

RPA
INSTITUTE OF
ACADEMIC SURGERY

IAS Strategic Plan

2014 - 2018



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Foreword

The IAS is committed to improving the current standing of Academic Surgery across all surgical departments and disciplines at Royal Prince Alfred (RPA) hospital.

This Strategic Plan addresses academic career development, patient care, research, and education, and encourages integrated and innovative approaches to achieving the aims of the Institute.

I hope the objectives and interventions presented in this Strategic Plan will encourage and motivate all surgery-related staff to be involved in the development of Academic Surgery, which is a vital component for the provision of comprehensive tertiary and quaternary healthcare at RPA.

With a longstanding reputation for delivering high-quality surgical services and a strong background in academic collaborations, I am confident the surgical departments and staff at RPA are well placed to embrace and utilise the developments being proposed by the IAS in this plan.

We are sure the knowledge and evidence generated by the IAS will positively influence future policy and guideline development, and contribute significantly toward further improving surgical practice and patient outcomes.

I would like to extend considerable thanks to the Sydney Local Health District, Royal Prince Alfred, the University of Sydney and the departments of surgery at RPA for providing the Institute with their ongoing support and trust, and for the benefit of their expertise.

Together I am certain we can establish the IAS as a world-leading centre for Academic Surgery.



Professor Michael Solomon
Chair, RPA Institute of Academic Surgery

Executive Summary

Academic Surgery is defined as the integration of surgical teaching, research and clinical care.

Royal Prince Alfred (RPA) Hospital, in collaboration with the University of Sydney, has a proud and brilliant history in Academic Surgery that has resulted in a number of significant surgical breakthroughs. This includes cochlear implants, establishing Australia's kidney and liver transplant programs, developing endovascular as well as pelvic exenteration surgical techniques, and discovering novel techniques such as isolated limb perfusion technology.

Due to a number of emerging factors, such as multiple government reviews on medical research, changing university funding models and the evolving nature of surgical practice and teaching, in late 2012 the discipline of Academic Surgery at RPA came to a critical crossroad.

With a strong commitment to ensuring a vibrant academic presence, the Sydney Local Health District (SLHD) in partnership with the University of Sydney and the Departments of Surgery at RPA agreed to establish the *RPA Institute of Academic Surgery (IAS)*, to provide an identifiable profile and cohesive focus for the development of Academic Surgery.

Commencing in 2014, the central purpose of the IAS is to be the primary hub of surgical research and education at RPA through the development of academic surgical departments that pioneer best surgical practice and patient care.

The six key objectives of the Institute have been identified as:

1. Advance academic career pathways through the implementation of structured programs, the provision of mentorship and guidance and the facilitation of change
2. Foster a hospital-wide and community recognition that patients receive the best surgical care in academic centres of surgical excellence
3. Strengthen the capacity of surgical departments to undertake research, particularly clinical and laboratory research
4. Deliver and coordinate quality post-graduate surgical education and training
5. Enhance collaborations to establish a unified strategy for developing research and education
6. Explore opportunities and establish systems to ensure operational sustainability

This strategic plan is grounded in several key principles that are fundamental in guiding the success and direction of the Strategy over the next five years.

The IAS will monitor its progress and performance using a number of key performance indicators.

1. Background

Academic Surgery is often defined as the integration of surgical teaching, research and clinical care. The literature commonly recognises that ensuring high quality and safe surgical care requires all of these three elements (Morris, 2008). In addition, surgical leadership, management, teamwork and administration are further essential components to the advancement of surgical practice (RACS, 2008).

Royal Prince Alfred (RPA) has a pre-eminent position in the NSW and Australian health systems resulting from its tradition, since 1882, of providing high quality, integrated clinical services, teaching and ground-breaking research. Its location in the centre of Sydney, its status as a provider of the broadest range of clinical services on one site in NSW and its ability to deliver high volume district and tertiary services in a cost effective way are defining attributes. It is unique in NSW for its strong departmental commitment and broad-ranging contributions to research and education and its inter-relationship with leading medical research institutes, the University of Sydney and other tertiary sector organisations.

In particular, Academic Surgery at RPA, in collaboration with the University of Sydney, has a proud and brilliant history. This mutually beneficial alliance that has existed for over a hundred years has resulted in a highly prestigious and research-rich precinct that is arguably the envy of other education and health services across the nation. Indeed the collaboration is responsible for surgical breakthroughs such as cochlear implants, establishing Australia's kidney and liver transplant programs, developing endovascular as well as pelvic exenteration surgical techniques, and discovering novel techniques such as isolated limb perfusion technology. These advances have saved lives and have improved the health of countless millions of people in Australia and around the world.

In addition, Academic Surgery at RPA has facilitated the creation of three highly successful surgically focused research Institutes including The Baird Institute for Cardiovascular Research, the Surgical Outcomes Research Centre (SOuRCe) and the Melanoma Institute.

