CARDIOTHORACIC SURGERY SERVICES

CHAPTER 8

Liverpool Hospital provides the cardiothoracic service for SWSAHS. The cardiac surgical component of the cardiothoracic surgical unit treats the same cardiac diseases that the Cardiology unit treats. Cardiac Failure is the commonest disease utilising hospital beds.

SWSAHS captures approximately 67% of the total resident demand for public sector cardiothoracic services in SWS. In 2002/03, SWSAHS provided a total of 540 episodes of care (6,157 beddays). The majority of outflows were to Royal Prince Alfred Hospital. 70% of Bankstown residents undergoing cardiothoracic surgery during this period did so in hospitals outside of SWSAHS.

The demand for Cardiothoracic Surgery is expected to grow by 23.6% to 2006 and by an additional 11.5% to 2011. There are no private hospital cardiothoracic surgical services within SWS. Currently, all patients receiving treatment in private hospitals (25%) are managed outside SWS.

In 2006, at 85% occupancy and assuming no change in flow patterns, it is projected that there will be a need for approximately 21.3 cardiothoracic surgery beds for adults together with an increase in ICU / HDU beds for post surgical management. The service demand is predicted to grow as a result of increased emergency angioplasty services, the development of Electrophysiology Services (EPS) and biventricular pacing for heart failure.

Current Services Provision

Cardiothoracic surgery is provided only at Liverpool Hospital. The service has strong links with cardiology, particularly in the treatment of coronary heart disease. The service is established with two dedicated operating theatres, two intensive care beds, two high dependency beds, 20 “step-down” and general ward beds and three surgeons, enabling approximately 500 cases per year.

Cardiac surgery: valve, coronary surgery, and other cardiac surgery such as pacemaker implantations is performed 5 days per week.

Thoracic surgery: one halfday theatre list every second week. The thoracic load is growing with increasing numbers of decortications etc.

The development of a cardiology/cardiac surgery electrophysiology team for placement of pacemakers and defibrillators at Liverpool and Bankstown hospitals would increase access for pacemaker patients to urgent and semi-urgent implantations.

Preoperative and discharge planning coordination is essential to the operation of a cardiothoracic surgery service

In 2002/03, there were 514 separations; average LOS was 11.6 days (11.7 days excluding day only). At 95% occupancy this is equivalent to 17.3 beds.

Research and Teaching

Education of registrar, nursing staff and medical students and patients is ongoing in addition to clinical research.

RECOMMENDATIONS

- Cardiothoracic surgery services be formally structured on an Area-wide basis.
- Cardiothoracic surgeons be cross-appointed to Liverpool and Bankstown.
- Liverpool Hospital continue to develop Cardiothoracic surgery (open heart surgery)
- Elective thoracic surgery be performed at Liverpool and Bankstown Hospitals.
- A pacemaker and defibrillator service be developed across Liverpool and Bankstown Hospitals.
- Coordination of care and the discharge processes be improved with the appointment of an Area CNC.
- A single data collection system for Cardiology and Cardiac Surgery be developed across the Area. This data collection be implemented to track performance and outcomes.

CARDIOLOGY SERVICES

CHAPTER 9

All hospitals in SWSAHS care for patients with cardiac conditions. Cardiology Services include inpatient care, non-invasive investigations (echo, stress testing, holter monitors), invasive investigations (angiography, EPS), invasive treatments (percutaneous coronary intervention, coronary bypass surgery, pacemakers), and cardiac rehabilitation programs.

Cardiac Rehabilitation Services across the Area are vital to maintaining health and improving patient outcomes.

SWSAHS is 86% self-sufficient in the provision of non-invasive cardiology services, and 72% self-sufficient in the provision of interventional cardiology. The private sector captures only 5% of total resident demand for non-interventional cardiology. By contrast, private sector hospitals capture 32% of total resident demand for interventional cardiology.

In 2002/03, SWSAHS delivered a total of 6,813 episodes of care in non-interventional cardiology, and 1,954 episodes of care in interventional cardiology. These episodes of care accounted for a total of 26,721 and 9,941 beddays respectively. This is equivalent to 106 beds for interventional and non-interventional Cardiology at 95% occupancy. (118 beds at 85% occupancy.)

