool and Macarthur.	Staff recruited for ambulatory and outreach services	March 02	GMs	High
	1.2 Work with ED Clinical Advisory Committee and the 3 Child Health Networks to develop / comment on common treatment guidelines across all sites in SWSAHS	Consultation implemented and Guidelines developed	Ongoing as developed	DMCS/ Area Paediatrician s Group	High
	1.3 Implement common treatment guidelines across all sites in SWSAHS acute management	Guidelines adopted and implemented	As released	GMs	High
	1.4 Work with GWSNA to conduct a nursing training needs analysis and develop appropriate nursing training packages with the Greater West network	Needs analysis conducted and training packages developed.	June 2002	DN&CS GMs	Medium
	1.5 Develop an Area wide training strategy.	Training strategy developed.	June 2002	DN&CS	Medium
	1.6 Implement nursing training strategy throughout sectors	Training strategies implemented	Annually	GMs	Medium
	1.7 Assess the need for Specialist Children's Hospitals to provide specialist outreach clinics	Agreement for clinics formalised	June 02	DMCS / DCP	High
	1.8 Implement specialist outreach clinics within agreed SWSAHS hospitals.	Specialist outreach clinics implement.	December 02	GMs	High
	1.9 Assess the need for cross appointments between SWSAHS Hospitals.	Needs assessment completed	June 02	DMCS / GMs	High

Objective	Action	Performance Indicator	Timeframe	Responsibility	Priority
1 Improve the safety and quality of inpatient children's care in SWSAHS hospitals. (cont)	1.10 Audit paediatric inpatient services in light of the Role Delineation and the Guidelines for Hospitalisation of Children	Audit conducted	March 02	GMs DDP	High
	1.11 Establish Paediatric Surgical networks across SWSAHS.	Networks established.	December 01	Medical Director Division of Surgery	High
	1.12 Identify paediatric network priorities, strategies and infrastructure requirements. Including: 1. Macarthur - Wingecarribee Network 2. Adolescent medical services network for SWSAHS.	Networks identified	June 02	GM Mac, Wing  DMCS / DCP Area Paediatricians Group	High
2. Establish an appropriate model for child health service delivery.  This model would reduce the emphasis on inpatient paediatric care as the marker of excellence and develop a child health improvement model.	2.1 Endorse the definition an area wide paediatric ambulatory and outreach services model including partnerships between emergency services and paediatric ambulatory services.	Definition and partnerships agreed	June 2002	Ambulatory Care Committee	High
	2.2 Endorse the establishment of standardised outcomes measures	Standardise Outcomes Measures	March 02	Ambulatory Care Committee Area Paediatric Advisor & Child Health Advisory Committee	High
	2.3 Monitor and evaluate SWSAHS paediatric ambulatory and outreach services and models.	Ongoing reporting	6monthly reporting from March 02 December 01	DDP CHAC	High
	2.4 Review and update the Health of Children in South Western Sydney – Strategic Plan for Improving Health including <ul style="list-style-type: none"> <li>• a model for child health improvement</li> <li>• identification of opportunities for partnerships and population health approaches to address the impact of the social determinants of health.</li> <li>• Consultation with key stakeholders</li> </ul>	Review of plan complete  Updated plan complete	June 02	DCP DDP	High