Due to a number of emerging factors, such as multiple government reviews on medical research (McKeon Review and Wills Report), changing funding models within the University of Sydney and the evolving nature of surgical practice, in late 2012 the discipline of Academic Surgery at RPA came to a critical crossroad. It became apparent that pursuing a new direction to enhance the future development of Academic Surgery was vital. This would need to include innovative ideas and contemporary strategies that would support the widespread pursuit of academia and reinforce its position within the hospital.

With a strong commitment to ensuring a vibrant and active scholarly presence with the discipline of surgery and RPA overall, the SLHD in partnership with the University of Sydney and the departments of surgery at RPA agreed to create the *RPA Institute of Academic Surgery* to provide a fresh approach and focus for surgery. This would include establishing an identifiable profile for Academic Surgery, fostering internal and external collaborations and the broader coordination of activities associated with Academic Surgery.

It was agreed that the Institute would be both multidisciplinary and multi-specialty. As such, the Institute encompasses medical, nursing and allied health surgical research and education as well as spanning the full range of surgical and other non-surgical related specialties (see Appendix).

In 2014 the *RPA Institute of Academic Surgery* was established.

2. Vision for Academic Surgery

The vision of the IAS is:

To be recognised as a world-leading centre for Academic Surgery dedicated to discovery, scholarship and innovation to improve the outcomes of surgical patients.

Over the five year period of this Strategy, the goal of the IAS is:

To be the primary hub of surgical research and education at RPA through the development of academic surgical departments that pioneer best surgical practice and patient care.

This strategic plan is grounded in the eight key principles outlined below that are fundamental in guiding the success and direction of the Strategy:



3. About IAS

3.1 IAS Advisory Council

Established within the SLHD and reporting to the Chief Executive, the IAS is supported by an Advisory Council with representation from the IAS, SLHD, the University of Sydney, existing RPA surgical research institutes and centres including *The Baird Institute*, *SOuRCe*, *Melanoma Institute Australia*, and the *Chris O'Brien Lifehouse*.

The IAS Advisory Council is responsible for ensuring the objectives of the Institute are being achieved through the provision of guidance and the development of recommendations to support the vision and development of Academic Surgery at RPA.

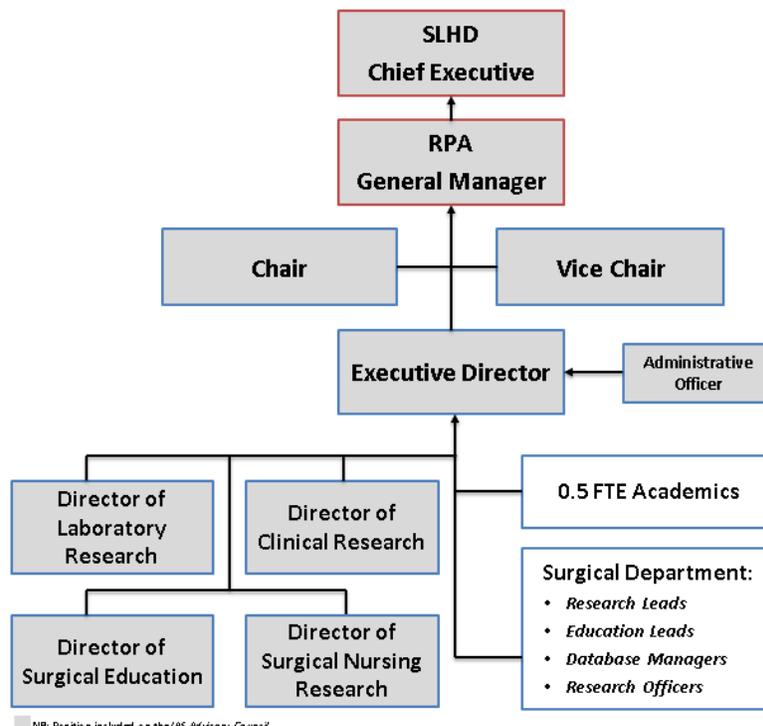
3.2 Staffing

Operationally the IAS is managed by an Executive Director who reports to the Chair and Vice-Chair of the IAS Advisory Council and the SLHD Chief Executive. Four Directors provide leadership and strategic direction within the key portfolios of Laboratory Research, Clinical Research, Surgical Education and Surgical Nursing Research. It is anticipated a leadership position focused on the Allied Health professions will also be established in time. All these positions are supported by an Administrative Officer.

The IAS promotes the appointments of half time Academic positions in surgery that are funded through various sources including the University of Sydney and are largely responsible for enhancing the surgical research program of their respective RPA department.

