Sydney Local Health District



RPA Bone and Soft Tissue Sarcoma Unit

September 2023





Gadigal Country

In Sydney Local Health District, we acknowledge that we are living and working on *Gadigal, Wangal* and *Bediagal* land, part of the *EORA Nation*.

We pay our respect to all elders past, present and emerging. Our vision is to have the healthiest Aboriginal community in Australia.

Ngurang Dali Mana Burudi – A Place to Get Better

Ngurang Dali Mana Burudi – a place to get better, is a view of our whole community including health services, Aboriginal communities, families, individuals and organisations working in partnership.

Sydney, it's your local health district

Sydney Local Health District is one of the top performing public health services in Australia. It is home to leading hospitals and health services delivered in various settings in the community and a range of associated support services.

Hospitals operated by the District include Royal Prince Alfred, Concord, Canterbury, Balmain and Sydney Dental. The District is also home to Australia's first virtual hospital, **rpa**virtual.

Royal Prince Alfred Hospital was named the best hospital in Australia by Newsweek in 2022 and 2023 and, together with Concord Hospital, was named among the top hospitals in the world.

The District is located in the centre and inner west of Sydney and is made up of the Local Government Areas of the City of Sydney (western part), Inner West Council, Canterbury-Bankstown (Canterbury part), Canada Bay, Burwood and Strathfield.

slhd.health.nsw.gov.au

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Introduction



The RPA Bone and Soft Tissue Sarcoma Unit is recognised as a world leader in the diagnosis, treatment and follow-up of patients with known, or suspected sarcoma.

Royal Prince Alfred Hospital (RPA) is one of Australia's leading hospitals, a premier tertiary and quaternary referral hospital.

RPA is a recognised world leader in healthcare excellence and innovation, established through the efforts of staff in patient care, teaching and research. There were 1266 research publications in 2022.

A key hospital of Sydney Local Health District, RPA serves its local community and patients from across NSW, Australia and internationally.

For more than 140 years, the staff at RPA have pioneered innovative techniques, treatments and complex interventions.

RPA has one of the most advanced surgical services of any hospital in Australia and provides a number of highly specialised, state-wide services including:

- ECMO Services
- Interventional Neurology and ECR Services
- Interventional Radiology Services
- Intestinal Failure and Nutritional Support Services
- CAR-T Cell Program
- Structural Heart Program (TAVI)
- Liver and Kidney Transplant Services
- Surgical Robotic Program
- Advanced GI surgical programs such as:
 - Pelvic Exenteration
 - Peritoneal Malignancy/Peritonectomy
 - Retroperitoneal Sarcoma
 - Advanced Upper GI Malignancy
- Bone and Soft Tissue Sarcoma Service

About the RPA Bone and Soft Tissue Sarcoma Unit

Established over more than 30 years, the RPA Bone and Soft Tissue Sarcoma Unit (RPA Sarcoma Service) comprises nationally and internationally renowned specialists across the key areas of sarcoma diagnosis and treatment.

The service offers individualised care for patients, based on current, evidenced-based practice.

The RPA Sarcoma Service receives referrals from across NSW and Australia. The RPA Sarcoma Service is responsible for more than 80 per cent of primary bone sarcoma and 40 per cent of soft tissue sarcoma care for adults in NSW.

The RPA Sarcoma Service is led by clinicians at RPA, who coordinate the service across multiple sites in Sydney, including RPA (and the Chris O'Brien Lifehouse), Sydney Children's Hospital Network at Randwick and Westmead and North Shore Private Hospital, with an aim to ensure patients and their families receive care at the facility most appropriate for their treatment and care.

The service is also dedicated to research about the disease and has dedicated clinical trials coordinators and data managers to support patients who wish to participate and clinicians.





Partnering with RPA to provide excellence in patient care





Launched in February 2020, RPA Virtual Hospital is the first virtual hospital in Australia operating 24 hours a day, 7 days a week.

RPA Virtual Hospital (rpavirtual) delivers hospital level care in the comfort and convenience of a patient's home, using digital technology to provide remote monitoring, clinical assessment and care, as well as specialised in-home nursing and allied health services.

The RPA Sarcoma Service works closely with rpavirtual to support sarcoma patients.





Chris O'Brien Lifehouse is a state-of-the-art independent cancer treatment and research hospital for public and private patients, located alongside Royal Prince Alfred Hospital and the University of Sydney.

Chris O'Brien Lifehouse is an integral part of the sarcoma service providing medical and radiation oncology services for patients of RPA under a Service Agreement. Major sarcoma surgery is not undertaken at Chris O'Brien Lifehouse.

As a dedicated cancer hospital. Lifehouse provides all aspects of clinical treatment, education, research, complementary therapies and emotional support all in one location for cancer patients, their carers and their families.

Lifehouse treats the full spectrum of adult cancers with a particular focus on rare and complex tumours. Patients at Lifehouse can receive all of their treatment in a single location. including surgery, chemotherapy, immunotherapy and radiotherapy together with supportive care.