Objective	Action	Performance Indicator	Timeframe	Responsibility	Priority
3. Ensure service improvements are cost effective, cost efficient and practical.	3.1 Include expansion of paediatric ward at Liverpool Hospital in the Master planning for the Liverpool site.	Master plan prepared.	June 01	DDP	High
	3.2 Review the ability of the SWSAHS Emergency Departments to meet the requirements of the Guidelines for Hospitalisation of Children and to provide a child friendly environment.	Review prepared	March 02	DDP	High
	3.3 Work with the Greater Eastern Child Health Network to identify opportunities for collaboration between Bankstown and Canterbury Paediatric Services	Agreement reached regarding appropriate collaboration	June 03	DDP	Medium
	3.4 Work with the CHW and SCH to negotiate an appropriate level of returned flows within the context of budget holding	Agreement reached	June 03	DDP	High
	3.5 Review the role of paediatric services within Fairfield Hospital in relation to broader role for Fairfield.	Review complete	June 03	DDP	High
	3.6 Review use of career medical officers with experience in paediatrics to ensure adequate 24 hour medical cover	Review complete and future strategy recommended	December 02	DM&CS Area Paediatricians Group	Medium
	3.7 Review the Greater Western Child Health hub and spoke proposal for inpatient services and recommend options for service provision	Review complete and future strategy recommended	December 02	DM&CS Area Paediatricians Group	Medium
	3.8 Review implementation of nursing training strategy throughout sectors	Review complete	June 04	DN&CS	High
	3.9 Review Implementation of specialist outreach clinics	Review complete	December 04	DM&CS	High
	3.10 Review the changed services arrangements and flows between Macarthur and Liverpool and develop a service agreement	Review and agreement complete	June 04	GMs Liverpool and Macarthur	Medium

## **Guidelines for the Hospitalisation of Children – Revised July 1998**

### **Aims and Objectives**

1. To provide a safe and effective inpatient paediatric service for children
2. To concentrate those paediatric services requiring special facilities or skills in hospitals which can provide those services most effectively and efficiently, offering a network of support for hospitals in rural and remote areas.
3. To recognise the special requirements of children in ambulatory care services (such as emergency, X-ray and pathology), operating theatres and allied health services.
4. To recognise the special psychological needs of children in hospital and encourage the carer to participate in the child's care at all times, especially in the provision of emotional support during times of high stress.
5. The support of a carer is very important. In the case of a planned admission, encouragement and assistance should be given for this support person to accompany the child to hospital.

### **The Start of Good Health. Improving the Health of Children in NSW 1999**

The Four goals include:

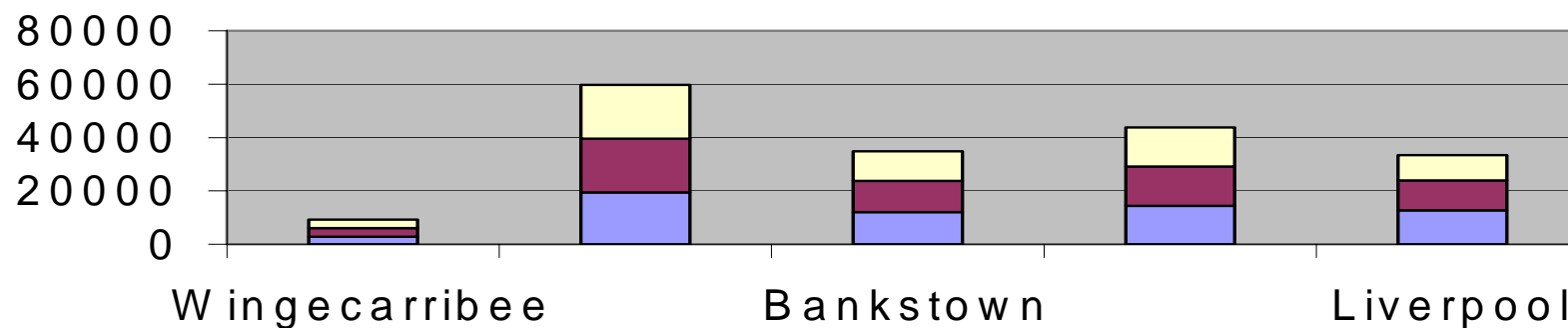
- to improve the health and wellbeing of children;
- to improve the accessibility and appropriateness of health services for children;
- to improve the quality of health services provided to the children;
- to promote partnerships within the health system and with other public and community based agencies which impact on the health of children.