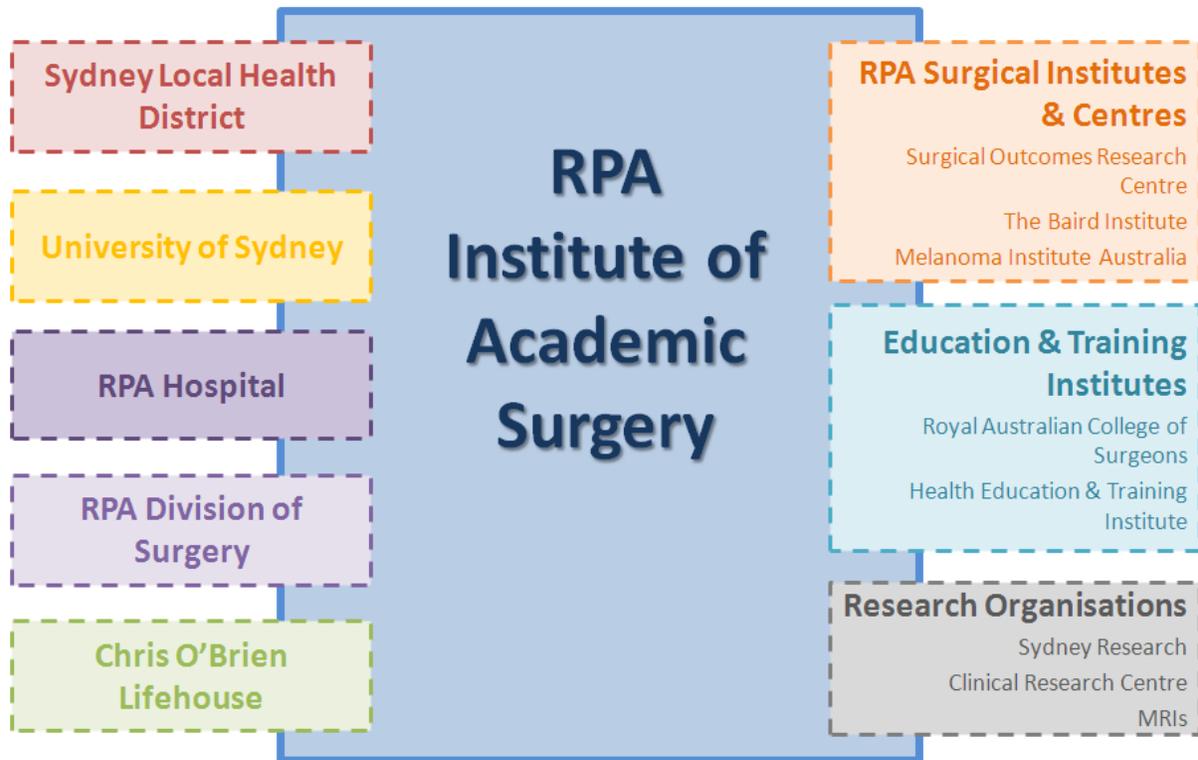
In addition, the IAS will create formal links with the research and education leads progressively identified and established within each surgical department and provide management oversight for the appointment of Database Managers and Research Officers within the surgical departments as they occur.

The current IAS staff structure is outlined in the following diagram:



3.3 Organisational Partnerships

The IAS works in close partnership with a significant number of existing organisations and operates within a spirit of teamwork, respect and innovation.



3.4 Funding

The core seed funding for the establishment of the IAS, including the appointment of the Chair and Vice-Chair, Executive Director, four Director positions, Administrative Officer and the planned refurbishment of the IAS building has been provided by the SLHD.

In addition, the University of Sydney has supported the IAS in utilising the salaries from 2.0 FTE retiring Professors of Surgery to fund four 0.5 FTE surgical academic appointments within the IAS.

These resources will enable the Institute to commence initial implementation of the Strategy and to build up its capacity to further attract research and education funding in partnership with key organisations.

4. Situation Analysis

4.1 Academic Career Development

The issues associated with academic career development differ across the professional groups.

Medicine

Within the field of medicine, building a successful career in Academic Surgery is a deliberate and planned undertaking that requires preparation, guidance and a tireless commitment to one's goals. Many young surgeons begin their career with high aspirations, only to find the ability to adequately and equally focus on the patient care, research and educational aspects of their career extremely daunting or confusing at the very least. It is evident there is a range of contributing factors including:

- surgical trainees largely being left to navigate their own way through the system without structured guidance on how to establish a career in Academic Surgery. For example post fellowship training often occurs in isolation without clear pathways into a hospital appointment or without support for transitioning a fellow's research into their clinical practice;
- The culture within the surgical profession is less supportive of academic endeavours. Many surgeons have little exposure or experience in research and/or providing education, and as a result are not always effective advocates for or accommodating of these efforts;
- Considerable financial disincentives exist whereby university academic salaries are significantly lower in comparison to the income that can be generated through private practice. It is evident that traditional appointments supporting an 80:20 split of academic and clinical practice have largely become outdated;
- Participation in research and education is not widely recognised as being part of routine practice. Examples of this include less emphasis being placed on experience within research and education during appointment processes and the varying appointment of academic heads within each department.
- There is an ongoing conflict between dedicating sufficient time for providing patient care versus undertaking research or delivering education. The pressure created by this dichotomy often results in academic pursuits being placed on hold or eventually abandoned.