Most outflows for non-interventional cardiology were to Auburn and Westmead Hospitals. The majority of outflows for interventional cardiology were to Westmead, St. Vincent's and Royal Prince Alfred Hospitals.

The demand for non-interventional cardiology services is expected to increase by 11.4% to 2006 and by a further 14.5% to 2011. The demand for interventional cardiology is expected to increase by 17.4% to 2006 and by and additional 15.6% to 2011.

In 2006, at 85% occupancy and assuming no change in flow patterns, it is projected that there will be a need for approximately 88.4 cardiology beds and 31.4 cardiology interventional beds for adults.

Current Service Provision

Comprehensive non-invasive services are provided at Bankstown and Liverpool, whilst limited services are provided at Campbelltown Fairfield and Bowral. Liverpool and Bankstown Hospitals have a formal Cardiology roster with patients in other SWSAHS hospitals cared for predominantly by General Physicians. One general physician in Bowral is a fully trained Cardiologist, whilst Fairfield and Campbelltown have access to consultative cardiologists.

Increased numbers of cardiologists and trained nurses will provide opportunities for expanded specialist care at Fairfield and Macarthur, improved access to Liverpool for invasive cardiology together with 24 hour services for urgent Percutaneous Coronary Intervention [PCI].

A Director of Heart failure services will allow all sectors to have comprehensive cardiac rehabilitation and heart failure services to meet the outcomes targets of the NSW Clinical Service framework for Heart Failure.

Bankstown

Bankstown Hospital offers a level 5 gcardiac services, which includes all cardiac management and diagnostic support apart from catheterisation and cardiac surgery. Comprehensive cardiac diagnostic services operate including tilt table, signal average ECGs, Dobutamine, cardioversions, 24 hour ambulatory blood pressure, Holter monitoring, echo cardiography, transoesophageal echocardiography and stress testing.

Bankstown operates 6 CCU and 24 step-down beds, 8 of which are telemetry beds.

Liverpool

Liverpool Hospital provides a cardiology service at role delineation of level 6 and cardiothoracic surgery at role delineation of level 6. The service provides diagnostic and interventional services including transthoracic echocardiography, transoesophageal echocardiography, stress echocardiography, stress testing, Holter monitoring, permanent pacemaker implantation and follow-up, cardiac catheterization and angiography and percutaneous coronary interventions, including intra-vascular ultrasound.

Liverpool has an 8 bed acute Coronary Care Unit and a 20 beds subacute step-down unit. There are 10 inpatient cardiology ward beds.

Fairfield

Fairfield combined HDU/CCU has 10 beds. Cardiac patients usually occupy 7 of these beds.

Campbelltown

Campbelltown has 6 CCU beds located within a 24hr Acute Medical Unit.

Camden

There are currently no HDU beds in use at Camden Hospital.

Bowral

At Bowral the majority of the 8 HDU/CCU beds are occupied by cardiac patients.

Outpatients

Bankstown performs transthoracic echocardiography (TTE), transoesophageal echocardiography (TOE), exercise stress test (EST), Holters, ambulatory BP and tilt testing. Liverpool does outpatient angiography, TOE, Holter monitors, EST, TTE, stress echos, DC cardioversions, Pacemaker Clinic and outpatient ECGs. Campbelltown has TTE and EST capability, while Fairfield and Bowral do ESTs.

Comprehensive outpatient cardiac rehabilitation programmes are provided to cardiac patients with primary or secondary prevention CHD, angina, myocardial infarction, pre and post cardiac surgery and angioplasty. These include exercise and multidisciplinary educational programmes. Supervised exercise classes and/or home visits to patients who cannot attend the outpatient services are also offered.

Cardiac Rehabilitation Services across the Area have developed Cardiac Rehabilitation Continuum of Care Guidelines. Phase 1 of the Guidelines includes rehabilitation for inpatients, phase 2 includes the provision of 6-8 week multidisciplinary educational programs for clients post discharge and phase 3 includes the ongoing maintenance of health for cardiac patients. In addition, a Cardiac Shared Care Program has been established with the Fairfield Division of General Practice.