### **Health Goals and Targets for Australian Children and Youth. Project Report.**

The priority health issues related to the Goals and Targets include:

- Reduce the frequency of preventable mortality injury, Aboriginal children's health; Sudden infant syndrome;
- Reduce the impact of disability birth defects, low birth weight and pre-maturity; asthma; childhood disability;
- Reduce the incidence of vaccine-preventable diseases immunisation;
- Reduce the impact of conditions occurring in adulthood which have their early manifestation in childhood: nutrition and physical; sun protection; oral health;
- Enhance family and social functioning supporting parents / carers, mental health; child abuse and neglect.

### Estimated Paediatric Population by Sector and Age - 1998



	Wingecarribee	Macarthur	Bankstown	Fairfield	Liverpool
10 - 14	3161	20137	11221	14690	9531
5 - 9	3219	20131	11695	14667	11140
0 - 4	2839	19517	11998	14427	12770

Change in Paediatric Inpatient Services between 1995/96 and 1998/99					
Year	Flow Type	Day Only	Non Tertiary	Tertiary	Total
<b>1995 / 96</b>	Demand	5990	11376	687	18053
	Outflow	3173	3131	552	6856
	Capture	2817	8245	135	11197
	Inflow	261	883	12	1156
	Supply	3078	9128	147	12353
	Private	1601	938	17	2556
	<b>Self Sufficiency</b>	<b>47.03%</b>	<b>72.48%</b>	<b>19.65%</b>	<b>62.02%</b>
<b>1996 / 97</b>	Demand	6159	10727	689	17575
	Outflow	3479	3031	574	7084
	Capture	2680	7696	115	10491
	Inflow	295	840	13	1148
	Supply	2975	8536	128	11639
	Private	1516	912	12	2440
	<b>Self Sufficiency</b>	<b>43.51%</b>	<b>71.74%</b>	<b>16.69%</b>	<b>59.69%</b>
<b>1997 / 98</b>	Demand	6171	11212	610	17993
	Outflow	3445	3063	501	7009
	Capture	2726	8149	109	10984
	Inflow	328	774	10	1112
	Supply	3054	8923	119	12096
	Private	1397	901	25	2323
	<b>Self Sufficiency</b>	<b>44.17%</b>	<b>72.68%</b>	<b>17.87%</b>	<b>61.05%</b>
<b>1998 / 99</b>	Demand	6236	11744	661	18641
	Outflow	3386	3250	536	7172
	Capture	2850	8494	125	11469
	Inflow	309	724	7	1040
	Supply	3159	9218	132	12509
	Private	1397	930	17	2344
	<b>Self Sufficiency</b>	<b>45.70%</b>	<b>72.33%</b>	<b>18.91%</b>	<b>61.53%</b>