Within the recent RPA experience, the number of surgeons with well established academic careers has varied significantly amongst the 17 surgical departments (see Appendix). Approximately 35% of surgeons at RPA have an academic title but their academic contribution has not been routinely measured at the hospital. In addition, the majority of RPA surgeons tend to be contractual staff (Visiting Medical Officers - VMOs), compared with physicians who tend to be employed as Staff Specialists, and therefore have greater access to trust funds which can be used to support their research.

Furthermore, whilst a small number of surgical departments have been able to foster supportive environments and collegiate relationships, overall there is considerable opportunity to extend a more cohesive approach to developing academic departments at RPA.

Nursing

Nurses and Midwives who have completed their training through University will all have been exposed to formal education covering the principles of research methodology and evidence based practice.

However, once they have completed their degrees and begin working as a Registered Nurse/Midwife, many focus on developing a strong clinical skill set, leaving research as less of a priority.

The establishment of an Academic Career within the nursing profession is then primarily facilitated through the Award outlined for Clinical Nurse Consultants (CNCs). They work within five key domains, which include research and education. Within these areas, descriptions regarding the core functions for CNC Grades 1 to 3 are outlined including for example that CNC 3s can act as a principal investigator in large scale studies. In addition, there are several nurses employed through RPA in Clinical trials or researcher assistant positions.

Broader efforts have been made across the SLHD to enhance academia within nursing including the recent appointment of a Professor of Nursing and the establishment of a Nursing and Midwifery Research Advisory Committee.

Despite this structure and a generalised receptiveness to participating in research across nursing, there remain a number of significant constraints preventing nurses from taking up opportunities to either develop their own research or participate in research studies. As with the surgeons, nurses also experience challenges because of a lack of time predominantly related to conflicts with service delivery, a lower level of support and recognition from their peers in pursuing academia, lack of funding to support permanent or full-time research appointments and limited knowledge and skills of the research process.

Allied Health

Finally, within the various allied health professions, there has been differing levels of success regarding the establishment of academic careers. Anecdotally the Dietetics, Physiotherapy and Speech Pathology departments at RPA have been able to create a culture that supports academia whilst other allied professions have been less successful. It would seem many of the barriers listed for surgeons and nursing are similarly experienced within allied health generally, including a stronger focus and prioritization on service delivery and clinical specialisation, a lack of recognition or encouragement to undertake research, for example study leave is often not back filled leading to impacts on patient care, and the limited exposure or experience staff have to research resulting in them being less inclined to participate.

4.2 Patient Care

RPA has long been recognised for its delivery of high quality patient care, particularly within surgical services. Indeed over 23,000 patients are treated within surgical departments at RPA each year using evidence-based procedures that have primarily emerged from research. Without the investment that enabled their development, it is evident the advances in surgery that benefit patients today would not have been possible.

As such, it is essential that each patient and every aspect of a patient's care is treated as an opportunity for further learning to ultimately keep improving patient outcomes. Establishing such a culture where research is embedded within clinical care as a matter of routine is a cornerstone of any academic health

facility. This is linked to strong evidence that shows patients who participate in research studies receive higher quality of care as pathways are clearly defined, care is carefully monitored and data is collected on changes in the patient condition.

There are a number of challenges to achieving this endeavour such as:

- Patients and some clinical staff can have varying knowledge regarding what being involved in a clinical trial or study means. This can make them resistant to participation and/or reluctant to seek out the availability of clinical trials or studies. Through their involvement in patient enrolment, data collection and the provision of ongoing support to patients and their families, staff also play a critical role in facilitating research.
- Information regarding the active clinical trials or studies being undertaken at the hospital, or the specific research interests of each department has not been made widely available to patients and staff or promoted further outside of the hospital setting; and
- The participation of patients in clinical trials or studies, essentially the research output of each department, has not been measured as a Key Performance Indicator (KPI) and therefore has not been a strong area of focus. To date there has been no comprehensive IT system linked with the patient's Electronic Medical Record (EMR) that has supported collection of data relating to the participation of patients in various studies. All data has remained at the individual department level in stand-alone and largely unlinked databases.

Within an Activity Based Funding (ABF) environment, it is apparent that the ability of a hospital to be able to directly measure patient participation in research will become increasingly important.

