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1. Foreword

The Sydney Local Health District hosts world leading biomedical, clinical, health services and public health research. Researchers in our hospitals are currently conducting more than 220 active clinical trials and almost 550 ethics applications were processed by our research offices last year. Our researchers received many millions of dollars in peer reviewed grants, produced, at a broad estimate, many hundreds of scientific publications, and received numerous prestigious scientific, medical and healthcare awards. This is undeniably a world class effort.

This Strategic Plan for Research has been developed in order to strengthen and enhance an already very significant research effort. We wish to ensure a strong, vibrant and well-governed research and healthcare environment now and in the future, within a culture that is assertively supportive and proud of our research. The research hub within the Sydney Local Health District (SLHD) comprises the University of Sydney, the two principal tertiary facilities Royal Prince Alfred Hospital and Concord Repatriation General Hospital, and several highly eminent medical research institutes. We wish to ensure the health service is an active, equal and recognised participant within this collaborative research precinct. It is also important to support research and a research culture in primary care, community health and the general hospitals in our District.

The integration of high quality health delivery, education and research has long been a feature of healthcare in this area. It is the Board’s intention to move this historical commitment forward in a strategic and coherent way. We wish to ensure that research is well-profiled, is pivotal to healthcare provision and is positioned to take advantage of local, state, national and international opportunities.

This Research Strategic Plan addresses issues associated with our research role, profile, our collaborations, support for researchers, governance arrangements and corporate support. It is an ambitious, yet feasible, plan for the next five years. It builds on the strong foundations of research in the Sydney Local Health District.

Hon Ron Phillips  
Chair, Sydney Local Health District Board

Dr Teresa Anderson  
Chief Executive, Sydney Local Health District
2. Introduction

Within the Sydney Local Health District (SLHD) there is a long and proud history of research and research translation. SLHD directly undertakes, hosts, sponsors and supports significant biomedical research, clinical trials, clinical research, public health, primary care and health services research (the research ‘pillars’).

In the context of this plan, research is defined very broadly as

“Investigation undertaken to gain knowledge and understanding...”
“Human research is research conducted with or about people or their data or their tissue.”
(NHMRC, ARC & AVCC 2007 p3-4)

The Sydney Local Health District is committed to fostering research for the following compelling reasons:

- it brings wide community benefits associated with medical breakthroughs and with improved understanding of health, wellbeing, disease patterns, healing, health systems and services;
- it propagates an enlightened and innovative spirit of critical enquiry and analysis within the health service;
- it fosters policy, service development, clinical practice and care which is evidence-based; thus contributing to service and system quality, safety, effectiveness and efficiency;
- it is an important factor in attracting and retaining high quality staff who are interested either in undertaking research or in working in centres of research and healthcare excellence; and
- it supports a strong and enthusiastic teaching and training environment.

Within the boundaries of SLHD, medical research institutes (MRIs) have developed as highly successful centres of excellence in research with clear themes, innovation, research infrastructure, community support and a culture of research excellence. Institutes located within the SLHD and with strong interrelationships with the District include the ANZAC Research Institute, The Asbestos Diseases Research Institute, The Brain and Mind Research Institute, the Centenary Institute of Cancer Medicine and Cell Biology, The George Institute for Global Health, The Heart Research Institute and the Woolcock Institute of Medical Research. These are independent or semi-independent, incorporated organisations also affiliated with the University of Sydney. There are a number of other centres of health research excellence in the SLHD, with the Surgical Outcomes Research Centre (SOuRCe, RPA), the Centre for Education and Research on Ageing (Concord), the Baird Institute (RPA), The Sydney Cancer Centre, The Sydney Melanoma Unit, and the Centre for Integrated Research and Understanding of Sleep (CIRUS, RPA) being some examples.

The integration of service delivery, education and research has long been a feature of healthcare in this area. As a result of the strong research presence, research in the SLHD is typically highly collaborative. The translation of research findings to patient care is facilitated by the proximity and close linkages of the six research institutes, the University of Sydney and the Royal Prince Alfred and Concord Repatriation General hospitals.

Within the SLHD a number of our highly eminent, leading edge researchers, some of whom have dedicated laboratory space in the hospitals and who receive substantial competitive peer-reviewed funding grants, are not affiliated with an Institute. The hospitals also support many clinical trials and significant clinical and health services research projects and studies. A large number of the SLHD researchers have been in receipt of prestigious scientific, medical and healthcare awards. The SLHD research is world leading in some biomedical and clinical areas and has a strong record of scientific publications.
However, despite our proven track record, our research must continue to evolve in order for the SLHD to remain a leading and esteemed medical and healthcare research centre. This Research Strategic Plan aims to move the District’s support for research from a historical legacy to a strategic direction.

Specifically, the Plan aims to:

- support and further develop the capacity for research across SLHD;
- enhance the profile of current research in the SLHD;
- strengthen the performance and quality of research in the SLHD;
- encourage new researchers, including junior staff;
- sustain the commitment to research of SLHD personnel in management, support and research roles; and
- ensure governance arrangements which promote accountability and responsibility for research conducted according to ethical principles, scientific, regulatory and professional standards and the principles of risk management.

The process of planning

The need for a Research Strategic Plan was identified through the Education and Research Subcommittee of the Sydney Local Health District Board.

This plan has been developed in close consultation with researchers and clinicians across the Sydney Local Health District. The plan has been developed in association with our major research partners, the Medical Research Institutes and the University of Sydney.

Four major processes were used to inform the plan. These included:

- face-to face and telephone consultations with researchers;
- a staff survey;
- the development of a policy background paper; and
- a Research Planning Forum involving over 70 researchers from across SLHD.

Initially, consultations with a selection of researchers in the Sydney Local Health District were conducted. Notes were taken, although interviews were neither transcribed nor taped. Based on these discussions, a Research Issues Paper was developed and circulated to key researchers.

The staff survey comprised a thirteen item questionnaire using an on-line survey tool. Items included information about the respondent’s clinical and research role, research funding and research-related collaborations. Respondents were asked to outline their views on the adequacy of research facilities, the resources and support available to them, and the ways in which research could be improved in the SLHD. A summary of the results can be found in Appendix 4.

The background policy paper was devised using internet searches and discussions with policy advisers.
The half day Research Forum, on 12th August, 2011, brought together experienced and emerging researchers, the Directors of the Medical Research Institutes, senior health service managers and representatives of the University of Sydney.

The purpose of the forum was:

- to consult and involve researchers in the planning process;
- to analyse the research strategic environment; and
- to set realistic and feasible strategies and actions for the short, medium and long term.

Information, views and evidence from each of these sources has informed the Strategic Plan. Indeed, the plan has purposefully extracted information from each of these sources.

The Plan has been developed within the context of the NSW Health and Medical Strategic Review and the SLHD’s response to the review has sharpened and streamlined this Plan.

The draft Plan was circulated to research personnel and key partners for comment prior to finalisation.
### 3. Vision, Mission, Principles and Outcomes

<table>
<thead>
<tr>
<th>Vision</th>
<th>To be a world leader in research which drives excellence in health and health care and generates community, social and economic benefits.</th>
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<tr>
<td>Mission</td>
<td>A Health Service that values, profiles and supports a wide spectrum of the highest quality research as a central component of health service provision, and whose research and its translation is valued by its community and is recognised nationally and internationally.</td>
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</table>
| Principles | • That research undertaken in the SLHD is bound by the nationally agreed human research ethical principles of:  
  o Respect for human beings  
  o Adherence to research merit and integrity  
  o Justice  
  o Beneficence  
  
  Implicit in these principles are respect for cultural and indigenous diversity, altruism and the importance of contributing to the broad societal and community well-being. (NHMRC, ARC & AVCC 2007).¹  
  • That research conforms to national codes of care and usage of animals for scientific purposes (NHMRC 2004).²  
  • That research is valued as a central driver of health service quality, excellence and innovation and is pivotal to health service delivery in SLHD.  
  • That the SLHD health service culture, structure and human resource environment values and supports research and its researchers.  
  • That the health service and its researchers share the responsibility for ensuring that research is profiled and communicated to the research community and to the broader community. |
| Outcome Measures | Demonstrable increases in:  
  • Medical breakthroughs and discoveries  
  • Research grants  
  • Publications  
  • The number of research students  
  • Citations  
  • Awards  
  
  At the broader level, it is expected that research investment will result in:  
  • Improved health outcomes  
  • Improvements in health practices  
  • Improved community morbidity and mortality rates  
  • Broader economic and social benefits |
4. The Sydney Local Health District

Overview

The Sydney Local Health District comprises the Local Government Areas (LGAs) of City of Sydney (part), Leichhardt, Marrickville, Canterbury, Canada Bay, Ashfield, Burwood and Strathfield. It covers 126 square kilometres and has a population density of 4,210 residents per square kilometre (ABS 2006). The boundaries are indicated in Map 4.1.

The District includes the principal teaching hospitals of Royal Prince Alfred (RPA) and Concord Repatriation General, as well as district hospitals at Balmain and Canterbury and the Sydney Dental Hospital in the CBD of Sydney. The District has a comprehensive range of community-based health services. Services are linked with primary care providers, including Divisions of General Practice and Medicare Locals.

Map 4.1 Sydney LHD

The population of SLHD is projected to grow to 612,914 by 2016 and to over 650,000 in the next 20 years, with all LGAs expected to experience population increases (see Figure 4.1 and Figure 4.2).

The District is socio-economically and culturally diverse. Its population is ageing, with the number of residents aged over 70 projected to increase by 29% over the next decade. Each year, approximately 8,500 babies are born to mothers residing in SLHD. The area is home to very significant populations of Aboriginal people and to people who speak a language other than English at home (LOTE).
5. Policy Context

Introduction
Medical and healthcare research is undertaken in a dynamic and relatively complex policy context. Recent policy changes affecting research at the Local Health District level include changes at the Commonwealth, State and local levels.

Of particular significance is the establishment at both the Commonwealth and State levels of major review and strategic planning processes.

In 2011 the Commonwealth Government, through the Department of Health and Ageing established an independent broad ranging review of health and medical research in Australia. The terms of reference are attached at Appendix 2. The review panel is due to report by September, 2012. This will be the first national strategic research review since the Wills Report in 1998.

In July, 2011, the NSW Minister for Health announced that, as part of the Better Patient Care: Boost for Medical Research 2011 election policy, a review of the current performance of health and medical research in NSW would be undertaken and a strategic plan for the next 10 years would be developed.

This new state plan provides a clear and purposeful approach to fostering and supporting the development of health and medical research in NSW. The SLHD Research Strategic Plan has been developed concurrently with the NSW strategic plan and measures have been taken to ensure consistency in direction and strategy. This formative and final state plan, released in mid 2012, is based on two key strategic imperatives:

- fostering translation and innovation from research; and
- building globally relevant research capacity.

Each of these broad strategies has up to six associated themes.

In respect of fostering research translation and innovation, the key themes are encouraging research and innovation in health services (e.g. encouraging a research-positive culture and business framework, grants programs, training), promoting leadership in clinical trials, maximising the use of research in policy, focusing intellectual property and supporting early stage venture capital.

In respect of building globally relevant research capacity, the themes include enhancing medical research hubs (including the “Central Sydney” hub), strengthening the workforce, improving infrastructure support (for medical research institutes), building research and maximising their use, leveraging added investment in research and improving NSW Health research administration. Appendix 1 summarises the key findings and recommendations of this important strategic review. The full impact of this plan needs to be understood within the context of the changes to research support under the National Health reform (see section A1). Appendix 3 outlines key aspects of the Better Patient Care commitment.

A. Commonwealth Government Policy
The Commonwealth Government has the responsibility for determining national research funding priorities and the provision of over-arching support for research. In respect of medical and health research policy, the national health reform, changes to university research funding, National Health and Medical Research Council (NHMRC) and Australian Research Council (ARC) policy developments are significant.
1. The National Health Reform

On 3 March 2010, Prime Minister Rudd released a proposal for the reform of the Australian health system called “A National Health and Hospitals Network for Australia’s Future”. In August, 2011, the Council of Australian Governments (COAG) signed the final National Health Reform Agreement. The key features of this reform are the introduction of a National Health Funding Pool and the introduction of Activity Based Funding (ABF). Under the ABF approach, hospitals across Australia will be funded for the activity they undertake, based on a national efficient price.

The Commonwealth and States have renewed their agreement to the establishment of the National Health Performance Authority (NHPA) and the Independent Hospital Pricing Authority (IHPA). The NHPA will produce reports on the performance of hospitals and primary health care services. The IHPA will set the ‘efficient price’ for services provided by public hospitals under ABF and will annually determine the efficient cost of teaching, training and research.

On 1st January, 2011 in response to this proposed national health reform, Local Health Networks (now named ‘Districts’), were established in NSW. In addition, Medicare Locals were planned with responsibility for co-ordinating primary health care services for defined populations. These must be implemented by July, 2012.

From July, 2014, the Commonwealth will fund states and territories for 45% of the ‘efficient growth’ of teaching and research activities, increasing to 50% from 1st July 2017. The IHPA will examine the feasibility of funding teaching and research through ABF or other appropriate arrangement by 2018. The agreement makes provision for the Commonwealth to contribute growth funding for teaching and training in both hospitals and other organisations such as universities. In contrast, growth funding for research only applies to research undertaken in public hospitals.

It is generally considered unlikely that the IHPA will set a higher price for principal referral hospitals based on their research costs; however, it is widely acknowledged that competitive grants (NHMRC, ARC etc) do not cover the infrastructure costs of hospital-based research, especially in hospitals with a long history of research such as RPA/Concord. The Australian Health Services Research Institute (AHSRI) notes that in the university sector, the Sustainable Research Excellence in Universities (SRE) initiative has been established to address similar shortfalls in the higher education sector and that one future policy option is to promote an equivalent approach in the hospital sector.