Paediatric Admissions from Emergency Department to the Hospital							
Hospital	Bowral	Campbelltown	Camden	Bankstown	Liverpool	Fairfield	SWSAHS
<b>Time Period of Triage 1 &amp; 2 Admissions</b>							
<b>8 am to 5.59 pm</b>	22	153	13	90	246	120	644
Admissions as a percentage of presentations during this time period	78.6%	64.0%	43.3%	79.6%	65.3%	77.4%	68.4%
<b>6pm to 9.59 pm</b>	7	67	8	40	111	71	304
Admissions as a percentage of presentations during this time period	87.5%	71.3%	40.0%	90.9%	68.5%	68.9%	70.5%
<b>10pm to 7.59am</b>	5	56	8	57	92	48	266
Admissions as a percentage of presentations during this time period	67.5%	50.0%	71.8%	44.4%	80.3%	61.3%	71.6%
<b>Total Triage 1 &amp; 2</b>	<b>34</b>	<b>276</b>	<b>29</b>	<b>187</b>	<b>449</b>	<b>239</b>	<b>1214</b>
Admissions as a percentage of presentations	73.9%	67.2%	42.6%	82.0%	65.2%	73.5%	68.7%
<b>Night admissions as a percentage of total Triage 1 &amp; 2 admissions</b>	<b>14.7%</b>	<b>20.3%</b>	<b>27.6%</b>	<b>30.5%</b>	<b>20.5%</b>	<b>20.1%</b>	<b>21.9%</b>
<b>Time Period of Triage 3,4 &amp; 5 Admissions</b>							
<b>8 am to 5.59 pm</b>	176	1468	68	846	1103	631	4292
Admissions as a percentage of presentations during this time period	10.5%	29.3%	5.1%	29.9%	29.5%	27.4%	25.4%
<b>6pm to 9.59 pm</b>	69	697	31	410	608	348	2163
Admissions as a percentage of presentations during this time period	8.7%	24.0%	4.9%	23.3%	25.2%	22.4%	21.5%
<b>10pm to 7.59am</b>	47	435	26	472	421	294	1695
Admissions as a percentage of presentations during this time period	10.5%	15.7%	5.9%	25.4%	17.4%	16.7%	17.5%
<b>Total Triage 3, 4 &amp; 5</b>	<b>292</b>	<b>2600</b>	<b>125</b>	<b>1728</b>	<b>2132</b>	<b>1273</b>	<b>8150</b>
Admissions as a percentage of presentations	10.0%	24.3%	5.2%	26.8%	24.9%	22.7%	22.2%
<b>Night admissions as a percentage of total Triage 3, 4 &amp; 5 admissions</b>	<b>16.1%</b>	<b>16.7%</b>	<b>20.8%</b>	<b>27.3%</b>	<b>19.7%</b>	<b>23.1%</b>	<b>20.8%</b>
Total Number Paediatric presentations to ED	2,960	11,114	2,471	6,678	9,256	5,943	38,422
Total Number admitted to Hospital from ED	326	2876	154	1915	2581	1512	9364
<b>Total who present and are admitted</b>	<b>11.0%</b>	<b>25.9%</b>	<b>6.2%</b>	<b>28.7%</b>	<b>27.9%</b>	<b>25.4%</b>	<b>24.4%</b>
<b>% of Night admissions (10pm to 7.59am) to Total admissions</b>	<b>16.0%</b>	<b>17.1%</b>	<b>22.1%</b>	<b>27.6%</b>	<b>19.9%</b>	<b>22.6%</b>	<b>20.9%</b>

**AMBULATORY PAEDIATRIC SERVICE MODEL – DRAFT DISCUSSION PAPER**

The establishment of an ambulatory paediatric service in each of the South Western Sydney Area Health Service sectors is proposed to enhance current paediatric services.

The aim of an ambulatory paediatric service is to promote safe paediatric practice, and address accessibility to the local population. Similar services are to be provided across each sector so that equity is available to all residents of South Western Sydney.

The ambulatory paediatric model will be able to enhance paediatric services through 4 main areas:

- Emergency Department
- Community Outreach
- Community Child Health
- Population Health Activity

Staffing for ambulatory paediatric service at a minimum to include:

- Staff Specialist Paediatrician, with Emergency Department / Community Roles – 1.0 FTE
- Paediatric Outreach services provided by Paediatric Registered Nurses, ideally to provide a 7-day a week service. This requires a minimum 2½ to 3 full-time RN's. – 3.0 FTE ( NB costings prepared based on 2.4 FTE see appendix 7)
- Community Paediatric Registrar – 1.0 FTE
- Clerical – 1.0 FTE

Additional Staff to consider in an ambulatory paediatric service or for enhancements to provide effective networking include:

- Social work / counseling / psychologist / additional allied health therapist.

**Emergency Department Services:**

It is proposed that a Staff Specialist Paediatrician provide a consultative service to the Emergency Department. The Staff Specialist is able to assist with:

- Paediatric policies, procedures and protocol.
- Supervision of Junior Medical Officers for paediatric cases
- Paediatric resource for the Emergency Department
- Assistance with paediatric resuscitations

Paediatric presentations account for up to 40% of all presentations to Emergency Departments across South Western Sydney. It is a core part of the Emergency Department activities, and a Paediatric presence in each Emergency Department is required.