4.3 Research

Research within surgery covers all aspects of the translational research spectrum from basic and laboratory research, to clinical research, research on health systems and population health. The scope of this plan will primarily focus on laboratory and clinical research within surgery in the first instance, but will progress to cover the entire range.

The variable number of surgeons, nurses and allied health workers that are academically active within each surgical department mirrors the disparity in laboratory and clinical research output seen. Although pockets of research excellence exist, this has largely remained at the individual level rather than developing into a focused departmental program with key research themes. This results from a number of significant challenges including:

- Access to research infrastructure and support such as Database Managers or wet Laboratories for example;
- The importance of recognising that a strong research base underpins developments or the translation of new surgical techniques. Without this acknowledgment, it is difficult for surgical research to compete for funding with other types of research such as randomised clinical trials for drugs;
- Arguably the nature of some surgical research poses more practical challenges than those experienced in other forms of research. For example securing consent from patients to be randomised to undergo very different procedures that have very different side effects can be difficult;

- Similarly, the expectations of key research funders are not always well suited to surgical research. For example, much research requires that 60-80% of the Chief Investigator's time be spent on the research project, which is an unworkable expectation for surgeons who need to be able to maintain their level of clinical practice;
- Due to the intensive nature of their specific clinical training, whereby the focus is primarily on ensuring they have the right technical skills to progress in their chosen specialty and discipline, many staff do not obtain experience in research and find it difficult to know where to find it after they have completed their training and established a clinical practice; and
- Undertaking high quality research is a multidisciplinary effort. Surgeons are typically effective leaders of teams in a surgical environment but this form of leadership may not always translate to a research environment where a more collaborative approach is required.

4.4 Education

Within the field of medicine, the surgical training pathway starting from a medical student and progressing through to post fellowship level is provided by a number of different organisations with various expectations regarding the performance of the trainees along the way. This includes the University and associated Clinical School, the hospitals where the trainees are based, the College and individual specialty Societies and overall guiding bodies such as the Health Education and Training Institute (HETI) and the Clinical Excellence Commission (CEC).

Whilst many aspects of the organisation and provision of surgical training at RPA are excellent, especially for advanced trainees on the Surgical Training and Education (SET) program, there are a range of challenges in delivering a comprehensive program across all levels including:

- The development of a suitably sized and dedicated facility for surgical training is needed within the hospital. Although there are a number of existing small training rooms, these are dispersed across the campus and need upgrading for the needs of IAS;
- Education and training at the intern and resident levels within surgery is largely driven through HETI, with increasing re-engagement by the Royal Australia College of Surgeons (RACS) through the J-Docs program. The entire body of RPA surgeons need to be encouraged to become more involved with training at this level so that trainees can commence their RACS based training well prepared to make the best of all delegated responsibilities;
- Although the RACS prescribes a very extensive body of knowledge and skills for those wishing to enter the SET program, it relies heavily on other bodies to deliver the education and training, which can be both time and resource intensive;
- There is significant variation in the training requirements for particular surgical specialties, whereby some are well organised such as Orthopaedics who have compulsory attendance at 'bone school' as part of their training, whilst many do not have dedicated time for training leading to conflicts with service delivery requirements;
- There are currently no clear guidelines regarding the level of supervision that surgical trainees must have or the appropriate level of delegation of procedures. There are varying levels of documentation and practices across surgical specialties with limited evidence or data collection taking place;

- Similarly there are varying expectations regarding the minimum skill set required for trainees to attempt certain procedures or to be potentially exposed to certain situations within an operating theatre. This is in contrast to many international hospitals, where a trainee must have practised undertaking a particular procedure within a training or simulated environment prior to being able to undertake it in an actual operating theatre; and
- The attendance of surgical trainees to educational sessions or the participation of surgeons in teaching, essentially the education output of each department, has not been measured from a global perspective as a Key Performance Indicator (KPI) and therefore has not been an area of focus across the hospital.

Within an ABF environment, it is apparent the ability of a hospital to be able to directly measure resource input into teaching will become increasingly important.

For the nursing and allied health professions, who arguably have more streamlined education and training delivered largely by Universities in partnership with hospitals for clinical placements, there still remains a number of key areas where education could be improved including:

- A lack of regular multidisciplinary team training that would focus on key elements such as communication in an operating theatre between professions for example;
- More opportunities for operating theatre nurses to develop and participate in education and training activities without disruption to theatre lists;
- A greater inclusion of research methodology into continued education programs as a matter of routine to increase the exposure and knowledge of staff on conducting research; and
- Development of a culture that regularly reviews and undertakes research on current education and training methods with the aim to increase their effectiveness.

5. The Strategy

5.1 Goal and Objectives

The goal of the IAS is to be the primary hub of surgical research and education at RPA through the development of academic surgical departments that pioneer best surgical practice and patient care.