Further, the AHSRI notes, in the hospital context, teaching, learning, research and clinical care often take place simultaneously at the bedside. The costs of training and research are therefore extremely difficult to identify and to separate from the cost of the patient care activity which will be funded under ABF. In addition, there are many staff in the SLHD with complex employment arrangements, including being employed by the university, MRIs etc. The ‘independent umpire’ (IHPA) will need to take this into account on a case by case basis.

A range of major questions arise in regard to the operation of the COAG policy. Such questions include how is research defined within the public healthcare system? How will research funds, such as those that derive from pharmaceutical companies or charitable organisations, be treated? Who pays for the (significant) capital and indirect costs of research? How will the baseline of current research in hospitals be established?

2. National Health and Medical Research Council (NHMRC)

Key objectives of the NHMRC include: the fostering of medical and public health research and training; improving public health; and further consideration of ethical issues related to health.

Of significance to local health service research, the NHMRC has developed a national ethical framework for research (NHMRC and AVCC 2007). This framework includes guidelines for human ethics committees, a new national system for single ethical review of multi-centre research, and policies for the conduct and governance of research. A range of policy guidelines are also available in areas such as use of animals in scientific research.
and intellectual property. Further, in building Australia’s research capacity, the NHMRC provides fellowships, awards, scholarships, equipment and ‘enabling capabilities’ grants. In translational knowledge, Centres of Clinical Research Excellence and development awards and projects have been funded.  

Most significantly, the NHMRC provides large peer reviewed project grants and supports selected international research collaborations. The majority of these grants in 2010 were provided for basic research (47%) followed by clinical medicine (33%), with the largest being to cancer, prevention, cardiovascular disease and mental health.  

Under the Independent Research Institutes Infrastructure Support Scheme (IRISS), the NHMRC provides infrastructure grants to eligible Medical Research Institutes (MRIs).  

IRISS funds are allocated by calculating 20 cents for every dollar of NHMRC grants the eligible medical research institute was awarded. This is comparable to infrastructure provided to universities through the Research Infrastructure Block Grants Scheme (RIBG). This program is important for Medical Research Institutes associated with the health service. There are inbuilt incentives for administering health research grants. Criteria for funding include that the MRIs need to demonstrate that they have grant funding of at least $1 million, including at least one grant from the NHMRC. (This latter issue impacts on developing Institutes.) The NSW Health and Medical Research Strategic Review (2012) indicates that the NSW Health Office of Health and Medical Research will work with the Commonwealth to align funding to excellence, scale, capacity and key priority areas and to ensure a fair and transparent funding program for health and medical research.

In 2010, the NHMRC issued a discussion paper Developing Advanced Health Research Centres in Australia (NHMRC 2010). The concept derives from the United Kingdom policy related to Academic Health Centres. 

Advanced Health Research Centres aim to encourage and formally recognise outstanding research collaborations between health and hospital services, research institutes, universities and others. Such collaborations are designed to advance translational and applied health research and to encourage the sharing of research resources, relevant data and information and research teaching. The policy is founded on the idea of promoting a research-oriented environment with a critical mass of people engaged in applied research which would also attract the highest quality medical and health researchers. Such centres would provide international and national leadership in research translation and evidence-based clinical care, with the ultimate aim of improving patient outcomes.

It has been proposed that applicants for this status would be judged on their research excellence and the effectiveness of proposed governance arrangements. Judging would be undertaken by an international panel with expertise and experience in research and its translation. SLHD, the university, MRIs and partners are well placed to achieve such status should this policy be activated and if the participants collaborate and present a coherent super structural arrangement.

3. University Research Funding

The Australian Government funds universities to undertake research via a dual support system of competitive grants and block grants. The Commonwealth block grant provides funding for infrastructure, the indirect costs of research and research training. Related to the ways these grants are allocated, universities have a very strong incentive to administer medical and health care grants, provided the researcher(s) has a university appointment. Further, the university has incentives to promote and support postgraduate student research based in hospitals. The main block grants are:

- **Institutional Grants Scheme (IGS)**
  The IGS provides general support for research and research training. Funding is allocated on the basis of institutional research performance. The funding formula includes:
  1. success in attracting research income from a variety of sources (60%);
2. success in attracting research students (30%); and
3. the quality and output of research publications (10%).

- **Research Infrastructure Block Grants Scheme (RIBGS)**
The Department of Innovation, Industry, Science and Research (DIISR) distributes University Research Infrastructure Block Grants to support systemic research capacity, based on the university’s research and research training performance. The overall funding pools are fixed and an individual university’s allocation is based on their research and training performance relative to others. Universities which obtain NHMRC and ARC grants in turn increase their allocation of Research Block Grant funding. The current level of funding provides an indirect cost support equivalent to approximately 21% of ARC and NHMRC competitive grant income.

- **Research Training Scheme (RTS)**
Provides grants to eligible institutions to support research training for students undertaking doctorates by research and masters degrees by research and is the largest of the block grants. Performance is measured by:
  1. number of research students completing their degrees (50%);
  2. research income (40%); and
  3. measure of research publications (10%).

Recently there have been changes to Higher Education Research Data Collection (HERDC) calculations. In 2010, the Department of Innovation, Industry, Science and Research (DIISR) released the 2010 HERDC specifications that removed previous joint venture provisions, improved auditing requirements for joint ventures and included clearer definitions of third party income. This has significantly altered the way Research Block Grants are distributed.

The RIBGS, ARC competitive grants and the NHMRC competitive grants provide much of the university’s public research funding. The Sustainable Research Excellence in Universities initiative addresses the gap in funding for the indirect costs of university research supported by Australian competitive grants.

4. **Australian Research Council (ARC)**
The ARC is a statutory authority within the Australian Government’s Innovation, Industry, Science and Research (IISR) portfolio. Its mission is to deliver policy and programs that advance Australian research and innovation globally and benefit the community.

In seeking to achieve its mission, the ARC provides advice to the Government on research matters and manages the National Competitive Grants Program, a significant component of Australia’s investment in research and development.
NSW Government Policy

NSW Health and Related Agencies

Office of Health and Medical Research (OHMR) - NSW Health

The NSW Government has recently established the Office of Health and Medical Research which will have an increasingly important role. The OHMR, based within NSW Health, works with health and medical research communities, the higher education sector and business to promote research in the broader interests of NSW, in particular fostering health and medical research development, translation and capacity. Key aspects of its revised role are to:

- assume responsibility for the implementation of the NSW Health and Medical Research Strategic Review and ensure a high level of engagement with all parts of the health and medical research sector;
- provide funding and to monitor the Medical Research Support Program that provides infrastructure support for NSW's medical research institutes;
- fund, support and monitor research “hubs” across NSW to enhance collaborative research (one of the 8 NSW hubs is “central Sydney”);
- fund and support selected international partnerships in research;
- develop a research asset register, a 10 year research asset strategic plan and a state wide biobanking framework to enhance investment. Work with organisations that receive NSW government funding to develop and report on asset plans and protocols to promote sharing and access to assets;
- support and fund clinical research networks, the Medical Devices Seeding fund, the Research Capacity Building program and support the collaborative development of other initiatives;
- establish a clinical trials support team to coordinate clinical trial policies and to report on the timeliness and outcomes of clinical trial ethics processes;
- work with key health stakeholders, including Local Health Districts (LHDs), Agency for Clinical Innovation, Cancer Institute (NSW), and universities to develop an implementation plan for encouraging research and innovation in LHDs;
- work with key stakeholders to develop and implement an intellectual property framework and to commercialise research innovations;
- work with relevant organisations to explore opportunities for further investment in research and to explore opportunities for fruitful co-investment; and
- work with research governance offices to improve research ethics and governance processes, including training and improved information systems.

NSW Health Resource Distribution Formula – teaching and research

The key purpose of the NSW Resource Distribution Formula (RDF) is to guide the planning and allocation of funds from the Ministry of Health to the geographically based District Health Services in NSW. This allocation recognises the principle of equity in access to services as well as the need to provide high cost and specialist services in a limited number of places. Teaching, learning and research is one of nine components of the RDF.
Costing teaching, learning and research is inherently difficult. Initially it was considered that the higher casemix costs of tertiary centres represented teaching and research. Over time this gap has narrowed as efficiency measures have been implemented.

The direct teaching and research component of the RDF is calculated in proportion to weighted teaching, learning and research full time equivalent (FTE) positions based on those reported through the (Health Information Exchange) HIE data. This quantum is distributed under the teaching and research component of the RDF.

The indirect component of the RDF is based on a formula that includes both the number of direct teaching, research and learning positions and differences in the clinical complexity of patients seen in different types of hospitals. The indirect component covers not only the indirect costs of teaching, research and learning but it also includes differences in patient severity that cannot adequately be measured by the Australian Refined Diagnostic Related Groups (AR-DRG) classification (within DRG variations that cannot be explained).

- **NSW Health Research Governance Guideline**

  The recently released Research Governance in NSW Public Health Organisations Guideline (GL2011_001) summarises the principles, standards and requirements for the responsible conduct of quality research and clarifies the roles and responsibilities of key parties involved in research in public health organisations in NSW. The Guideline integrates the national framework for research governance with the range of research-related NSW legislations and NSW Health policies.

- **Cancer Institute NSW**

  The Cancer Institute NSW aims to attract and promote cutting-edge cancer research and to continue to support work that is advancing cancer control in NSW. Its competitive grants program is designed to accelerate the translation of cancer-related research into clinical practice. The Cancer Institute supports clinical trials by providing the funding for resources, infrastructure and personnel needed to conduct clinical trials at research institutions throughout NSW. A register of clinical trials is kept.

- **Capacity Building Infrastructure Grants Program (CBIG)**

  The focus of the CBIG program is infrastructure and capacity building support for public health and health services research rather than clinical research. CBIG applicants must be organisations or collaborations with a defined management structure. Collaborations must have a written agreement between their member organisations formalising the collaboration and must have been demonstrably present and separately identifiable from member organisations.

- **Local Health District Policy**

  Clearly the policies and processes at every level can influence the nature, quality and translational impact of research. Related to this, the responsiveness of organisations to the needs and issues of research staff can be critical in recruiting, retaining researchers and supporting innovation. It is in this latter area that Districts have the most influence.

  At the District level, the implementation of Commonwealth and State policies related to research governance, research ethics governance and the conduct of responsible research are integrated and local policies are, in turn, produced. There are a range of policies and procedures of local stakeholders, such as the university, the hospitals, the medical research institutes, the media and communications unit and others that directly affect research and researchers.
6. Overview of Research in the SLHD

SLHD Research Output Summary

The SLHD research output is considerable.

- Ethics Applications. There were 513 governance submissions and 405 ethics submissions to SLHD Research Offices in 2011.
- Publications. In 2009-10, the medical staff of RPA alone produced 545 scientific publications.
- Clinical Trials. In 2010, over 220 active trials were underway and many others were in the process of being analysed or of being approved.

Research at the Royal Prince Alfred Hospital

The Royal Prince Alfred Hospital (RPA) is a principal referral hospital linked with the University of Sydney. Figure 6.2 provides a summarised visual representation of selected research interests at the hospital. More detailed information is available on the District’s website and in the District’s research report.

The RPA Research Development Office processed 287 ethics submissions and 345 governance submissions in 2011. Governance submissions represent all studies authorised to be conducted in the RPA zone, including at RPA, Canterbury, Balmain, Community Health, Oral Health, Population Health, Drug Health and Department of Forensic Medicine. The ethics submissions also include some studies in which the local district does not participate, although the office administers their ethics process.

Figure 6.1 RPA Ethics Office Applications

RPA Hospital Ethics and Governance Submissions 2008-2011

- Ethics
- Governance

Graph showing the number of ethics and governance submissions from 2008 to 2011.
There are a number of Medical Research Institutes (MRIs) on or nearby to the RPA campus which are interrelated and collaborate closely with the health service.

On the campus of the RPA hospital is the Centenary Institute of Cancer and Cell Biology with a strong focus on research on cancer, cardiovascular disease, infectious diseases, immunity, genetic diseases and liver disease.

In close proximity to the hospital, and having close and collaborative links with the health service are:

- The Heart Research Institute, with principal interests in atherosclerosis, lipids, free radicals, gene regulation, cell biology and nutrition and metabolism.

- The George Institute for Global Health which has one of its several international offices at the RPA hospital. It has a major interest in clinical trials, chronic conditions, injury, frailty and disability and disadvantaged populations. The major interface with the health service is in clinical trials.

- The Woolcock Institute for Medical Research with a focus on respiratory and sleep issues including asthma, allergies, COPD, lung fibrosis, LAM (lymphangioleiomyomatosis), epidemiology, tuberculosis and sleep and circadian research.