## **Community Outreach:**

There is a worldwide trend to provide ambulatory care programs. South Western Sydney have the opportunity to provide community/outreach programs to service children in our community. Many paediatric illnesses are of short duration and can be managed in the home if support is provided to parents. Provision for nurses to visit the home to provide various assessments including respiratory assessments (e.g. asthma, croup, bronchiolitis) for children who do not require hospitalisation, fluid assessments for gastroenteritis patients, assistance with children with chronic medical needs, regular burn and wound dressings, or in-house community care. It will also allow children to be cared for in the security of their own homes, with familiar surroundings and family members. A 7-day week service with extended weekday hours is recommended.

## **Community Child Health:**

Each sector has early childhood and parenting services/early childhood nurses/allied health therapists/child and family teams who deal with children who have growth development and behavioural problems. These children come to the attention of health service staff in the early years or soon into their early school year. Provision of community and outpatient services that are able to support and work with existing health professionals to provide a multi-disciplinary approach to the child's growth/development or behavioural problem is recommended. These services can be provided by a community based Paediatrician and supported by community paediatric Registrar position.

Part of a Staff Specialist Paediatrician's work will involve liaison with the local Department of Community Services in providing support. This is increasingly important, given the new ENACT legislation that will be implemented in 2000.

Medical reviews, reports, and case management in association with Department of Community Services are to be supported by the Ambulatory Paediatric Service. In addition, a Community Paediatric Outpatient's will be able to provide support to professionals in the Health Service as they implement the Families First package across South Western Sydney.