The six key objectives are to:

1. Advance academic career pathways through the development of structured programs, the provision of mentorship and guidance and the facilitation of change;
2. Foster a hospital-wide and community recognition that patients receive the best surgical care in academic centres of surgical excellence;
3. Strengthen the capacity of surgical departments to undertake research; particularly clinical and laboratory research;
4. Deliver and coordinate quality post-graduate surgical education and training;
5. Enhance collaborations to establish a unified strategy for developing research and education; and
6. Explore opportunities and establish systems to ensure operational sustainability.

5.2 Interventions and Activities

To achieve these objectives, the main interventions and activities of this Strategy are:

Objective 1: Advance academic career pathways through the implementation of structured programs, the provision of mentorship and guidance and the facilitation of change

Intervention 1.1 - Implementation of structured programs

- work with NSW Health, SLHD, the University of Sydney and other key partners to create more structured pathways for establishing academic careers including:
 - funded fellowships within each surgical department that incorporate both clinical and research placements
 - academic consultant positions based on a 50:50 clinical and academic split
 - dedicated surgical nursing research positions
 - dedicated surgical allied health research positions

Intervention 1.2 - Mentorship and guidance

- directly provide mentoring to all interested staff e.g. surgical trainees, consultants, nursing and allied health workers to guide and support their efforts to establish academic careers.
- establish a network to enable aspiring surgical staff and researchers to make contact with and seek guidance from experienced surgeons, clinicians and researchers from within particular fields of interest.
- encourage the enrolment of staff with a surgical interest into higher research or education degrees.

Intervention 1.3 - Advocacy

- work with SLHD, Universities, RACS, HETI and other key partners to develop and implement strategies that better facilitate careers in academic surgery. This includes:
 - placing greater emphasis on participation in research within new consultant and senior level nursing and allied health appointments;
 - incorporating research into surgical training for all disciplines; and
 - encouraging and supporting surgical staff to participate in ongoing research.

Objective 2: Foster a hospital-wide and community recognition that patients receive the best surgical care in academic centres of surgical excellence

Intervention 2.1 - Clinical Trials Index (CTI)

- implement the CTI, which measures the number of patients enrolled in clinical trials / studies divided by the total number of appropriate patients, as a standard performance measure for all surgical departments.
- assist surgical departments to identify appropriate patients groups for measuring the CTI, as a starting point, and systems / methods for capturing and reporting the data.
- work with IM&TD and other key partners to strengthen data management systems that will improve the collection of research data at a patient level.
- establish an annual CTI report covering all surgical departments.

Intervention 2.2 - Culture development

- enhance patient and clinician perceptions about being involved in clinical trials / studies to develop a hospital culture that incorporates research into surgical patient care as a matter of routine. This includes:
 - holding educational workshops and present at key hospital forums to provide an overview of the concepts to staff;
 - collaborating with key partners to develop tools e.g. information for patients and staff, website content etc. to support the uptake of patients into appropriate studies; and
 - working with the SLHD Media and Performance Units to enhance the promotion of patients and staff involved in research.

Objective 3: Strengthen the capacity of surgical departments to undertake research, particularly clinical and laboratory research

Intervention 3.1 - Establish the baseline

- identify and document the current clinical and laboratory research being undertaken within each surgical department including establishing:
 - key contacts;
 - the availability of resources e.g. research staff, statisticians, database managers, existence of local and off-site databases, access to laboratories;
 - whether regular clinical audits are undertaken and the clinical relevance of the data collected;
 - current funding arrangements;
 - any defined research themes or areas of interest; and
 - any staff interested in clinical or laboratory research who are not yet involved.

Intervention 3.2 - Capacity development

- implement strategies to address the identified gaps (from intervention 3.1) within the clinical and laboratory research capacity of each surgical department.
- develop opportunities for greater exposure to clinical and laboratory research through:
 - delivering presentations at key forums e.g. Medical and Nursing Grand Rounds, JMO forums, Surgical Societies, Nursing Research and Education Committees;
 - holding an annual IAS workshop / meeting including awards;
 - facilitating meetings between key people and partners; and
 - disseminating information through the intranet, posters, noticeboards and articles.
- identify people who want to undertake further clinical or laboratory research within a higher degree and:
 - facilitate the selection of a suitable supervisor;
 - assist in defining the project, location and funding needs; and
 - provide advice, guidance and mentorship as required.
- develop units of study and short-courses on:
 - biostatistics;
 - research methodology;
 - randomised trials;
 - laboratory research: in vitro studies;
 - For example: Histology, scanning electron microscopy, flow cytometry
 - laboratory research: in vivo studies.
 - Small animal models e.g. mice, rats, rabbits
 - Large animal models e.g. sheep, pigs
- encourage departments to allocate a key person to undertake regular horizon scans of emerging research, surgical techniques and innovation with a view to using this information to drive appropriate meta-analysis studies and translation into clinical practice.