High Cost Equipment Needs

A third cardiac catheter laboratory will enable increased provision of Pacemakers, Peripheral intervention and electrophysiology services to improve patient flow across SWSAHS. This will require capital works at Liverpool.

Research and Teaching

As the service develops there will be additional integrated focus on professional development and research. Individuals within the cardiac services have made great strides in research over the last few years, taking part in multi-centre trials and developing internal research. Further fellowships will be developed in interventional and non-invasive cardiology to allow the development of postgraduate "students". Closer academic links to the University and a more robust research culture will also be developed.

RECOMMENDATIONS

- An Area Cardiac service be developed with locations at Bankstown, Fairfield, Liverpool, Campbelltown and Bowral.
- Liverpool be the centre for interventional cardiology and electrophysiology services. A third cardiac catheter laboratory and a 24 hour / seven days per week Primary Coronary Intervention Service be established.
- Enhanced non-invasive services (such as stress testing) be provided at Fairfield, Campbelltown, and Bowral.
- Liverpool, Fairfield and Campbelltown Hospitals expand cardiologist presence.
- A cardiac laboratory be provided at Campbelltown to enable non-invasive cardiology procedures such as transoesophageal echocardiography to be performed, with a view to providing interventional cardiology in the future.
- Campbelltown develop as the centre for Heart Failure with a Director appointed.
- An Area Cardiology Patient Flow Manager.

RESPIRATORY MEDICINE SERVICES

CHAPTER 10

Respiratory physicians deal with the diagnosis, assessment and medical therapy of all non-traumatic illness affecting the thorax and respiratory system. This includes airway disease (mostly asthma and COPD), lung and pleural malignancy, other pleural disease, respiratory infectious diseases (including TB), interstitial lung disease, pulmonary vascular disease, respiratory failure, toxic inhalations (including occupational respiratory disease), and respiratory complications of systemic diseases. Most respiratory physicians also manage sleep-related breathing disorders and some manage other sleep disorders.

Many respiratory illnesses are chronic diseases that follow either a progressive or a relapsing course. Most are managed outside hospital, by respiratory physicians in cooperation with GPs, for the majority of their course. However, many patients with respiratory disease require admission to hospital, including sometimes to intensive care, during episodes of acute deterioration. On most occasions the need for admission to hospital arises relatively urgently. Most respiratory admissions in adults are for the management of asthma, COPD and pneumonia.

The majority of in-patients with respiratory illnesses are admitted through the emergency department of each hospital. Respiratory Services are available in all SWSAHS hospitals, although the role delineation of each service varies. There is very little inter-hospital transfer of patients with nearly all patients with respiratory illness managed in the hospital they initially enter.

In 2002/03 there were 5,987 inpatient separations provided across SWSAHS, which accounted for 35,565 beddays. Respiratory patients occupy approximately 115 beds daily in SWSAHS hospitals on average. The Area is overall 86% self sufficient in the provision of inpatient respiratory medical services for its adult residents. 93% of bed-days for SWS residents are provided within the public sector. Most outflows are to adjacent hospitals (Auburn, Westmead, Concord and RPA) with 44% of outflows from the Bankstown LGA. Projections indicate that the requirement for inpatient beds will increase. The demand for rehabilitation and other non-inpatient services will also increase.

In 2006, at a planned 85% occupancy, assuming no changes in flow, there will be a need for approximately 121 beds for adult patients in SWSAHS hospitals. The demand for respiratory medical services is forecast to increase by 18.0% to 2006 and by a further 12.8% to 2011.

Current Service Provision

Bankstown Hospital

Bankstown Hospital respiratory physicians provide an on-call and on-take service for patients with respiratory illness requiring in-patient care and consultation on referred in-patients. One ward is designated as a respiratory ward. In 2002/03, there were 1,672 separations and the average LOS was 6.1 days (7.2 days excluding day only) for adult patients with respiratory illness, excluding lung cancer and mesothelioma.