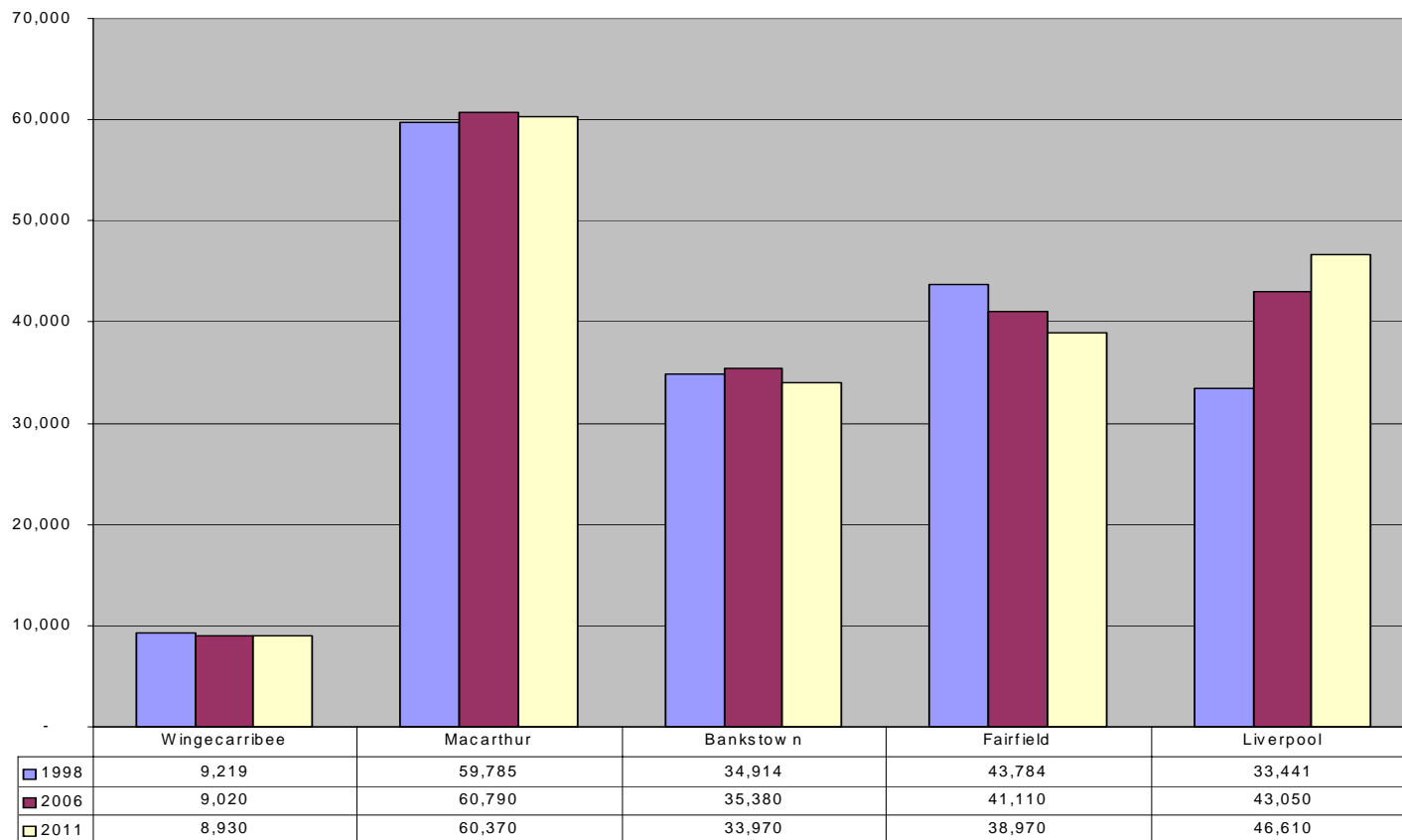
## **Population Health:**

The Ambulatory Paediatric Service will be actively involved in the health of the community and in facilitating improved health outcomes in young children. It is important that appropriate health promotion activities, population health activities are undertaken. Involvement with local initiatives, local committees, area committees and research activities throughout the area that look to improve children's health are an important part of an Ambulatory Paediatric Service. Immunisation and child protection are two important areas that fall into this field.

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Change in SWSAHS Paediatric Population Projections from 1998 to 2011



## APPENDIX 7

Proposed Sector based service Paediatric ED & Outreach Service						
	Staff	FTE	Oncosts	Base rate	actual x1	Actual x FTE
Medical	Registrar Y4	1	10%	\$68,144	\$74,959	\$74,959
	Staff Specialist Y5	1	10%	\$133,639	\$147,003	\$147,003
Nursing	CNC	1	10%	\$55,873	\$61,460	\$61,460
	RN Y6	1.4	29.7%	\$39,880	\$51,724	\$72,414
Clerical	Clerk L3	1	10%	\$32,241	\$35,465	\$35,465
Total Salaries		5.4		\$329,777	\$370,611	\$391,301
G&S & RMR			30%			\$117,390
<b>Total Cost</b>						<b>\$508,691</b>

*Note: The staff profile for the Wingecarribee service includes 1 CNC, .5 RN and sessional medical fees at a cost of \$175,500.*

Estimated additional cost to SWSAHS of expanded Paediatric Ambulatory and Outreach services			
Sector	Proposed cost	Current budget estimate	Additional funds required
Liverpool	\$510,000	\$457,000 <sup>5</sup>	\$53,000
Bankstown	\$510,000		\$510,000
Fairfield	\$510,000	\$398,000	\$112,000
Macarthur	\$510,000	\$327,000	\$183,000
Wingecarribee	\$175,500	\$75,000	\$100,000
<b>Total Cost</b>	<b>\$2,215,500</b>	<b>\$1,257,000</b>	<b>\$958,500</b>

*Note: The Emergency Departments at Campbelltown and Fairfield Hospitals each currently employ a staff specialist with paediatric experience. These positions are not included in this calculation as they are part of the Emergency Department staff profile and not available to provide the breadth of the role outlined in Appendix 5.*

<sup>5</sup> Liverpool Health Service has been funded \$347,000 per year for 2001/2002 and 2002/2003 under the Paediatric Networking program proposed by the Greater Western Child Health Network. This will provide medical and nursing services.

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