- The Brain and Mind Research Institute with major interests in youth mental health, Parkinson’s Disease, healthy brain ageing, autism, anxiety, chronobiology and sleep, multiple sclerosis and schizophrenia.
<table>
<thead>
<tr>
<th><strong>FIG 6.2 Royal Prince Alfred Hospital Selected Research Overview</strong></th>
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<tr>
<td><strong>Anaesthetics</strong></td>
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<tr>
<td>• Cerebral blood flow studies during carotid artery surgery using transcranial Doppler device</td>
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<td>• Isolated limb infusions for melanoma – efficacy and pharmacokinetics of melphalan - collaborative study</td>
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<tr>
<td>• Clinical efficacy of transversus abdominis plane blocks in major abdominal surgery</td>
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<tr>
<td>• Development of ECMO services for acute respiratory failure - collaborative study</td>
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<tr>
<td>• Pharmacokinetic studies on ropivacaine levels during fascia iliaca and TAP blocks for post operative analgesia</td>
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<tr>
<td>• Platelet function studies during cardiac surgery using multiple platelet function assays</td>
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<tr>
<td>• Effects of hemodilution with starch solutions on platelet function</td>
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<tr>
<td>• Effects of platelet transfusion on patient outcomes in liver transplant patients</td>
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<tr>
<td>• Physiological effects of hormonal resuscitation regime on organ preservation in a pig transplant model – collaborative study</td>
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<tr>
<td><strong>Breast Surgery</strong></td>
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<tr>
<td>• Evaluation of aromatase inhibitor in prevention of breast cancer</td>
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<tr>
<td>• Trial of axillary dissection vs no dissection</td>
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<tr>
<td>• Differentiation of benign and papillary lesions of the breast</td>
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<tr>
<td>• Clinical outcomes of patients with phyllodes tumours of breast</td>
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<tr>
<td>• Investigation of Wnt pathway proteins in the pathogenesis of phyllodes tumours of the breast</td>
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<tr>
<td><strong>Cardiology</strong></td>
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<tr>
<td>• Atherosclerosis – endothelial dysfunction and studies of early disease reversibility</td>
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<tr>
<td>• Coronary disease – behavior of the coronary vessels in health and disease, micro vascular measurement</td>
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<tr>
<td>• Cardiovascular Genetics – established Australia’s first dedicated clinical and research service in cardiovascular genetics, including inherited heart muscle diseases</td>
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<td>• Angiogenesis – new vessel formation</td>
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<td>• Cardiac Imaging – cardiac MRI</td>
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<tr>
<td>• Sleep Medicine – the study of the interface between sleep disorders, breathing, heart failure and high blood pressure</td>
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<tr>
<td>• Developing world medicine – in China, India, Indonesia and Africa, in projects related to atherosclerosis, rheumatic heart disease and malaria</td>
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<tr>
<td>• Aortic disease – a multidisciplinary approach to the study of aortic disease, including valve and vessel aspects</td>
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<td>• Structural heart disease – including research into the optimal strategies for non-operative valve replacement (aortic, pulmonary)</td>
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<td>• Congenital heart disease – variety of research studies in adults with congenital heart disease</td>
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<tr>
<td>• Pulmonary vascular disease – esp. early detection of pulmonary hypertension</td>
</tr>
</tbody>
</table>

**University of Sydney**
FIG 6.2 Royal Prince Alfred Hospital Selected Research Overview

**Cardiothoracic Surgery**
- Mesothelioma - national tissue sampling and data collection; international register of pleural and peritoneal mesothelioma; examining the role of extended surgery; potential of “triple therapy” chemotherapy, surgery and radiation
- Biomaterials – aiming to produce a wholly synthetic biologically compatible blood vessel
- Aortic-congenital diseases of heart - birth to death studies of factors affecting this disease; devising simple tests for early diagnosis of bicuspid aortic valve disease; refining clinical indicators for early surgery and biomarkers for detection of imminent deterioration
- High Risk Cardiac Surgery - identifying the side-effects of heart-lung machine; surgical techniques to avoid heart-lung machine; improving heart-lung machine; role of new technology in higher risk aged population

**Cell and Molecular Therapy**
- Haematopoietic stem cells and their environment - especially how to increase the number of rare blood-forming stem cells when grown outside the body
- Essential cell functions and cancer. The role of CCCTC-binding factor tumour suppressor gene and its related cancer/testic gene BORIS - genes which become deregulated in carcinogenesis. We have shown they share a number of protein interactors
- Computer analysis of gene expression (Bioinformatics) - understanding the blood cell production regulation in the body, with application to leukaemia. MicroRNAs found to be important in controlling gene expression patterns and intricately involved in cell development and differentiation

**Clinical Biochemistry**
- Cardiovascular disease clinical trials of novel risk factor interventions strategies
- Biomarker discovery: predictive capability of a range of biochemical analyses such as Cystatin C, BNP and hs-TnT. Most notably, PLA2 response was found to independently predict the response to statin therapy in secondary prevention
- Demonstration of improved lipid profile following introduction of CPAP therapy for sleep apnea. In comparison to a “Sham” intervention, CPAP reduced triglyceride levels by over 12% without additional interventions such as diet, exercise or drugs
- On-going biobank activities that currently focus on genome-wide association studies in diabetes, metabolic markers of diabetic micro vascular complications and predictors of morbidity and mortality in the elderly
- Mutation detection in inherited porphyria
FIG 6.2 Royal Prince Alfred Hospital Selected Research Overview

Clinical Immunology
- Autoimmunity: Investigations to improve diagnostic tests for autoimmune disorders, particularly systemic lupus erythematosus
- Description of a novel method to establish clinical activity in systemic lupus erythematosus (SLE) using an antibody microarray able to capture white blood cells in the peripheral blood from patients with SLE. Collaborative studies
- Infection and Immunity: studies in the pathobiology of infection with and the immune response to mycobacterial diseases including tuberculosis and leprosy
- The cellular and cytokine responses and the immunogenetics of the control of tuberculosis and other intracellular pathogens in humans and mice, and in the development of new vaccines against TB including protein and recombinant viral subunit vaccines and rBCG vaccines. Collaborative studies
- Infection and Immunity: Participant in multi-centre trials of therapy for HIV infection

Dermatology
- Understanding of skin immune responses to infections and tumours: established new imaging technology- intravital multi-photon microscopy to study immune cells in real time
- Non-melanoma skin cancer: the role of UV in suppression of immunity
- Novel therapies vs melanoma: efficacy of targeted drugs and immunotherapies
- Cutaneous lymphoma: prognostic factors effecting survival
- Cutaneous oncology in solid organ transplant patients; epidemiology of skin cancer

Emergency Department
- Trauma
- Education/E-Learning
- Mental Health
- Clinical Handover
- Early Pregnancy
### FIG 6.2 Royal Prince Alfred Hospital Selected Research Overview

#### Endocrinology
- Diabetes complications: mechanisms and management incl. growth factors, inflammation and tissue and matrix regulation, telomeres and atypical diabetes
- Diabetes healthcare delivery
- Prostate cancer & role of arachidonic acid pathway
- Metabolism and obesity management
- Iron, inflammation and immune function in young obese women
- Insulin tolerance testing
- Antenatal thyroid disease
- Improving outcomes of the PWS patient
- Benefits of home exercise
- Dietary intervention in gestational diabetes to reduce child obesity in women at high risk of GDM

#### Gynaecology/Oncology
- Wide spectrum of clinical, supportive care and basic science research interests and collaborations locally, regionally and internationally
- Improving patient outcomes after surgery: implemented and studied a Fast Track Surgery Program which has proven enhanced recovery outcomes
- In conjunction with the Centre for Medical Psychology and Evidence Based Decision Making (CeMPED), USyd, a number of supportive care initiatives have been developed and trialed including:
  - Asymptomatic elevation of CA125 in patients with ovarian cancer
  - Barriers and facilitators affecting vaginal dilator use after pelvic radiation therapy
  - Information aids for women receiving pelvic radiation therapy
  - Enhancing fertility preservation in women with gynaecological cancer
  - Therapeutic pharmaceuticals and clinical trials
  - Surgical procedure efficacy studies

#### Haematology
- Multiple Myeloma
- Immunotherapy
- Role of microRNAs in the aetiology of acute promyelocytic leukaemia (APL)
- Mutations causing drug resistance in APL
- Development of novel diagnostic methods to detect mutations in myeloproliferative neoplasms
- Optimising management of APL through national clinical trial design
- Extra-corporeal photopheresis to treat graft versus host disease post haemopoietic stem cell transplantation
- Conditioning regimens in haemopoietic stem cell transplantation
- Iron chelation in the haemoglobinopathies
- The development of novel assessments of iron load by liver and cardiac MRI
- The development of novel biomarkers in iron load - collaborative study

#### Gastroenterology
- Liver immunology
- Role of the oligopeptidase DPIV genes
- Liver cell biology
- Transplant immunology
- Hepatitis C clinical trials
- Hepatitis B clinical trials
- Hepatocellular carcinoma
- Liver Transplant outcomes
- Small bowel diseases
- Endoscopy efficacy and outcomes

#### Geriatrics
- The integration of exercise into mainstream healthcare
- Exercise as a treatment for chronic disease
- Diabetes
- Hip fracture
- Depression
- Mild cognitive impairment treatment and performance

#### Gastroenterology
- Liver immunology
- Role of the oligopeptidase DPIV genes
- Liver cell biology
- Transplant immunology
- Hepatitis C clinical trials
- Hepatitis B clinical trials
- Hepatocellular carcinoma
- Liver Transplant outcomes
- Small bowel diseases
- Endoscopy efficacy and outcomes

#### Intensive Care
- DVT prophylaxis for ICU patients
- Dry powder inhalation to intubated patients
- Severe sepsis
- Fluid resuscitation in haemodynamic management of critically ill patients
- CRRT dose with acute kidney injury patients
- Clinical handover HELICS:
- Improved patient comfort with analgesia
FIG 6.2 Royal Prince Alfred Hospital Selected Research Overview

**Medical Oncology**
- Multi-centre clinical trials/CTC
- Lung and neck cancers
- Translational research in prostate and lung cancers and novel plasma and tissue biomarkers
- Breast cancer: lessen toxicity of treatments
- Testicular cancer
- Gynaecological cancer
- Renal cancer
- Centre for Medical Psychology and Evidence-based Decision Making
- Supportive care for cancer patients
- Clinical Cancer registry collects public information about malignant tumours, treatment and performance

**Melanoma and Surgical Oncology**
- Lymphatic mapping
- Sentinel node biopsy efficacy
- Melanoma research database and the International Staging System for Melanoma and database analysis
- Isolated limb infusion with cytotoxic drugs developed by the HOD
- Tumor mitotic rate as predictor of survival after melanoma-developed by Department

**Molecular and Clinical Genetics**
- Molecular genetics study of elite endurance athletes
- Molecular genetics study of motor neuron disease
- Genetic modifying factors for porphyria
- Gene discovery for prosopagnosia
- Multi-centre study prosopagnosia established
- Mitochondrial DNA and forensic applications
- Molecular genetics of thalassaemia
- Sydney Forensic Medicine and Science network established
  Equipment for Next Generation DNA sequencing purchased
**Neonatal Medicine**
- New methods for identification and management of newborn nutrition – PI for large cohort study
- Prevention of neonatal infection - CI in study across four SE Asian countries
- Prospective cohort study examining prevalence of gestational diabetes and neonatal outcomes in urban Vietnam
- RCT of early targeted indomethacin in managing preterm patent ductus arteriosus (PDA)
- Part of national surveillance study of severe neonatal jaundice
- Low systemic blood flow in preterm infants
- CI in Aust. Placental transfusion study and echocardiographic sub-study
- CI Effects of probiotics on late onset sepsis in very preterm infants
- RCT – ways to wean babies from CPAP
- Sydney Stillborn Study - multicentre case control study
- Causes, risks and recurrence of stillborn across NSW
- Hypoxic Ischaemic Encephalopathy and MRI
- Aust. Cochrane Neonatal Support Group

**Neurology**
- Epilepsy – incidence, seizure prediction
- PET imaging in Epilepsy, Neuroscience
- Subarachnoid Haemorrhage in Inner Mongolia
- Stroke, Aust. Stroke Clinical Registry
- InTensive blood pressure Reduction in Acute Cerebral Haemorrhage Trial.
- Sleep Apnoea Cardiovascular Endpoints
- Clinical Trials
- Excitability of sensory and motor axons in human peripheral nerve
- Axonal excitability in diseases of the peripheral & CNS
- Spinal reflex mechanisms
- Excitability of the motor cortex neurons
- Management of venous sinus dis.
- Management of -non-critical carotid stenosis
- Autonomic dysfunction
- Peripheral neuropathy
- Advanced management of MS
- Use of Botulinum in spasticity management
- MS Immunopathology, Tissue Proteomics & novel therapeutic targets
- Neuromyelitis Optica
- MS Brain Bank
- Neuro-otology
- Human balance
- IV immunoglobulin & inflammatory neuropathy
- Pathology and immunopathology of neuromuscular disorders
- Nerve excitability
- Quality of life in neuropathy
- Parkinson’s disease
- Dementia
- Sleep and Chronobiology

**Nursing**
- Faecal incontinence
- Biofeedback guided anal sphincter exercises in treatment of faecal incontinence
- RCT of two strengths of chlorhexidene for prevention of nosocomial infection in < 29 week neonates
- Multicentre study on nurse contribution to neonatal outcomes
- Effects of educational interventions in reducing noise levels in NICU & consequent effects on outcomes
- Implementation and pilot evaluation of an ED-based mental health nurse practitioner
- Outpatient vs Inpatient nursing treatment of chemotherapy patients
- Role of oncology nurse practitioner
- NICS national study on acute pain management in the ED
- PVITAL handover tool study re take-up, compliance, safety
- CIN X-ray audit
- Neuro-otology
- Sequelae of newly diagnosed epilepsy
- Adult epilepsy and mental health co morbidity
- Accelerated forgetting in epilepsy
- Impact of new Observation Chart and impact on vital sign ascertainment
- Clinical Emergency Response System continuous audit
FIG 6.2 Royal Prince Alfred Hospital Selected Research Overview

Microbiology Infectious Diseases
- MRSA
- Real-time PCR assay
- Quality and service delivery studies

Neuropsychology
- Memory in neurological patients
- Depression in epilepsy
- Influences on carer burden
- Processing chemical senses in patients with brain lesions

Nutrition & Dietetics
Nutrition, its effects and clinical/nutritional management of patients with:
- Rectal cancer
- Major upper GI surgery
- Chronic kidney disease
- Critically ill
- Ambulatory cancer
- Liver disease
- Clinical guideline development