Fairfield Hospital

In Fairfield Hospital most respiratory patients are managed by general physicians. In 2002/03, there were 776 separations, average LOS was 5.7 days (6.5 days excluding day only) for adult patients with respiratory illness, excluding lung cancer and mesothelioma.

Liverpool Hospital

Liverpool Hospital, respiratory physicians undertake in-patient care for a substantial (but unknown) proportion of respiratory patients and consultation on referred in-patients. A further substantial number of patients with respiratory illness are managed by general physicians. A medical ward has been designated as a respiratory ward and is developing a plan for enhanced respiratory in-patient care. In 2002/03, there were 1,547 separations, average LOS was 7.3 days (8.0 days excluding day only) for adult patients with respiratory illness, excluding lung cancer and mesothelioma.

Campbelltown and Camden Hospitals

At Campbelltown (and Camden) Hospital all patients are admitted under general physicians but most respiratory patients are transferred to the care of the respiratory physician on the next working day. In 2002/03, there were a total of 1,117 separations at Campbelltown with an average LOS of 5.7 days (6.0 days excluding day only) and in Camden, 429 separations with an average LOS of 2.7 days (4.2 days excluding day only) for adult patients with respiratory illness, excluding lung cancer and mesothelioma. The shorter length of stay for Camden reflects a large percentage of day only cases and the casemix of the patients.

Bowral Hospital

All respiratory patients in Bowral, are admitted under the care of a general physician, one of whom has an interest in respiratory medicine. In 2002/03, there were a total of 446 separations; average LOS was 4.7 days (5.9 days excluding day only) for adult patients with respiratory illness, excluding lung cancer and mesothelioma.

Day Only procedures

Bronchoscopies and pleural biopsies are performed on in-patients and on patients admitted for a day only procedure at Bankstown, Liverpool, Campbelltown and Bowral Hospitals.

A private respiratory laboratory is available at rooms co-located on the Bankstown Hospital site. A business case has been completed recommending establishment of public laboratories in SWSAHS.

In addition, a business case has been completed to develop a sleep disorders and respiratory failure service consisting of a clinic and a laboratory at Liverpool Hospital. There is opportunity to develop expertise in this growing field.

Ambulatory care is involved in the care of respiratory patients in some sectors. In Bankstown sector, Ambulatory Care services deliver parenteral anti-coagulation and intravenous antibiotics to patients with thromboembolism and respiratory infection, respectively. This is less commonly done in other sectors. In Macarthur sector, Ambulatory care service undertake domiciliary care of some patients who would otherwise be admitted to hospital.

The Area's tuberculosis service is located at Liverpool Hospital. The service is responsible for the diagnosis and management of referred patients with suspected or proven tuberculosis. In addition it is responsible for the public health and occupational health aspects of TB control including contact tracing and surveillance for TB among contacts (of active cases), refugees, migrants, health care worker and other high-risk groups. The service has linkages to the Public Health Unit and the AIDS and Infectious Diseases Branch at the DOH. There were 21,936 non-inpatient occasions of service in the Chest Clinic Cost Centre in 2002/03, representing a 5.4% increase from 2001/02 (Performance Indicator Reports).

Non Inpatients

A post-emergency (adult) Asthma Clinic is operating at Liverpool Hospital. Most non-inpatient medical care is provided by consultants in their rooms. This includes VMOs and part-time Staff Specialists with private rooms. In addition, there is a post-emergency Asthma Clinic at Liverpool Hospital and some ward follow-up patients are seen in the Chest Clinic at Liverpool. There is also a Staff Specialist out-patient clinic at Bankstown Hospital.

Pulmonary rehabilitation services are available in each of the health services, based on the hospital site. Patients are enrolled in exercise-based pulmonary rehabilitation programs. In all sectors a physiotherapist has been designated (part time) to run the service.

A substantial component of home nursing support for patients with chronic lung disease is provided by primary health nurses.