Intervention 3.3 - Enhance resources

- implement strategies to address the identified resource needs within each surgical department, where possible.
- identify and implement appropriate information technology infrastructure to support a centralised repository for data collection, research tools and resources that allows remote access.
- identify MRIs with available laboratory facilities, and participate in the planning and development of new facilities with the aim of optimising the use of shared resources.

Objective 4: Deliver and coordinate quality post-graduate surgical education and training

Intervention 4.1 - Surgical Skills & Simulation Facility

- establish a fully equipped surgical training facility that will allow:
 - *in vitro* training of basic surgical techniques;
 - using simple task trainers, small animal and human cadaveric specimens; and
 - multidisciplinary team training in various operating theatre scenarios such as trauma resuscitation and care of the critically ill patient.

Intervention 4.2 - Culture development

- re-engage the entire senior surgical staff to establish a regular, compulsory and comprehensive teaching program that has a multidisciplinary focus for:
 - early surgical trainees; and
 - all advanced FRACS trainees in all specialties.
- explore the potential for conducting regular teaching sessions within clinical streams that take a multidisciplinary approach.
- deliver training on surgical teaching and supervision at all levels and for all disciplines.
- introduce systems to monitor and improve surgical supervision and delegation including documentation regarding trainee expectations and data collection.
- use multidisciplinary training sessions to foster genuine collaborative relationships between all members of the operating theatre team.
- work with SLHD, Universities, HETI, RACS and other key partners to develop and implement strategies that better facilitate protected time for teaching and training within all disciplines.

Intervention 4.3 - Course development

- establish curricula and courses appropriate to each level of surgical training and discipline requirements, in line with RACS, HETI and specialty association needs.
- explore the possibility of developing and implementing a 'competency' based training program whereby all staff will be required to practice their component of a particular procedure within the surgical training facility prior to undertaking it within a real operating theatre environment.
- investigate funding models in relation to the delivery of suitable courses.

Intervention 4.4 - Educational Research

- facilitate and undertake research into surgical education and training such as:
 - skills and simulation training methods;
 - development and introduction of new techniques and models;
 - effectiveness of multidisciplinary training;
 - measurement and cost of training within an Activity Based Funding (ABF) environment.

Objective 5: Enhance collaboration to establish a unified strategy for developing research and education

Intervention 5.1 - Internal coordination and integration

- improve integration of surgical research and education within and between surgical and non-surgical departments by facilitating communication and establishing key networks.
- formalise essential structures within each surgical department to support their academic endeavours including having:
 - an overall Academic Head plus key leads in clinical research, laboratory research, nursing research, and surgical education (may be the same people)
 - access to adequate resources e.g. research staff, statisticians, databases
 - established funding streams
 - established metrics for measuring their performance

Intervention 5.2 - External partnerships

- strengthen links and relationships with key partners such as government agencies, universities, medical research institutes, specialty associations, indigenous groups, industry and other surgical training centres by:
 - establishing and meeting with key contacts;
 - maintaining an up-to-date profile on areas of interest, facilities and opportunities associated with each partner;
 - engaging these partners to ensure the work of the IAS is closely linked and where possible in harmony with their strategies. For example, working with indigenous groups to enhance surgical research on specific health issues for indigenous people; and
 - regularly disseminate information about the work of the IAS.
- foster collaborations between local, national and international surgical and academic units.

Intervention 5.3 – Research strategy

- work with the SLHD, Sydney Research, Clinical Research Centre, the University of Sydney and key MRIs to develop a unified research strategy for the entire precinct. This will involve the development of key research or disease related themes, for example within Cardiovascular, and the alliance of appropriate partners.

Objective 6: Explore opportunities and establish systems to ensure operational sustainability

Intervention 6.1 – Revenue generation

- establish sustainable funding streams from the following identified sources:
 - reimbursement for the development and delivery of short-courses and units of study;
 - research grants;
 - funding models for the supervision of higher degree students; and
 - active fundraising campaigns targeting philanthropic and industry donations.

Intervention 6.2 – Commercial partnerships

- explore opportunities to develop commercial partnerships with industry focusing on areas such as medical devices and resource and facility development.