University of Sydney

Centenary Institute of Cancer Medicine and Cell Biology
George Institute of Global Health
Woolcock Institute of Medical Research
Brain and Mind Research Institute
Heart Research Institute
<table>
<thead>
<tr>
<th>Obstetrics and Gynaecology</th>
<th>PET and Nuclear Medicine</th>
<th>Physiotherapy</th>
</tr>
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<tbody>
<tr>
<td>- Prediction and prevention of adverse pregnancy outcomes</td>
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<tr>
<td>- Pre-eclampsia – animal studies</td>
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<td>- Predictive algorithm for adversity at 12 weeks</td>
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<td>- Predictive model for stillbirth at 36 weeks</td>
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<td>- Management of multiple pregnancies especially monochorionic twin pregnancies</td>
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<td>- Diagnosis, management and aetiology of endometriosis</td>
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<td>- Venous thrombosis management and prevention</td>
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<tr>
<td>Multi-centre trials with PET-CT in cancer and neurosciences</td>
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<tr>
<td>- Kinetic modelling techniques and non-invasive quantification approaches in functional imaging</td>
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<td>- Image segmentation and computer assisted diagnosis</td>
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<td>- Content based image retrieval for diagnosis and learning</td>
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<td>- Mobile-health infrastructure</td>
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<tr>
<td>- Disease mapping of lymphoma and lung cancer with PET-CT</td>
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<tr>
<td>- Medical graphic avatar as part of a personalised health record</td>
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<tr>
<td>- Evaluation of new tracers in new PET tracers in neurodegenerative diseases and inflammation:</td>
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<tr>
<td>- Changes in mucociliary clearance of radioactive aerosols measured in normals, asthmatics and cystic fibrosis (CF) patients following inhalation of mannitol powder</td>
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<tr>
<td>- Effect of body position (sitting v.s. side-lying) during inhalation of nebulised aerosol in normal and CF patients</td>
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<tr>
<td>- RCT examining timing and deposition of nebulised therapies and patient position</td>
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<td>- RCT of hypertonic saline inhalation multicentre inpatient trial</td>
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<tr>
<td>- Maximising and assessing the efficacy of COPD patient pulmonary rehabilitation</td>
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<tr>
<td>- Cystic Fibrosis</td>
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</table>
**Plastic & Reconstructive Surgery**
- Development and testing of new plastic and reconstructive surgical techniques
- Giant anterior chest wall basal cell carcinoma
- Use of the microvascular anastomotic stapler in free flap surgery
- Secondary sternal repair
- Use of muscle flaps in pelvic exenteration surgery
- Predictable survival of DIEP flaps using CT angiography
- Evidence-based recommendations for negative pressure wound therapy

**Radiation Oncology**
- Motion management in lung cancer patients
- Radiobiology studies
- Fibre optic dosimeter development
- Breast radiotherapy dosimetry
- Dosimetry of low energy x-ray beams
- 3D gel dosimeters
- Electron beam dosimetry and Monte Carlo calculations
- High dose rate brachytherapy dosimetry
- Proton and charged particle therapy
- Optimisation of radiotherapy by biological imaging
- Radiobiology and radiotherapy
- Radiographic film dosimetry
- Clinical implementation of on-board imaging device

**Renal Medicine**
- Chronic kidney disease trials in treatment of hypertension
- Trial in polycystic kidney disease
- Trials in stage 4 chronic kidney disease – areas of bone, anaemia, diabetes
- Dialysis: Extended versus standard hours dialysis on outcome
- Neuropathy and haemodialfiltration
- Use of newer agents in phosphate, calcium, PTH control
- Access pathways and maintenance
- Quality of life studies in dialysis patients
- Transplantation: mechanisms of acute and chronic rejection
- Mediators of ischemia reperfusion injury
- Alloreactivity and graft outcomes
- Post transplant diabetes and bone disease
- Trials of immunosuppressive agents

**Rheumatology**
- Biological drugs in rheumatoid arthritis
- Synovial fluid crystal analysis
- Secondary prevention of osteoporosis
- Back pain
- Clinical epidemiology
- Pain management in inflammatory arthritis
- Musculoskeletal ultrasound
- Early arthritis

**Sexual Health**
- HIV clinical management and epidemiology
- STI clinical management and epidemiology

**Speech Pathology**
- Tracheostomy management in the intensive care unit
- The effectiveness of enriching the acute stroke unit environment in the first few days post ischaemic stroke
### Surgical Outcomes Research Centre (SOURe) & Colorectal Surgery
- Surgical outcomes, quality of life and supportive care needs
- Development and testing of new surgical techniques
- Development and testing of methods to evaluate patient outcomes
- Description of health service utilisation
- Cost-effectiveness of surgical procedures
- Patient treatment preferences
- Develop/evaluate decision tools
- Methods studies
- Clinical trials in surgery
- Generate evidence for surgical effectiveness
- Review of evidence about surgical effectiveness

### Transplant Services
- Basic Immunology of allograft tolerance and rejection: The Collaborative Transplantation Lab is funded by 3 current NHMRC Grants, a National Heart Association Grant and several others. The role of Innate Immunity in rejection and tolerance, Ischaemia-reperfusion injury in brain death using several model systems. These studies have enormous potential for translation into the clinic. The teams have produced numerous publications in journals including JCI and American Journal of Transplantation
- Clinical Transplantation: multicentre international trials (currently n=5) examining immunosuppression in transplantation, plus local trials (n=4), diet and exercise to prevent diabetes after transplantation, diagnosis and monitoring of diabetes after transplantation, immunological monitoring after kidney transplantation
- Epidemiology: Through collaboration with the ANZDATA Registry, the team have focussed on outcomes after kidney transplantation and have published >15 papers in the past 5 years in this field. Current efforts are in re-examining the current system of organ allocation through modelling

### Tissue Pathology & Diagnostic Oncology
- Melanoma: risk, causes, diagnosis, prognostication, treatment
- Breast cancer: predictive and prognostic biomarkers, new therapeutic targets, phyllodes tumours
- Pancreatic cancer: precursors, predictive and prognostic biomarkers
- Prostate cancer: precursors, prognostic markers
- Liver disease: transplant pathology and hepatocellular carcinoma
- Head and neck cancer
- Lung cancer
- Colorectal cancer
Research at Concord Hospital

Concord Hospital is a principal referral hospital linked with the University of Sydney. Figure 6.4 provides a visual representational overview of the research interests of selected departments of the Hospital. More detailed information is available on the District's website and in the Research Report.

The Concord Research Office processed 168 governance submissions and 124 ethics submissions during 2011 (Figure 6.3). All Concord Hospital research involving animals is processed through the RPA Research Office, so this figure underestimates the research applications. All major research grant funding applications from Concord are processed through the ANZAC Institute and the University of Sydney. Governance submissions represent all studies authorised to be conducted in the Concord Zone, including at Concord, Sydney Dental Hospital and Community Health. The Ethics Submissions include some studies in which the local district does not participate.

**Figure 6.3 Concord Ethics and Governance Submissions 2008-2011**

![Concord Hospital Ethics and Governance Submissions 2008-2011](image)

On the campus of the hospital is the ANZAC Research Institute, a major independent biomedical research institute with a primary focus on ageing and translational research. ANZAC aims to coordinate the highest quality innovative research at all levels including public and population health, clinical, translational, molecular physiology and cell and molecular biology. The ANZAC Institute has major groups in andrology, biogerontology, bone biology, burns research and reconstructive surgery, cancer & immune therapeutics, dendritic cell biology, geriatric epidemiology, Northcott Neurobiology Laboratory, vascular biology and veterans’ epidemiology. The ANZAC Institute has a strong commitment to translational research and supporting hospital-based research.

The Centre for Education and Research in Ageing (CERA) links with the ANZAC Institute, the aged care services and general hospital services. Its research includes ageing in men, liver disease and ageing, dementia, medications, disability and healthy ageing.

The Asbestos Disease Research Institute (ADRI), located on the Concord Campus, is the world’s first stand-alone research facility dedicated to asbestos-related diseases. Through translation research projects, the ADRI aims to improve the diagnosis and treatment, and to enhance the quality of life of those affected by asbestos-related diseases. The ADRI has strong links with departments involved with thoracic oncology at RPA (Baird Institute) and at Concord Hospital. It is also connected to the Cancer Institute NSW through the Australian Mesothelioma Registry. ADRI’s purpose built biobank collaborates with the major teaching hospitals in the Sydney area and is also linked to the Australian Mesothelioma Registry at the CINSW.

Hospital researchers may have strong links to other medical research institutes, partners and universities for research collaboration and education.
### Fig 6.4 Concord Hospital Selected Research Overview

#### Anaesthetics & Pain Management
- Anaesthetic anaphylaxis
- Prevalence of postural hypotension in a Chronic Pain Clinic
- Characteristics of patients receiving gabapentin for neuropathic pain in a Chronic Pain Clinic
- Using capnography as a scale for grading ease of mask ventilation
- Use of hyaluronidase in sub-Tenon’s block for cataract surgery

#### Andrology
- Detection of sports doping
- Male hormonal contraception
- Dihydrotestosterone (DHT) efficacy and safety study
- Long term effects of androgen deprivation therapy in the treatment of prostate cancer
- Healthy male ageing

#### Aged Care and Rehabilitation (ANZAC and CERA collaboration)
- Concord Health and Ageing in Men (CHAMP)
- Biogerontology and ageing liver
- Dementia and brain imaging
- Role of sirtuin enzyme and age-related disorders
- Ageing and medications
- Healthy ageing through longitudinal survey data
- Adult intellectual disability/complex disability

#### Anatomical Pathology Department
- Proteomic testing of colorectal cancer
- Ultrastructure of the detrusor muscle
- Bacterial colonisation of burns wounds
- Ultrastructural changes in renal biopsies in pre-eclampsia and diabetes
- Expression of specific proteins in different types of malignant mesothelioma

#### Burns Unit
- Enhancing cultured epithelial autografts
- Three dimensional skin tissue bio-engineering
- Reducing patterns of wound infection and scarring
- The Bi-National (Australia and NZ) Burns Registry
- Addressing emotional trauma for patients and families experiencing severe burns injury
- The use of honey in the treatment of burns wounds
- Activity of silver in burns wound dressings

#### Cancer
- Proteomics and colorectal cancer
- Early molecular indications of Cancer Cachexia Syndrome (CCS)
- Patient differences in response to anti-cancer drugs
- Evidence-based guidelines for the diagnosis/treatment of mesothelioma
- Novel markers to assess diagnosis and prognosis of malignant mesothelioma
- Novel targets - treating mesothelioma
- Quality of life of patients suffering malignant mesothelioma and their carers
<table>
<thead>
<tr>
<th>FIG 6.4 Concord Hospital Selected Research Overview</th>
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<tbody>
<tr>
<td><strong>Cardiology</strong></td>
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<tr>
<td>- Platelet activation in coronary disease</td>
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<td>- Modelling coronary shear stress</td>
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<td>- Inflammatory pathways in cardiovascular disease</td>
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<tr>
<td>- Cyclosporin A effects on lipoprotein metabolism</td>
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<td>and protein secretion</td>
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<td>- Cellular transport pathways regulating secretion</td>
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<td>of apolipoprotein E</td>
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<td>- National registry of unstable coronary artery</td>
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<td>disease (CONCORDANCE)</td>
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<td>- Novel cardiac rehabilitation programs (CHOICE)</td>
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<tr>
<td>- Clinical outcomes after pulmonary embolism and</td>
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<tr>
<td>infective endocarditis</td>
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<tr>
<td>- Cardiac effects of antipsychotic medications</td>
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<tr>
<td>- Cardiac effects of hiatus hernia</td>
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<tr>
<td>- OCT and IVUS imaging of coronary arteries</td>
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<tr>
<td><strong>Colorectal Surgery</strong></td>
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<tr>
<td>- The Colorectal Cancer Database</td>
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<td>- Proteomics in colorectal cancer staging</td>
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<td>- Care and education for patients in managing</td>
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<td>their stoma</td>
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<td>- Laparoscopic surgery</td>
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<tr>
<td><strong>Diagnostic Pathology Unit</strong></td>
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<tr>
<td>- Research collaborations/support of major studies</td>
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<tr>
<td>- Use of serum Cystatin C in detection of renal</td>
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<td>failure</td>
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<td>- Biomarkers of alcohol-related disease</td>
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<td>- Hypercoaguability</td>
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<td>- Platelet function</td>
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<tr>
<td><strong>Drug Health Services</strong></td>
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<tr>
<td>- Drug and alcohol treatment in rural and urban</td>
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<td>indigenous communities</td>
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<tr>
<td>- Alcohol harms and interventions</td>
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<tr>
<td>- Research into analgesic use</td>
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<tr>
<td>- Management of acute pain in Opioid Substitution</td>
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<td>Therapy (OST) patients</td>
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<tr>
<td><strong>Endocrinology and Metabolism</strong></td>
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<tr>
<td>- Breast and prostate cancer metastasis to bone</td>
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<td>- Glucocorticoid actions on bone</td>
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<tr>
<td>- Genetic basis for bone loss</td>
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<tr>
<td>- Hormonal regulation of bone loss</td>
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<tr>
<td>- Novel markers in bone turnover</td>
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<tr>
<td>- Management of osteoporotic fractures</td>
</tr>
<tr>
<td>- Prevalence of diabetes, obesity and cardiovascular disease in patients with serious mental illness</td>
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<tr>
<td>- The Metabolic Rehabilitation Diabetes Program</td>
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<tr>
<td><strong>Gastroenterology</strong></td>
</tr>
<tr>
<td>- Role of helicobacter pylori</td>
</tr>
<tr>
<td>- Applications of advanced endoscopic technology</td>
</tr>
<tr>
<td>- Inflammatory Bowel Disease (IBD)</td>
</tr>
<tr>
<td>- Colorectal cancer</td>
</tr>
<tr>
<td>- Measuring liver fibrosis using fibroscan</td>
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<tr>
<td>technology</td>
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<tr>
<td>- Hepatitis</td>
</tr>
</tbody>
</table>
FIG 6.4 Concord Hospital Selected Research Overview

**Haematology**
- Clinical trials for patients with myeloid leukaemia, lymphoma and myeloma
- Haemostasis, including trials of new anticoagulation therapy, and assays for hypercoagulability
- Melphalan pharmacokinetics in bone marrow transplant
- Dendritic cell biology