Chronic and complex care

Respiratory Liaison Nurses in each sector (except Macarthur) provide discharge care planning and (mainly in Wingecarribee) care planning, for patients with COPD. The main tasks involve assessment, referral for pulmonary rehabilitation, patient education, smoking cessation interventions and communication with GPs about hospital care. In Macarthur, the CCC program is closely linked with Ambulatory Care. In Fairfield, the Fairfield Division of General Practice jointly funds the position. The Liaison Nurse provides assessment, care planning and follow up of patients in the community. The service includes supporting General Practice with 3+ Asthma plans.

Home respiratory appliances program

All SWS residents who meet financial eligibility criteria have access to domiciliary oxygen and domiciliary CPAP devices, when these are prescribed in accordance with medical guidelines. A small number of patients also receive more complex respiratory assistance (bi-level positive airway pressure or home ventilators) through this scheme. A similar, but separately funded system, provides these resources for the first one month after hospital discharge (or longer for terminal care patients).

Research and Teaching

Research within the Department of Respiratory Medicine at Liverpool is undertaken in collaboration with the Woolcock Institute of Medical Research, the Children's Hospital at Westmead and the Centenary Institute for Cancer Medicine and Cell Biology.

The major fields of research are tuberculosis and asthma. Extension of previous work is occurring on the incidence of tuberculosis in refugees to examine the incidence in another group of migrants to Australia: those who were placed on a tuberculosis undertaking by immigration authorities. This research will examine the effectiveness and efficiency of current approaches to TB prevention and control in migrants. In addition, case control study, nested within the previously identified refugee cohort, to examine risk factors for the onset of tuberculosis in individuals who have been previously infected is being conducted. This research focuses on potential genetic risk factors.

The major current project in the field of asthma is the Childhood Asthma Prevention Study. This is a randomised controlled trial of two interventions for the prevention of asthma, implemented from birth in children at high risk by virtue of a positive family history. Recruitment was completed in 2000 and follow-up is ongoing. Five year follow-up will be completed March 2005.

Clinical research on COPD and bronchiectasis is in various stages of planning and will be assisted with the commissioning of a respiratory function laboratory.

There are plans to develop respiratory research at Bankstown Hospital.

Members of the Respiratory Department play an active role in teaching medical students both at the Liverpool campus and the UNSW campus and also participate in programs for training basic and advanced trainee registrars. The Department co-hosted (with the Woolcock Institute of Medical Research) a visiting Respiratory Fellow, from Singapore for 12 months last year and again this year co-hosting a PhD student from Vietnam, again with the Woolcock Institute.

Major Equipment

The provision of both respiratory laboratories and sleep disorders and respiratory failure laboratories across the Area will improve the provision of respiratory medicine and assist in improving the recruitment and training of junior medical staff. When the respiratory function laboratory commences operations, it will become a focus for additional research activity for example for Chronic Obstructive Pulmonary Disease.

RECOMMENDATIONS

- An Area-wide respiratory medicine service be established with Liverpool, Campbelltown and Bankstown developed as the major sites for comprehensive respiratory medicine services.
- Liverpool Hospital provide level 6 respiratory medicine services with ready access to patients cared for in all other Area hospitals for:-
  - Tuberculosis service;
  - Interventional bronchoscopy service;
  - Invasive radiological service;
  - Respiratory function laboratory;
  - Sleep laboratory and CPAP/BiPAP service;
  - Thoracic oncology (linked to other hospitals); and
  - Asthma clinic.
- An Academic Centre be established at Liverpool and an additional senior Academic Respiratory Medicine Physician appointed.
- The following components of care delivery be available at Bankstown and Campbelltown, with ready access to patients from Camden & Wingecarribee;-
  - Invasive radiological service;
  - Respiratory function laboratory;
  - Sleep laboratory; and
  - Asthma clinic.
- Respiratory Medicine physicians be appointed to Campbelltown and Fairfield with cross appointment to Bankstown or Liverpool.
- The home respiratory appliance service be centralised and linked to home nursing support.
- Access for non-inpatient asthma services, pulmonary rehabilitation patients, TB service and expansion of smoking cessation be assisted by an Area Respiratory CNC.
- Private practice-style outpatient facilities with procedure rooms be developed across the Area.