6. Performance

The goal of the IAS is to be the primary hub of surgical research and education at RPA over the next 5 years through the development of academic surgical departments that pioneer best surgical practice and patient care. To achieve this goal, the IAS will monitor its progress and performance using the indicators outlined in the table below:

OBJECTIVE	INTERVENTION	KEY PERFORMANCE INDICATORS		TARGET	KEY LEADS
		YEAR 1 2014/15	YEARS 2 - 5 2015/16 – 2018/19		
1. Advance academic career pathways through the development of structured programs, provision of mentorship and guidance and the facilitation of change	1.1 Implementation of structured programs		The number of new: <ul style="list-style-type: none"> • funded fellowships • 50:50 academics • nursing research positions • allied health research positions 	All surgical departments have a funded research position. Successful applications to RMO positions (for students), SET training (for RMOs/reg), consultant positions (for trainees / fellows).	Michael Solomon / Paul Bannon / Katie McBride
	1.2 Mentorship and guidance		The number of surgically focused staff with higher degrees		
	1.3 Advocacy	The number of identified academic leads within each surgical department	The number of trainees / surgeons participating in research		
2. Foster a hospital-wide and community recognition that patients receive the best surgical care in academic centres of surgical excellence	2.1 Clinical Trials Index (CTI)	The number of surgical departments reporting CTI	The number of surgical departments reporting CTI CTI of each surgical department	All surgical departments have a CTI > 0.8 Strong culture reflected in survey results from patients and staff.	IAS Exec
	2.2 Culture development	The number of supporting tools developed	The number of presentations made by IAS at key forums		

OBJECTIVE		INTERVENTION	KEY PERFORMANCE INDICATORS		TARGET	KEY LEADS
3.	Strengthen the capacity of surgical departments to undertake research, particularly clinical and laboratory research	3.1 Establish the baseline	The number of surgical departments with a completed profile		All surgical departments undertaking clinical and laboratory research programs. Post-graduate training courses in lab/clinical research developed and delivered. Ultimately to deliver improved health outcomes through translational and clinical research.	Charbel Sandroussi / Michael Byrom
		3.2 Capacity development	The number of IAS: <ul style="list-style-type: none"> educational presentations and workshops held courses / units developed The number of identified supervisors / mentors within each department Annual IAS Awards established	The number per surgical department of: <ul style="list-style-type: none"> courses / units developed & delivered students enrolled in courses / units ethics applications grant applications successful grants publications and citations conference presentations post-graduate students being supervised 		
		3.3 Enhance resources	The number of identified contacts and site reviews of MRIs and Animal Houses performed The number and type of additional resources obtained	The number and type of additional resources obtained The number additional research facilities planned and developed		
4.	Deliver and coordinate quality post-graduate surgical education and training	4.1 Surgical Skills & Simulation Facility	IAS Facility plans completed and construction begun	Facility completed and the number of: <ul style="list-style-type: none"> courses delivered within facility by IAS students trained within facility by IAS departments and disciplines utilising facility 	All departments have local policies that define entrustable tasks, and mandate (and provide) <i>in vitro</i> task training prior to the delegation of operative experience whenever possible. IAS is a recognised centre for the	David Storey
		4.2 Culture development	The number of training sessions available for advanced trainees at RPA	The number of people attending surgical training sessions by IAS		
		4.3 Course development	The number of department developed courses run by surgical departments	The number of courses / units developed & delivered by IAS The number of students enrolled in		

OBJECTIVE		INTERVENTION	KEY PERFORMANCE INDICATORS		TARGET	KEY LEADS
				IAS courses / units	development of surgical education.	
		4.4 Educational research	The number of surgical departments and IAS led: <ul style="list-style-type: none"> ethics applications grant applications 	The number of surgical departments and IAS led: <ul style="list-style-type: none"> ethics applications grant applications successful grants publications and citations conference presentations 		
5.	Enhance collaboration to establish a unified strategy for developing research and education	5.1 Internal coordination & integration	The number of surgical departments collaborating with other departments The number of collaborating disciplines	The number of surgical departments with: <ul style="list-style-type: none"> a completed profile collaborating with other departments 	The RPA / University of Sydney campus is established as a major research precinct.	IAS Exec
		5.2 External partnerships	The number of key partners engaged	The number of key partners engaged		
		5.3 Research strategy	The number of research themes developed	The number of research themes developed		
6.	Explore opportunities and establish systems to ensure operational sustainability	6.1 Revenue generation	The amount of funds generated (\$AU)	The amount of funds generated (\$AU)	IAS is self funded in 5 years.	IAS Exec
		6.2 Commercial partnerships		The number of partnerships developed The amount of funds generated (\$AU)		

Appendix

1. RPA Surgical Departments

There are 17 surgical departments at RPA including:

- Breast Surgery
- Cardiothoracic Surgery
- Colorectal Surgery
- Ear, Nose & Throat
- Gynaecology
- Gynae Oncology
- Head & Neck Surgery
- Hepatobiliary & Upper GIT
- Melanoma & Surgical Oncology
- Neurosurgery
- Ophthalmology
- Orthopaedics
- Plastic & Reconstructive Surgery
- Transplantation Services
- Trauma Services
- Urology
- Vascular Surgery

2. Key Supporting Departments

- Anaesthetics
- The Perioperative Unit (TPU)
- Emergency Medicine
- Intensive Care Services
- Obstetric Medicine
- Imaging Services
- Paediatrics