**Immunology**
- Primary Immune Deficiency (PID) Register
- Efficient use of IV immunoglobulin (IVIg)
- Antibody deficiencies with normal IgG
- Association between PID and cancer
- Genetic basis for PID
- Lupus
- Use of intracellular phosphoproteins

**Ophthalmology**
- Orbital inflammatory syndrome
- Oculoplastic surgery

**Microbiology & Infectious Diseases**
- Epidemiology and testing of antibiotic resistance
- Nosocomial infections
- Parasitology
- International and national surveillance programs

**Molecular Medicine/Northcott- ANZAC**
- Inherited peripheral neuropathies
- Motor Neurone Diseases
- Parkinson's Disease
- Myasthenia Gravis
- Zebra Fish Models to study Machado Joseph Disease (MJD) and Motor Neuron Disease (MND)

**Neurology**
- Stroke prevention
- Muscular dystrophy
- Parkinson's disease treatment
- Hemi-facial spasm and episodic ataxia
### FIG 6.4 Concord Hospital Selected Research Overview

#### Nursing
- Management of pain after elective joint replacement
- Patient and carer experience in the Burns Unit
- Patient and carer experiences after commencing haemodialysis
- Patient experience of surgical management of colorectal or upper GI cancer
- Optimal time for blood collection following haemodialysis
- Patient and family experience after emergency admission to hospital of geriatric patients
- Peristomal skin complications
- Specialising the older confused patient
- Research Skills Development Project

#### Nutrition and Dietetics
- Malnutrition and cancer
- The prevalence of cancer patients using alternative diets
- Patients' preferences for oral nutritional supplements

#### Orthopaedics
- Total knee replacement surgery
- Rotator cuff injury repair
- Methods of functional hip navigation for total hip replacement

#### Pharmacy
- Pain management in frail older people
- Managing medicines in older people
- Ethnic differences in drugs response cancer pharmacology
- Low back pain research
- Electronic medication management and hospital pharmacy practice
- Medication safety and pharmaco-epidemiology
- Herb-drug interaction database
- Clinical trials support

#### ICU
- IV fluid resuscitation in critically ill patients
- Procalcitonin as a guide to antibiotic therapy in ICU
- Glycaemic control in ICU patients
- Renal replacement therapy in critically ill patients
- Early parenteral nutrition versus standard care in the critically ill patient
- Surveys and registries

#### Physiotherapy
- Chronic lung disease
- Patient recovery after surgery
- Balance and peripheral neuropathy
- Massage and shoulder pain

#### University of Sydney and other higher education centres
### FIG 6.4 Concord Hospital Selected Research Overview

#### Radiology
- Significant contribution to and collaboration with research studies for example: using CT in haematology and oncology; liver disease biopsy; memory and hippocampal structure; coronary bypass graft patency
- X-ray radiographic considerations for bariatric emergency department patients
- Skin dose x-ray study

#### Renal Medicine
- Haemofiltration in patients with end-stage kidney disease
- Iron-deficiency anaemia in chronic kidney disease
- Treatment of ANCA-associated vasculitis
- Aspirin and fish oil in prevention of thrombosis in chronic kidney disease

#### Thoracic Medicine
- Free-divers lung capacity
- Ventilatory control in Parkinson’s Disease
- Predictive markers for sleep apnoea severity
- Long term outcomes in patients with Obstructive Sleep Apnoea (OSA)
- COPD and emphysema care
- Clinical trials in asthma, COPD, interstitial lung disease, mesothelioma and bronchiectasis

#### Thoracic Oncology (ADRI) collaborations with RPA, Concord and CINSW
- Epidemiology/ prevention of asbestos related diseases
- Evidence-based guidelines for diagnosis & treatment of malignant mesothelioma
- Novel markers to assess diagnosis and prognosis of malignant mesothelioma
- Novel targets for treatment of malignant mesothelioma
- Quality of life of patients suffering malignant mesothelioma and their carers.

#### Urology
- Overactive bladder
- Role of bladder function tests in elderly
- Prostate tissue bank
- Androgen deprivation therapy for advanced prostate cancer

#### Vascular Medicine
- Significant contribution to and collaboration with research studies through use of vascular ultrasound examinations on enrolled patients
- Inferior vena cava filter trial
Population Health

Population Health research is broadly defined as ‘the investigation and analysis of factors that influence the health status of groups or whole populations, as well as the testing and evaluation of policies and interventions to improve population health outcomes’.

Population Health, a division of both Sydney and South Western Sydney Local Health Districts (SLHD and SWSLHD), conducts research on the many personal, local and global factors that affect health and illness. The research informs policies and programs that aim to protect and promote the health of the local population. Services in Population Health work with partners to deliver a comprehensive range of high quality, evidence-based health services to the local population and to achieve equity of health status and health service utilisation across the population.

Between 2007 and 2011, research conducted by the various services in Population Health resulted in 192 publications in peer reviewed journals, presentations at 185 national and international conferences and attracted over $11 million in external funding (Figure 6.5).

**Figure 6.5 Population Health Research Output, 2007-2011**

Population Health is comprised of the following units:

- **Population Health Directorate** undertakes research with a focus on healthy urban development, disadvantaged communities, and health equity;

- **Health Promotion Service** has research priorities in community-based programs that improve and maintain population health and reduce inequalities in health outcomes, primarily in the areas of physical activity and nutrition, tobacco control and fall injury prevention;

- **Public Health Unit** has a focus in research for preventing ill-health through immunisation, investigating disease outbreaks, reducing risks from infectious diseases and environmental hazards, and evaluating programs and compliance with legislation;

- **Centre for Research, Evidence Management and Surveillance** conducts research in the areas of environmental health, built environments, health equity and in health services;

- **HIV and Related Programs** conducts research to guide the development and implementation of local programs in the prevention of blood borne and sexually transmissible infections and in improving the provision of sexual health clinical services;
• *Multicultural HIV/AIDS and Hepatitis C Service* performs research to inform the development and implementation of a range of HIV/AIDS and hepatitis C initiatives with, and for, culturally and linguistically diverse communities;

• Centre for Health Equity Training, Research and Evaluation conducts research and evaluation of policies and programs that aim to achieve health equity, and to develop the capacity of the health system to more effectively address health equity through policy and program development; and

• NSW Refugee Health Service conducts research to inform policies and programs that aim to protect and promote the health of refugees and people of refugee-like backgrounds living in NSW.

**Mental health research**

The Concord Centre for Mental Health is a major mental health service in SLHD with association with the University of Sydney. Key research interests include the following:

• investigating the high rates of premature mortality in psychotic patients;

• investigating factors associated with treatment resistance, poor outcome and high rate of relapse in patients with psychosis;

• cardiometabolic health in psychosis;

• fluoxetine in the treatment of children and adolescents with autism;

• persistence of symptoms and mediators of outcomes in children with ADHD;

• medication use in aged care facilities;

• screening depression in aged care facilities;

• clinical handovers; and

• mental health nursing studies

**Community health research**

The Community Health Service conducts and participates in a range of research programs including paediatrics, sexual health and allied health. The Sexual Health Service research includes HIV clinical management and epidemiology and STI clinical management and epidemiology

**Oral health research**

SLHD and SWSLHD Oral Health Service (OHS) including the Sydney Dental Hospital (SDH) have major research interests across the spectrum of oral health. The service is most closely linked to the Universities of Sydney, NSW and Newcastle. Major research interests are as follows:

• role of pit and fissure sealants in high risk populations;

• bisphosphonates and oral health;

• prevention of dental caries in young children living in metropolitan Sydney;

• inception, development and delivery of an educational program for international dental graduates to address a rural shortage of public dentists in the state of NSW – Australia;
• oral health status and predictors of tooth loss among SLHD and SWSLHD adults;
• HIV and oral health;
• development of a midwifery initiated oral health program for pregnant women;
• preventive / interceptive orthodontic research;
• oral health and systemic health;
• forensic odontology;
• chronic and post endodontic pain;
• long term success of pulpotomy treatment in an adult population;
• orthodontic loading – finite element analysis;
• new treatment modalities for correction of orthodontic malocclusions;
• root resorption; and
• obstructive Sleep Apnoea.

Drug health research

The Drug Health Service Research Unit for SLHD is based at RPA in conjunction with the University of Sydney and the National Drug and Alcohol Research Centre, University of New South Wales. The University of Sydney Discipline of Addiction Medicine based at RPA supports state-wide teaching and research.

Drug Health Services research includes:

• early interventions for drugs and alcohol;
• molecular mechanisms of tissue injury;
• treatment of substance use disorders;
• development of new therapies;
• evaluation of current services;
• collaboration with clinical and administrative departments; and
• collaborations with national and international groups.
Research governance

The District Level
The governance structures of research are designed to promote and support high quality research that is bound by the principles of respect for human beings, justice, beneficence and integrity.

Each level of the organisation has responsibility for research. The research governance structure is illustrated in Figure 6.6.

The Board is ultimately responsible for ensuring processes and governance structures embody the principles of research merit and integrity. The Board Committee on Education and Research has delegated responsibility for planning, ensuring governance and promoting research excellence.

The Chief Executive has the authority to ensure the health service adheres to governance requirements and supports research.

The recently established position of District Research Director provides advice to the Chief Executive on research matters, promotes research, encourages education and mentoring, provides a conduit between the administration and researchers as required. The Director, with General Managers, has responsibility for the operation of the two Research and Development Offices (Concord and RPA).

At each of RPA and Concord, a Director of Research has been appointed. Concord in addition has a research committee with a brief to facilitate and promote research. A research committee has been established at RPA to implement this plan.
The Research Offices at RPA and Concord, through their subcommittees, evaluate, monitor and process ethics applications, ensure governance requirements of research are met and develop policy in relation to the ethical conduct of research. The following figures (Figures 6.7 and 6.8) outline these governance arrangements.

**Figure 6.7 RPA Research Governance**

*Research Office, Royal Prince Alfred Hospital*

**Figure 6.6 Research Governance**

*Organisation Structure – Research Governance in Sydney Local Health District (SLHD)*
Planned research facility developments in or near to Sydney Local Health District

The Charles Perkins Centre: Centre for Obesity, Diabetes and Cardiovascular Disease (CODCD)

In close proximity to the RPA campus, The Charles Perkins Centre for Obesity, Diabetes and Cardiovascular Disease is a major Sydney University initiative which brings together highly diverse researchers in a community-oriented collaboration mirroring national health and science priorities. Its mission is the prevention and control of obesity, diabetes and cardiovascular disease. Collaborations will be encouraged “pan-University”, nationally and internationally. It will provide a major boost to research in the SLHD, with over 800 researchers envisaged as being located on/near the RPA campus and interacting and collaborating with the clinical and community services.

The initial research agenda will include a major population cohort study, studies assessing risk prediction, obstacles to healthy behaviour, the links between food, body fat and health and interventions evaluation.

The Charles Perkins Centre plans to work in partnership with SLHD for the provision of research-related health services. This may include for example secondment of imaging staff, nursing staff and other identified health-related services required to support research projects. The health service will participate in establishing and assisting in appropriate clinical governance arrangements.

The six-storey building will have major laboratory facilities (400 wet spaces and 400 dry), procedure rooms, gym equipment, imaging, 6-7 research beds, undergraduate teaching facilities and an animal house. It will be supported by clinical trials and investigator-driven research. The building, adjacent to RPA and the Centenary Institute, is scheduled to open in early 2014.
The Chris O’Brien Lifehouse at RPA

The Chris O’Brien Lifehouse at RPA is planned as a world-class cancer treatment, teaching and research facility providing integrated care to patients and carers. The key concept is to provide a supported environment for cancer care so that unwell patients do not have to navigate the healthcare system alone. It will combine all facets of clinical care, including surgery, medical and radiation oncology, research as well as wellness and support services on an ambulatory and outpatient basis. One stated research goal is to increase the number of patients enrolled in clinical trials from 8% to 20%.

The Centenary Institute undertakes cancer-related research and has a partnership agreement with Lifehouse. A floor of the Lifehouse building will be dedicated to research. Dedicated research facilities are scheduled for Stage 3 of the building—perhaps eight to ten years away. The first stage of the Lifehouse building, ambulatory facilities, is scheduled to open in 2013.

North West Precinct – Mental Health

With the redevelopment of the North West Precinct at RPA, seven new mental health research beds will be built as a part of a large new mental health inpatient service.

A key issue for SLHD is to ensure the integration of research functions and facilities into new health service building and service developments.
7. Key Strategic Issues

The research role of Sydney Local Health District

SLHD’s research role is pivotal to its overall mission to support high quality health care, improved health status and improved quality of life. Research is viewed as a central driver of health service quality and innovation.

In SLHD it is expected that all health services will undertake research activities that encompass service evaluation, clinical audit, quality improvement, evidence-based practice and translational research. The health service also strongly supports the conduct and enhancement of relevant broad-ranging, high quality clinical trials.

Clinical research is undertaken in most departments within the two major hospitals of the SLHD and is developing in specialty areas of Balmain and Canterbury Hospitals and in community-based services. Biomedical and basic research is undertaken in RPA in selected departments, in particular basic research with strong translational elements.

Some respondents of the research plan survey believed that over the past 20 years, there has been a shift, particularly in regards to basic and biomedical research, away from hospitals to the Medical Research Institutes and the university, with translational research continuing to be more clearly the mandate of the hospital. This perception is largely a result of federal and state funding policies which provide significant incentives for MRIs and the universities to administer peer reviewed grants. Strong research governance arrangements have consequently evolved within the MRIs and the university and these have not until recently been mirrored within the health service. In fact, the research still goes on in the hospitals and in associated laboratories but is badged as university research for funding purposes.

However, by 2014, under the national health reform initiatives, there will be similarly strong incentives for the health services to badge and administer research.

Further, it is evident that research themes congruent with those of the Institutes have frequently been more solidly supported. A space and “a place” at the Institutes has thus been highly prized but has been increasingly less available as space is limited.

The research profile of the Sydney Local Health District

Communicating the research endeavour and outcomes to the broad community, the staff and the national and international research community benefits both the health service and its researchers. The profile and reputation of research-related organisations and of researchers themselves is of significant importance in terms of improving the translatability of research findings, gaining research grants and achieving publications.

During the consultation period it was considered that the health service receives inadequate recognition for its research role and that both the University and the Institutes have been significantly better at profiling their researchers, research findings and their role in supporting research than the health service. The university and the MRIs have strong policy, fundraising and financial incentives to capture their research effort and to promote their profile. The Health Service, in contrast, has, to date, had little incentive to promote its research effort and output. Consequently, some commentators have erroneously suggested that the Health Service has a marginal role in research when indeed, many esteemed researchers are directly employed by the Health Service, much research takes place within the SLHD hospitals and the health service also contributes and collaborates extensively with the Medical Research Institutes.
Critical issues in improving the transparency, profile and research-positive culture of the SLHD include:

- the development of revitalised Hospital and District websites which feature research;
- the production of annual or biannual reports on research;
- exploring the potential use of social media for research profiling;
- counting, reporting and profiling the research effort and output. This includes the number of peer-reviewed grants, publications, awards, postgraduate students. This may require a series of agreements with the university and the local MRIs;
- a strong media policy in relation to showcasing research and researchers. This may include regular media publicity featuring District health research highlights;
- fundraising in relation to the research profile;
- ensuring senior staff having KPIs directly related to supporting research;
- establishing local policies and procedures positively supporting research;
- assessing the most useful "brands" for research profiling. Opportunities include:
  - “Sydney Health”; a name that captures the university, the Health Service, hospitals, public health and primary care;
  - “RPA Research”, building on the community name and profile derived from history and the TV program; and
  - using the term “academic medical/health centres” rather than hospitals which infers that research is pivotal to care.

The NSW Health and Medical Research Strategic Review (2012) notes the importance of a research-positive culture and the profiling and support for research at every level of the health service organisation.

**The relationship between the Health Service, Sydney University, other universities and the Medical Research Institutes**

The interface between the University of Sydney, the Health Service and the Medical Research Institutes is complex, historically defined, inconsistent but very important to research development. There are now many senior clinician/researchers with appointments spanning institutes, the university, and sometimes more than one health service and with international collaborations and research grants.

Interface relates to conjoint appointments, supervision of students and postdoctoral researchers, university-based and clinical teaching, sponsoring of conference and international meeting attendance, and the funding and support of the core processes of research. Some university-funded positions within the hospitals were initially strategically placed however, over time there has been an uneven allocation of these positions.

The "rules of engagement" between these interdependent parties is ill-defined and confusing, with some overlap of responsibilities and activities. Yet, harnessing the combined capabilities of these enterprises is integral to ensuring the best support for the development of quality research in SLHD. Indeed, there may be some advantages to research that derive from better clarifying these roles and ensuring positions accord with strategic research priorities.

The District Health Service is keen to support the positive development of the Charles Perkins Centre, the basic and translational cancer research associated with the Chris O’Brien Lifehouse at RPA and the mental health research beds provided in collaboration with the University of Sydney. The District is also keen to support a more formal structural establishment of a research hub within the District.
The SLHD has strong links with universities other than Sydney University, particularly in relation to nursing and allied health disciplines.

**The Central Sydney research hub development**

In SLHD, there is in existence the cluster of the University of Sydney, two principal tertiary facilities in RPA and Concord and several highly eminent independent or semi-independent medical research institutes. The opportunity exists to develop one very large, major broad-based research hub or precinct with national and international standing, providing research leadership.

The NSW Health and Medical Research Strategic Review (2012) has recommended and devised positive incentives for the establishment and alignment of research hubs across NSW. One of the eight research hubs is “Central Sydney”. This hub will be the largest in NSW. Funding will be provided to assist research hubs to develop collaboratively, to establish strategic plans, to more effectively use resources, and to strengthen links between teaching and healthcare practice. Incentives to collaborate have been built into the NSW Medical Research Support Program.

The SLHD also has a strong interest in fostering such collaboration as this would significantly increase the profile and standing of local research and lead to improvements in patient care and outcomes through better research translation.

Potential collaborations could include the sharing of technical equipment and laboratories, translation, encouraging innovative models of care, education and thereby developing local, national and potentially international leadership. Such a strong collaboration could present a coherent and shared message to government, the private sector and the community.

The name of this research hub would need to be agreed as a part of the collaborative enterprise.

**Health Service corporate support of research**

In order to better support research a number of corporate health service matters need addressing. These include:

- ensuring senior executives have key performance indicators which encompass research-related outcomes;
- establishing and publishing local metrics of research output;
- working with researchers to improve IT connectivity, resolve selected data storage problems, and assess the means of best providing technical support for complex research-related IT issues;
- ensuring efficient and transparent grant and research-related financial administration;
- ensuring efficient recruitment processes to research positions;
- ensuring the availability of position descriptions and classifications within health services that suit research;
- ensuring a transparent approach to Intellectual Property and commercialisation; and
- developing very simple hospital and departmental (business) plans for research based on this Strategy.

**Hospital and Health Service governance and infrastructure**

The SLHD has established a committee of the Board entitled the Education and Research Committee, the central purpose of which is to foster the District’s research and education. The District has also developed the position of Research Director, whose key responsibility will be to develop and support research across the District and to ensure the implementation of the District’s research strategy.
Hospital-based research has limited support and infrastructure which is available to researchers in the MRIs or the university. Because of the size of the hospital, this issue is particularly evident at RPA Hospital. However, some of the issues are similar at Concord and to a lesser extent at other hospitals and in community health. There is arguably a need for research infrastructure, which actively supports hospital-based, community or primary care research.

Such infrastructure could include, for example, an operational director of research, a director/manager of clinical trials, a business/finance manager (particularly to assist with clinical trials) and access to media and communications staff. Some of these positions could be fractional.

Infrastructure would also include having hospital-based and community health research committees with clear goals, agendas and action plans. Infrastructure desired for the provision of practical support to researchers includes administrative support, biostatistician support, research mentoring, grant administration, and business managers.

**Research and Development offices**

The Human Research Ethics Committees (HRECs) administered by the two SLHD Research and Development (R & D) Offices at RPA and Concord are two of the largest, most highly regarded and experienced in NSW. Many researchers expressed a high degree of appreciation for the research offices.

However, research review processes have become time-consuming, laborious and involved, partly as a result of the NSW Health policy which requires separate assessment of research ethics and governance. Recent policies have sought to ascribe essential governance responsibilities to the health service institution through the Research Governance Officers, leaving ethical review, monitoring and reporting to the HREC Executive Officers. The managers of the RPA and Concord Research Offices are also the executive officers of the RPA and Concord HRECs and the Research Governance Officers for their respective sites.

Both Research Offices have implemented changes towards a single scientific and ethical review of multi-centre research. Both HRECs have been accredited as Lead HRECs by NSW Health since 2007 and were recently certified for HoMER (the NHMRC’s Harmonisation of Multi-centre Ethical Review).

The consultation period supported a review of the adequacy of resources of the two Research Offices.

This issue has also been highlighted in the NSW Health and Medical Research Strategic Review. The review recommends further reform of the site specific authorisations, improving research ethics and governance data collection and analysis, including research ethics and governance metrics in LHD performance management and appropriately resourcing LHD research offices to undertake their required function. The Office of Health and Medical Research will take a strong interest in these issues and will work closely with research offices to ensure effective processes and resources are provided.

**Clinical trials**

The excellent clinical and research quality base in the SLHD attracts significant investment from pharmaceutical companies as well as supporting investigator-led trials. Clinical trials investigate the safety and efficacy of medications, medical devices, or changes in models of care delivery. The Clinical Trials pharmacy at RPA in mid 2011 supported over 140 active clinical trials of new drugs and the Concord pharmacy over 80. Beyond this active number there were numerous ongoing trial-related studies. There are a great many potential advantages to the health service of fostering an environment where increasing numbers of relevant patients are enrolled into high quality clinical trials. However, facilitating this may require a review of the pharmacy resources at each hospital and improving the means of readily employing clinical trial nurses and co-ordinators.
Attracting high quality pharmaceutical company clinical trials is considered important for a number of reasons:

- it allows hospital patients access to new treatments and evidence;
- provision of study drugs saves the hospital pharmacy large sums of money which would normally be spent on supplies; RPA estimates this saving is in the vicinity of $2 million per year and over a $1 million at Concord e.g. cancer drugs, Hep B antivirals;
- the ethical agreements with the hospital require that relevant drugs be supplied to the patient at least until the drug is PBS-available under the Compassionate Access Program;
- it provides funding for clinical trial co-ordinators;
- it attracts high quality research-clinicians and promotes academic best practice; and
- it allows non-sponsored clinical trials which are investigator-led to be supported as an important balance to industry-led trials.

The opportunity costs of investing in clinical trials can be best assessed in a business case. Such a business case could consider how to market and capitalise on the District’s research quality and reliability, particularly in competition with emerging Asian markets. It could also consider the merits of combining pharmacies associated with the health service, the MRIs and the university more collaboratively. The case would also investigate opportunities to establish stronger links with industry and means of improving the efficiency of compliance requirements. A key requirement would be to link closely with the NSW Ministry of Health Office of Health and Medical Research; particularly with its newly developed Clinical Trials unit which will act as a contact point, develop policies, make linkages with networks and take action to increase patient enrolments in clinical trials. Further, the OHMR will act to improve the efficiency of compliance assurance for clinical trials.

One option is to adopt as a KPI the recruitment of relevant patients into quality clinical trials, with an emphasis on investigator-led trials. Another approach would be to provide funding support for each clinical research unit’s staffing. Again, the opportunity costs and resultant revenue would need to be calculated.

The opportunities for funding new R & D hardware in diagnostics, imaging and related technology areas should also be assessed.

The RPA and Concord Hospitals have identified the need for a Clinical Research Centre- a separate facility that could house participants in early clinical trials (Phase I and II) and volunteers in clinical pharmacology (e.g. pharmacokinetic) research. The NSW Ministry of Health Office of Health and Medical Research has indicated an interest in supporting collaboratively developed early phase clinical trials capacity in NSW.

**Supporting clinician-researchers and emerging researchers**

Positively supporting researchers is a key priority for the District. Researcher support needs identified in the planning process include:

- education on research methods. The most pressing need identified was for research methods appropriate to a clinical nurse consultant (CNC), allied health practitioner, senior dental clinician, registrar or prevocational trainee as a means of encouraging research activity. However, ongoing educational opportunities are fundamental to researcher development at all levels of sophistication;
- mentoring for young and developing researchers;
- access to research tools such as SPSS/SAS, NVIVO, survey development programs or specialist software programs;
- support for staff involvement in scientific or medical policy and research forums;
• provision of small grants to undertake basic tasks such as employing interpreters, or to aid participant recruitment, ring participants etc, where medical trust fund access is not available; and

• ongoing access to library resources including mediated literature searching.

Providing support to a “new generation” of excellent, leading edge researchers is also important. There are a range of options for providing such support. Many of these options could be undertaken in collaboration with partners and with national and state funding bodies. Other strategies could potentially be funded locally or through fundraising.

Opportunities include:

• facilitating the provision of scholarships for talented registrars, clinical nurse consultants, senior dental clinicians and allied health staff wishing to undertake doctoral research within the health system. In collaboration with the Commonwealth, where applicable, this could be funded as tax free scholarships for three years at a level roughly equivalent to their likely income within their relevant professional area. This could be conjointly funded by the universities, the Commonwealth Department of Health and Ageing/NHMRC and the NSW government/NSW Health. As well as keeping quality clinician/researchers in the hospital, this would promote high quality research, leverage these clinician-researchers to attain peer reviewed grants and publications and promote research within strategically defined healthcare areas. The presence of doctoral students significantly enhances the research-positive culture of the clinical environment. The Cancer Institute has successfully developed a relevant model;

• guaranteeing tenured research positions in the hospitals to overcome the uncertainty and disincentive for medical and dental researchers to remain in the hospital system when funded only by short-term competitive grants, fellowships or fractional appointments (0.6 or 0.4) for staff interested in pursuing research;

• grants for small to medium research projects provided after application and a peer review process;

• providing “sabbaticals” for existing researchers/clinicians or scholarships for research purposes;

• supporting staff undertaking research to attend conferences/scientific meetings e.g. assisting with travel grants and covering conference costs;

• providing local opportunities for young researchers to present findings; and

• ensuring the research legacy of the health service is made available to the staff through annual research weeks at Concord, RPA and the Sydney Dental Hospitals, poster display days, support for the young researcher prizes, three minute presentations.

The NSW Health and Medical Research Strategic Review have a range of strategies which support these goals (see Appendix 1). Further, some of these projects can be strategically supported as part of the incentives towards research outlined in the National Health Reform from 2014 onwards.

**Supporting interdisciplinary, nursing, allied health and oral health research**

Interdisciplinary research that is relevant and translatable is a particular opportunity within the health service so as to design and develop high quality, innovative models of care. Although nurses provide around 43% of the health workforce, nursing research sometimes has low visibility. Nurses may be integral to the conduct of clinical trials, but they are rarely involved in generating the related research questions. There is reduced opportunity for nursing and allied health research leadership and mentoring in clinical settings because of the relatively lower number of nurses with higher level research degrees. PhDs are not common, and those with Masters may choose vocationally-focused course work rather than research-based degrees. Additionally, research interest areas of nurses may be in qualitative research areas related to patient care rather than quantitative medical research.
The lack of sufficient senior nurse and allied health academics with clinical responsibilities can militate against the positive development of discipline-related clinical research. Previously funded nurse academic positions at both hospitals have remained unfilled. Such positions could support CNCs to fulfil their research roles and support the further development of innovative and safe nursing practice.

**Animal facilities**

The mix of laboratory-based and animal holding facilities at the ANZAC Research Institute, Concord and RPA hospitals and the Centenary Institute, facilitate translational research. Sydney Local Health District also has significant large animal research facilities.

- There is a need to develop and provide ongoing funding for the planned new Animal House at Concord as the current facility is inadequate to the developing needs of researchers.

- Backing-up the unique genetic lines in mice used by basic researchers is required in the event of a negative critical issue (such as infection, fire or chiller break-down). Providing back-up involves freezing the embryos of these unique lines of mice. Across the two campuses it is estimated that there may be about 40 lines of mice. Such a service is available in Moss Vale and may be relevant to ANZAC, RPA, Centenary and HRI. The likely cost is estimated to be $2-2,500 per line, plus an annual maintenance fee.

- The opportunity presented by the development of the Charles Perkins Centre to consolidate hospital, MRI and university animal facilities should be explored.

- There is a need to develop and provide ongoing funding for large animal facilities.

**Intellectual property**

The NHMRC requires research institutions to have ‘policies approved by their Governing Body relating to the ownership, protection and exploitation of intellectual property (IP)’ (NHMRC 2001 p.5).\(^{16}\) IP is generally understood as being ‘the property of your mind or intellect’. IP is a legally complex and highly sensitive area and includes issues related to patents, copyrights and trademarks.

A number of researchers noted that the newly created SLHD lacks a policy on Intellectual Property. Lack of legal agreements and clear policies about the LHD’s claim to ownership and associated rights for IP renders both researchers, relevant Institutes and the LHD vulnerable. This then means that IP is determined on a case-by-case basis, which can slow commercialisation, publication and funding opportunities and could potentially involve significant legal entanglement. The SLHD could develop relevant local policies to ease these issues for researchers in the District.

The NSW Office of Health and Medical Research has undertaken to develop an intellectual property framework and promote greater opportunities to commercialise these innovations.
8. Strategic Priorities, Actions, Indicators, Responsibilities and Timeframes

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<th>Responsibility</th>
<th>Timeframe</th>
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<td>1. To devise</td>
<td>1. To develop, in consultation with researchers, the university and MRIs, a District response to the</td>
<td>Discussions held with Ministry of Health and OMHR to ensure baseline</td>
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<td>develop hospital and medical research within hospitals</td>
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<td>Collaborative discussions held with partners and researchers to devise</td>
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<td>2. To advocate the recognition that Activity-Based Funding (ABF) may adversely impact principal</td>
<td>Position paper developed</td>
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<td>referral centres and their commitment to research</td>
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<td>3. To develop simple hospital and department business plans for research development based on this</td>
<td>Plans submitted to SLHD Board’s Education and Research Committee</td>
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<td>Research Strategic Plan</td>
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<td>4.</td>
<td>To establish a taskforce, reporting to the CE, to systematically review the business processes related to research to ensure that they are research-friendly. This includes • Systems and processes to ensure that the metrics of research output are available and published • Profiling of researchers • Grant and financial administration • Information Technology • Recruitment processes • Intellectual Property • Research-appropriate position descriptions and classifications</td>
<td>Task force established Report delivered to CE</td>
<td>CE/Research Director</td>
<td>2012 and ongoing</td>
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<td>5.</td>
<td>To advance a common view on the practical application of a research hub to the OHMR and government</td>
<td>Position paper produced</td>
<td>CE/Research Director in collaboration with partners</td>
<td>2012/13</td>
</tr>
<tr>
<td>6.</td>
<td>To work with partners to ensure funding support for a “Central Sydney” research hub and strategy</td>
<td>Funding approved</td>
<td>CE/Research Director in collaboration with partners</td>
<td>2012/13</td>
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<tr>
<td>Strategic Priority</td>
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<tr>
<td>2. <strong>To enhance the profile of SLHD research and researchers</strong></td>
<td>1. To develop revitalised websites at the District, Hospital and Community Health level which feature research and fundraising</td>
<td>Websites developed</td>
<td>Media and Coms</td>
<td>Dec 2012</td>
</tr>
<tr>
<td></td>
<td>2. To produce an annual District report on research</td>
<td>Annual research reports developed and made available on the website(s)</td>
<td>R &amp; D Offices, RPA/Concord/SDH and Media and Coms</td>
<td>Dec 2012 and annually</td>
</tr>
<tr>
<td></td>
<td>3. To establish, in collaboration with the University and MRIs, an agreed set of clear and simple measures of District research output. This should indicate grants, publications, ethics applications, clinical trials etc</td>
<td>Research measures established. Research measures reported annually</td>
<td>Planning to establish; Research Director</td>
<td>2012/13 and then ongoing</td>
</tr>
<tr>
<td></td>
<td>4. Through the Media and Communications Unit, to work with researchers to establish a clear protocol for regularly profiling research, research awards, discoveries etc</td>
<td>Protocol developed</td>
<td>Media and Coms</td>
<td>2013</td>
</tr>
<tr>
<td></td>
<td>5. To showcase research and to leverage fundraising through multiple media</td>
<td>Research showcased</td>
<td>CE</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>6. To explore branding and marketing implications of ‘RPA Research’, ‘Sydney Health’ and ‘academic health centre’ for usage in the District and for the research hub</td>
<td>Report developed to explore branding opportunities</td>
<td>Media and Coms, Research Director</td>
<td>1st July 2013</td>
</tr>
<tr>
<td></td>
<td>7. To assess opportunities for profiling research using social media</td>
<td>Brief developed</td>
<td>Media and Coms</td>
<td>2013</td>
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<td>Strategic Priority</td>
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<tr>
<td>3. To develop governance arrangements which ensure accountability and responsibility for health service-based research</td>
<td>1. To establish the position of District Director of Research</td>
<td>Research Director appointed</td>
<td>CE</td>
<td>2012</td>
</tr>
<tr>
<td></td>
<td>2. To explore the options for supporting a funded Research Governance Office at RPA and at Concord Hospital. This could comprise for example, fractional appointments to positions such as Director of Research, Clinical Trials Director, a Business Manager and administration support</td>
<td>Business Case for Research Governance Office developed</td>
<td>D. Ops</td>
<td>July 2013</td>
</tr>
<tr>
<td></td>
<td>3. To review, in collaboration with OHMR, the staffing requirements of the Research and Development Offices at RPA and Concord and implement findings</td>
<td>Review undertaken</td>
<td>D. Ops in collaboration with OHMR</td>
<td>July 2013</td>
</tr>
<tr>
<td></td>
<td>4. To establish selected KPIs for senior executives related to the provision of support to research and researchers</td>
<td>KPIs developed and incorporated into performance agreements</td>
<td>CE</td>
<td>2012 and ongoing</td>
</tr>
<tr>
<td></td>
<td>5. To ensure ongoing and enhanced funding and support for SLHD animal facilities</td>
<td>Funding for animal facilities is maintained and enhanced</td>
<td>D Ops/ GM RPA/ GM Concord Research Director</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>6. To facilitate the development of the new animal house at Concord</td>
<td>New Animal House developed</td>
<td>Concord GM</td>
<td>2013</td>
</tr>
<tr>
<td></td>
<td>7. To explore opportunities for conjoint animal house facilities at the RPA campus in collaboration with the University of Sydney</td>
<td>Feasibility report developed in association with the university and relevant MRIs</td>
<td>D Ops/GM RPA/ Research Director in collaboration</td>
<td>2013</td>
</tr>
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<td></td>
<td>8. To explore the opportunities, cost and desirability of backing-up the unique genetic lines in mice used by basic researchers</td>
<td>Report developed and implications considered by Executive and reported to Education and Research Subcommittee</td>
<td>Director of Research</td>
<td>2014</td>
</tr>
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<td></td>
<td>9. To develop an Intellectual Property Policy for the District which aligns and is consistent with that developed by the OHMR</td>
<td>Policy developed</td>
<td>CE</td>
<td>2015</td>
</tr>
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<td></td>
<td>10. To ensure that all new facility developments consider the opportunities for developing research components</td>
<td>Capital Works developments integrate research components</td>
<td>Director Capital Works</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Strategic Priority</td>
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<td>4. To harness the relationship between the University, MRIs and the Health Service to improve research</td>
<td>1. To develop Memorandum of Understandings between the Health Service, University and MRIs to articulate mutually advantageous agreements to enhance research, including research output, supporting new developments, governance etc.</td>
<td>MOUs established</td>
<td>CE</td>
<td>2013</td>
</tr>
<tr>
<td></td>
<td>2. To support the research capability of the Charles Perkins Centre, Lifehouse and the new mental health facility</td>
<td>Support provided</td>
<td>CE</td>
<td>Ongoing/as required</td>
</tr>
<tr>
<td></td>
<td>3. To foster a strong and collaborative relationship within SLHD between the MRIs, the Health Service and the University through the development of an identifiable research hub</td>
<td>Evidence of collaborations</td>
<td>CE</td>
<td>2013</td>
</tr>
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<td>Strategic Priority</td>
<td>Strategic Action</td>
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<tr>
<td>5. <strong>To support young and emerging researchers</strong></td>
<td>1. To support the development of education programs for young and emerging researchers in collaboration with CEWD and HETI</td>
<td>Programs provided</td>
<td>Directors of Research at RPA and Concord/CEWD/HETI</td>
<td>Annually</td>
</tr>
<tr>
<td></td>
<td>2. To provide a structured approach to mentoring identified young and emerging researchers in collaboration with OHMR</td>
<td>Mentoring provided</td>
<td>Directors of Research at RPA and Concord</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>3. To assess the need for access to tools such as Survey Monkey, SPSS and to provide such tools centrally at “hot desks” in District facilities</td>
<td>“Hot desks” available</td>
<td>Director of Research</td>
<td>2014</td>
</tr>
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<td></td>
<td>4. To provide a small grants program (up to $1,000) across the District for researchers on a trial basis, with an evaluation of its utility</td>
<td>Small grants made available, Review undertaken</td>
<td>D Ops/Research Director</td>
<td>2012-2013</td>
</tr>
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<td></td>
<td>5. To investigate opportunities, including through OHMR, for reasonably funded tax free scholarships for talented registrars, clinical nurse consultants, dental clinicians and allied health staff wishing to undertake doctoral research within the health system</td>
<td>Report developed</td>
<td>Directors of Research at RPA and Concord</td>
<td>2012</td>
</tr>
<tr>
<td></td>
<td>6. To hold a Research Week at both RPA and Concord as a means of profiling new researchers, providing mentoring from senior researchers and further improving research translation</td>
<td>Research Weeks organised</td>
<td>GMs/Research Directors</td>
<td>Ongoing</td>
</tr>
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<td>Strategic Priority</td>
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<td>6. To enhance and support clinical trials</td>
<td>1. To develop a business case for the enhancement of high quality clinical trials across the District with a view to further investing in clinical trials, considering sharing opportunities (pharmacy) and opportunities for developing closer links with industry</td>
<td>Business case developed</td>
<td>D Ops/ Research Director/ Business and Performance</td>
<td>2013</td>
</tr>
<tr>
<td></td>
<td>2. To consider recruitment of relevant patients into clinical trials as a KPI</td>
<td>Report on the feasibility of KPIs associated with clinical trials produced</td>
<td>D Ops, DON, D Clin. Gov Research Director</td>
<td>2013</td>
</tr>
<tr>
<td></td>
<td>3. To investigate opportunities for funding new R &amp; D hardware in diagnostics, imaging and related technology</td>
<td>Report developed</td>
<td>D Cl Ops, DON/Cl Director Imaging/Labs Research Director</td>
<td>2013</td>
</tr>
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<td></td>
<td>4. To prepare, for the OHMR, a case for a Clinical Research Centre (phase 1 centre) at the Concord and RPA Hospitals</td>
<td>Report developed</td>
<td>GM Concord GM RPA</td>
<td>2013/2014</td>
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| 7. **To support Interdisciplinary Nursing and Allied Health Research** | 1. To develop a nursing and allied health academic model with the following objectives:  
- To support and mentor nursing and allied health researchers  
- To provide infrastructural support  
- To facilitate opportunities for research to be undertaken | Model developed | DON/ Director Allied Health/ Research Director | 2013 |
<p>| | 2. To discuss with relevant universities options for funding clinician-researcher-nursing chair(s) using the funds allocated previously to chairs at Concord and at RPA | Discussions undertaken | DON/Research Director | 2012 |
| | 3. To discuss with Sydney University options for further supporting allied health-clinician-researcher chair(s) | Discussions undertaken | Director Allied Health/ Research Director | 2012 |</p>
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<th>Responsibility</th>
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</table>
| 8. To selectively invest in research development | 1. Within the District’s capacity, to invest in high return research projects. This may include:  
- Selectively back-filling senior researchers to undertake identified goal-specific research projects  
- Establishing research fellows in collaboration with partners  
- Establishing a facility to provide minor grants/funds to researchers for clearly identified outcomes | Funds selectively invested | CE             | Ongoing   |
References

1. National Health and Medical Research Council (NHMRC) and Australian Vice-Chancellors’ Committee (AVCC) 2007, National Statement on Ethical Conduct in Human Research, Australian Government, Canberra.

2. National Health and Medical Research Council (NHMRC) 2004, Australian code of practice for the care and use of animals for scientific purposes, Australian Government, Canberra.


9. National Health and Medical Research Council (NHMRC) 2010, Discussion paper, Developing Advanced Health Research Centres in Australia, AGPS, Canberra.


Appendix 1

NSW Health and Medical Research Strategic Review

The NSW Strategic Review of Health and Medical Research was established in 2011 to develop a ten-year plan across NSW to foster health and medical research. While NSW was considered to have a great many advantages as an environment for supporting medical research, it was also noted that it was timely for NSW to develop a clear vision and commitment to health and medical research. The plan has two broad strategies, with each strategy having 5-6 associated themes. Selected themes have been strategically targeted for earmarked funding. The two broad strategies are:

- fostering translation and innovation from research; and
- building globally relevant research capacity

In particular the review sought to:

1. Identify how well the health and medical research profile meets the health needs across the metropolitan and regional areas of the State and how it may contribute to the evolving health system in the future.
2. Identify the current profile of the NSW health and medical research workforce and assess its capacity to support the State’s future research developments.
3. Make recommendations on measures which might be taken to ensure NSW’s research capacity is matched to the need.
4. Develop an economic framework to support the recommended strategic plan.
5. Ensure appropriate links with industry to ensure commercialisation of new discoveries.

The review was a Ministerial Review reporting to the Minister for Health. The review committee included the following:

Peter J Wills, AC Review Committee Chairman
Director, Wills Advisory Pty Ltd

Prof. John Shine, AO Executive Director, Garvan Institute of Medical Research
2010 Prime Minister’s Prize for Science

Prof. Mary O’Kane NSW Chief Scientist and Engineer

Prof. S. Bruce Dowton Harvard University Medical School, Boston, USA
Former Dean of Medicine, University of NSW

Prof. Don Iverson Executive Dean, Faculty of Health & Behavioural Science, University of Wollongong,
Director, Illawarra Health & Medical Research Institute

Prof. Nick Saunders Vice Chancellor, University of Newcastle
Board Member, Hunter Medical Research Institute

Dr. Christine Bennett Chair, Research Australia
Former Chair, National Health & Hospitals Reform Commission
In terms of the two broad strategies, the following specific themes are included in the Strategic review.

**Strategy A  Fostering translation and innovation from research**

This is concerned with the translation of evidence into health improvement, clinical care, quality and performance.

Key themes related to this broad strategy include:

1. *Encouraging research within health services.* This includes, building a research-positive culture in LHDs, establishing a research grants program to support practitioner researchers, attracting high quality clinician-researchers in LHDs, providing research training, strengthening the business, human resources, IT and financial support for research. The OHMR will work with LHDs, ACI, CINSW and universities to develop an implementation plan.

2. *Developing clinical trials capacity.* This includes establishing a clinical trial support team within the Office for Health and Medical Research (OHMR), developing phase 1 clinical trial capability in NSW and reducing barriers to clinical trials. Funding has been provided for (OHMR) to establish a clinical trials office. Funds will be provided annually for ongoing support of research networks. Annual reports will be provided on the timeliness and outcomes of ethics reviews.

3. *Maximising the use of research in policy and service delivery.* This includes maximising the capacity for NSW Health to use research in policy; commission relevant research to inform policy; funding evaluations of policies and programs; and increasing collaboration between policy makers and researchers. The OHMR will work with key stakeholders to support translational research. NSW Health will contribute funding over a 5 year period to establish a Partnership Centre in prevention of lifestyle related chronic health problems.

4. *Focusing intellectual property expertise.* This includes developing an intellectual property framework that could be a model for multi-party publicly funded research; enhancing researcher’s knowledge of commercialization, business skills; promoting capability in commercialization offices. The OHMR will work with stakeholders to develop the framework.

5. *Supporting early-stage venture capital.* Establishing a pilot scheme to develop medical devices and align NSW research with Commercialisation Australia processes. Funding has been earmarked to establish the NSW Medical Devices Seeding Fund to support researchers and encourage further research investment.
Strategy B  Building globally relevant research capacity

This is concerned with nurturing and supporting current areas of excellence and building globally competitive research capacity. Key themes related to this broad strategy include:

1. *Enhancing health and medical research hubs and collaboration.* This includes requiring hubs to develop strategic plans that foster research translation and capacity; requiring hubs to report annually to OHMR on KPIs; review and align research networks to the review. The hubs are Central Sydney, Darlinghurst, Randwick, Northern Sydney, Westmead and Liverpool. The government has earmarked funding for research hub support, to provide administrative support and assist in the co-ordination of hub activities.

2. *Strengthening the research workforce.* This includes establishing an Elite Researcher Scheme to attract researchers to NSW; establish Research Fellowship Program targeted at early to mid career researchers; provide a scholarship “top-up” program to attract high quality PhD students; grow research training programs. The government has earmarked funds to establish the Research Capacity Building Program designed to retain and attract new leading researchers to NSW. The initial focus will be bioinformatics and the establishment of a professorial chair in Cancer Prevention in partnership with a university and the Cancer Institute. OHMR will develop further initiatives with stakeholders.

3. *Improving research infrastructure support for Medical Research Institutes and Population Health.* This includes reforming the Medical Research Support Program to reward excellence, promote critical mass and support other strategic goals; enhance and reform the Capacity Building Infrastructure Grants Program; and working with the Commonwealth to streamline the funding process. The government has earmarked additional funding for the Medical Research Support program to support medical research institute base funding (infrastructure funding), within a 4-year funding cycle based on merit and research excellence. Larger organisations will receive 40c in the dollar.

4. *Building on and optimizing the use of shared assets.* This includes developing a register of shared research assets; identifying asset gaps and developing a 10 year plan to address deficits; ensuring sustainability for existing research assets that focus on bio-banking, bio-informatics, population-based cohort studies and record linkages. OHMR will work with stakeholders to address these issues.

5. *Leveraging investment sources.* This includes providing assistance to hubs, research organizations, research networks, LHDs and consortia for competitive grant applications; co-invest in large (>10million dollar) philanthropic donations that align with the review; develop programs to attract investment in research; expand industry-partnered collaborative research programs. The OHMR will further consult to explore such opportunities.

6. *Improving NSW Health research administration.* This includes reforming site specific authorization processes; improving research ethics and governance data collection management and analysis; including research ethics and governance metrics as a monitoring measure in the LHD performance management framework; and appropriately resourcing LHD research offices to undertake research ethics and governance functions. The OHMR will work with research offices to improve processes.
Appendix 2

Review of Health and Medical Research in Australia

On 11 May 2011, the Minister for Mental Health and Ageing, the Hon. Mark Butler announced a Strategic Review into Health and Medical Research in Australia.

The Minister has been consulting with key organisations on the development of the terms of reference for the review. These organisations include:

- Association of Australian Medical Research Institutes;
- Australian Academy of Science;
- Australian Society of Medical Researchers;
- Group of 8;
- Medicines Australia;
- Public Health Association of Australia;
- Research Australia; and
- Universities Australia.

The Panel

The Government will establish an expert panel of prominent individuals with experience in and understanding of business, research and health service delivery to conduct an independent review of health and medical research in Australia. Panel members will have credibility among all the key stakeholder groups, relevant expert knowledge and extensive experience in advising governments.

The Panel will require access to expert advice, literature reviews and other information to inform its decision making process. The Panel is encouraged to consider the establishment of reference groups in particular areas of interest, including a reference group of relevant international figures to inform the Panel on international best practice in relevant areas. The panel will receive secretariat support through the Department of Health and Ageing.

Matters for Review

The review will take into account broader Government policy, including the Government’s fiscal strategy, and will focus on optimising Australia’s capacity to produce world class health and medical research to 2020, including with reference to the following matters:

1. The need for Australia to build and retain internationally competitive capacity across the research spectrum, from discovery research through to translation.
2. Current expenditure on, and support for, health and medical research in Australia by governments, industry, non-government organisations and philanthropy; including relevant comparisons internationally.
3. Opportunities to leverage additional investment and support for health and medical research in Australia through private sector support and philanthropy, and opportunities for more efficient use and administration of existing expenditure; again, including relevant comparisons internationally.
4. The relationship between business and the research sector, including opportunities to improve Australia’s capacity to capitalise on its investment in health and medical research through commercialisation.
5. Likely future developments in health and medical research, both in Australia and internationally.

6. Strategies to ensure Australia has the research workforce capable of meeting future challenges and opportunities.

7. The Commonwealth’s principal approach to funding health and medical research through the NHMRC compared to relevant international jurisdictions, including governance and structural issues.

8. Opportunities to improve collaboration in health and medical research and the translation of research outcomes into improved health policies and practices within and between Australia’s research and clinical sectors as well as other sectors relevant to public health; again including relevant comparisons internationally and opportunities for enhanced international collaboration.

9. Ways in which the broader health reform process can be leveraged to improve research and translation opportunities in preventative health and in the primary, aged and acute care sectors, including through expanded clinical networks, as well as ways in which research can contribute to the optimal implementation of these health reforms.

10. Ways in which health and medical research interacts, and should interact, with other Government health policies and programs; including health technology assessments and the pharmaceutical and medical services assessment process.

11. Ways in which the Commonwealth’s e-health reforms can be leveraged to improve research and translation opportunities, including through data linkage.

12. The degree of alignment between Australia’s health and medical research activities and the determinants of good health, the nation’s burden of disease profile and national health priorities.

13. Opportunities for Australia’s health and medical research activities to assist in combating some of the major barriers to improved health globally, especially in the developing world.

**Timeframes**

The Government intends to announce the Review Panel and its Terms of Reference by the end of July 2011 and for a final report to be received from the panel by 31 August 2012.
Appendix 3 Pre-election Better Patient Care Policy

The Better Patient Care Policy has five elements

1. **Develop a 10-year Health and Medical Research Strategic Plan for NSW**: A Health and Medical Research Strategic Taskforce, chaired by Mr Peter Wills AC, will be appointed to work with the research community to develop the plan. The plan will draw together the work of universities, major institutes, hospitals, other non-aligned high performing facilities, disease specific representative groups and industry.

2) **Create an Office of Medical Research**, with a dedicated budget reporting to the Health Minister. The office will ensure the Health and Medical Research Strategic Plan is delivered and engage with the research community. It will assist the pharmaceutical industry set up clinical trials, and support the medical devices industry commercialising breakthrough inventions, like those developed by Cochlear and ResMed. The office will distribute the $20 million boost to a Medical Devices Seed Fund and the Medical Research Support Program (MRSP). It will guide work between laboratories and clinical trials and provide assistance and longer term support to help NSW researchers win competitive grants from the Commonwealth and other sources.

3) **Create a separate Office of Science, Research and Productivity**, oversighted by the Chief Scientist reporting to the industry portfolio minister. It will maintain current programs and ensure work is collaboratively conducted with links to all relevant agencies.

4) **Create a medical devices seed funding program**. And we will also maintain the Science Leveraging Fund. Half of Australia’s medical devices industry is located in NSW. Famous companies like Cochlear which make the ‘bionic ear’ are based in Sydney. We need to ensure there is a critical mass of researchers and organisations in NSW to foster more global success.

5) **Allocate more funds for the Medical Research Support Program (MRSP)**. We will increase funding to support competitive Commonwealth Government grants bids through the National Health and Medical Research Council (NHMRC) and the Australian Research Council (ARC). This fund helps provide money that supports researchers in their work including the cost of power, specialised equipment, maintenance, computers and bioinformatics.
Appendix 4 Summary of Results of the Staff Survey

Introduction

The purpose of the Research Strategic Plan Staff Survey was to provide an opportunity for all interested staff to voice their views about current research activities and future priorities and issues.

Method

A thirteen item questionnaire was devised using the on-line survey tool, Survey Monkey. Items included information about the respondent’s health service and research role, research funding and research-related collaborations. Open-ended questions were asked about the respondents’ perceived adequacy of research facilities, resources and support, the ways in which research could be improved in Sydney Local Health District (SLHD) and the further research that should be undertaken in the District.

The survey was administered electronically, with staff simply needing to click on the emailed electronic link. The survey was open from the 10th May until the 1st July, 2011.

The survey was sent directly to all staff at Canterbury Hospital, Balmain Hospital, Concord Centre for Mental Health, Sydney Dental Hospital and Community Health by the SLHD Chief Executive.

At RPA and Concord Hospitals, the Chief Executive asked the respective Executive Director/General Manager to issue the survey through the Heads of Department. The survey was then issued through them to staff. This latter approach was implemented in order to ensure the survey reached as many researchers as possible, given that some researchers in RPA and Concord do not have SLHD email addresses.

The survey was also posted on the SLHD intranet Bulletin Board.

Survey results were analysed using simple proportions and percentages. Cross tabulations were undertaken of selected items, with significance levels calculated.

Emphasis was placed on the qualitative analysis of the open-ended questions to inform the overall strategy. These questions were analysed using content analysis techniques. Once themes or issues were identified, cross tabulations were used to identify the staffing categories or other relevant information.
Summary of Survey Results

A total of 232 staff responded to the survey. The staff were predominately nursing (34%), allied health (22%), medical staff (18%) or research staff (9%). 44% indicated that research was a part of their current work role. The majority of respondents worked at RPA (54%), with 18% at Concord and the remainder in other hospitals and community health services.

The Staff Survey indicated a number of strategic issues. These were as follows:

1. Additional support, profiling and enhancement of research was seen as needed. Suggestions included:
   1) Plans for Research at the District, Hospital and Departmental levels.
   2) Strategic profiling of research and researchers.
   3) Research commitment to be included in position descriptions, performance contracts/agreements of senior administration and clinical staff.
   4) Annual reports/highlights and grants received to be published.

2. Researcher education, mentoring and support to be systematically developed, especially to encourage new and emerging researchers and non-medical researchers.

3. Researcher forums should be available based on disciplines, interest areas and facilities.

4. Academic nursing and allied health roles and support should be enhanced. Academic positions in research were suggested. Research mentoring and support for nurse and allied health researchers was suggested. A new RPA Medal could be developed to include nursing and allied health researchers.

5. Small research grants should be locally available to help in the process of establishing research capability for new and emerging researchers.

6. Clinical back-fill, including administration assistance, should be considered as a means of enhancing research.

7. Research capability needs to be built beyond RPA and Concord.

8. Some departments/areas need particular attention to enhance their research output.

9. Financial and recruitment bureaucracy have sometimes impeded the work of researchers in RPA/Concord.

10. Information Technology and software needs to be enhanced to support research.