North Shore Private Hospital Part of Ramsay Health Care

North Shore Private Hospital is a 312-bed surgical, medical and maternity facility located on Sydney's lower North Shore.

The hospital's specialties include orthopaedics, obstetrics, neurosurgery, intensive care, cardiac surgery, cardiology, ear nose and throat, vascular, plastics, oncology and general surgery.

Comprehensive diagnostic facilities and medical consulting suites are also on site. The partnership with RPA Bone and Soft Tissue Sarcoma Unit has been built upon over 30 years.

North Shore Private, a Sydney University teaching hospital, is involved in some of the world's most innovative research programs.







The Sydney Children's Hospital

in 2010 which brought together,

The partnership with RPA Bone

been built upon for many years.

and Soft Tissue Sarcoma Unit has

The department is comprised of a

multidisciplinary team of medical,

multidisciplinary meetings between

physicians and pathologists ensures

paediatric oncologists, radiation

radiologists, nuclear medicine

optimal care.

oncologists, paediatric surgeons,

RPA Clinicians attend the Sydney

Children's Hospital Network to

assist and provide support for

Adult Sarcoma cases.

complex Adolescent and Young

and Children's Court Clinic.

nursing, allied health and

psychological staff. Weekly

Network is the largest paediatric

THE UNIVERSITY OF

Established in 1850 as Australia's first university, today the University health care entity in Australia, formed of Svdnev is one of the world's leading comprehensive research Sydney Children's Hospital Randwick, and teaching institutions, ranked the Children's Hospital at Westmead, in the top 20 in the QS World Bear Cottage, Kids Research, NETS University Rankings.

> Its diverse community of more than 70,000 students and 8,000 academic staff showcases the best of Australian innovation and research on the international stage.

The University of Sydney is a world-renowned research institution, with 100 percent of its research ranked at world standard or above by the Australian Government. Since 2011 the University of Sydney has invested almost \$1.7 billion in interdisciplinary research, and plans to triple its current research investment to \$150 million annually by 2023, to enable its staff to improve the lives of everyone.

The largest division of the University of Sydney is the Faculty of Medicine and Health. The Faculty is dedicated to attracting and developing the brightest minds in health education and research to make and shape the future of health care. The Faculty has over 13,000 health and medical science students. The students are trained in state of the art facilities including the newly opened Susan Wakil Health Building at Camperdown.

About Sarcoma

Each year 700 people are diagnosed with sarcoma in NSW.

Sarcomas are cancers that start in the bone or soft tissues.

A sarcoma is a malignant tumour derived from cancerous bone, cartilage, fat, muscle and vascular or hematopoietic tissues. Sarcoma is considered a rare cancer. Sarcoma affects around one per cent of adults with cancer. Sarcoma is much more prevalent in younger people, comprising of between 10 and 20 per cent of cancers in teenagers and young adults. This makes it one of the most common cancers in young people.

Sarcomas can form anywhere in the body and are frequently hidden deep in the limbs. They are often misdiagnosed as a benign (non-cancerous) lump, or as a sporting injury or growing pains in young people.

There are more than 80 different subtypes of sarcoma, many of which have distinct clinical characteristics with unique natural history and tumour biology. These sarcomas have wellestablished treatment protocols, refined through sequential international clinical trials, and the recommended treatments are tailored to each patient's individual case.

The majority of sarcomas in Paediatric, Adolescents and Young Adults include:

- Ewing sarcomas
- Osteosarcomas
- Rhabdomyosarcomas
- Synovial Sarcomas

The most common sarcomas in older adults include:

- Angiosarcomas
- Chondrosarcomas
- Leiomyosarcomas
- Liposarcomas
- · Malignant peripheral nerve sheath tumour
- Synovial sarcomas
- Undifferentiated pleomorphic sarcomas

These rare cancers account for:

20%

10%



of the paediatric cancer population

of the adolescent and young adult cancer populations

Whole genome sequencing indicates there are significant familial risk factors for sarcoma, meaning at-risk people and their families can potentially be identified earlier and receive tailored care.



Image: Tumours in soft tissue can have a wide range of appearances. Small tumour cells with purple nuclei are seen above, spaced apart by tumour-associated fluid, which appears pale grey and bubbly. Tumours can often have many vessels containing small red blood cells, as seen here.



of the adult cancer population

Bone Sarcoma

Bone sarcoma is a rare type of cancer that arises from bone and cartilage, commonly presenting with a painful lump (tumour) in limbs. The most common places where bone sarcoma develops are around the knee, wrist, shoulder and pelvis.

About 200 Australians are diagnosed with bone sarcoma each year; it is more common among children, youth and young adults. Bone sarcoma is different from secondary bone cancer, which is cancer that spreads to the bones after developing in another part of the body.



Image: PET-CT scan bone sarcoma, 60-year old man with one month history knee pain

The most common subtypes of bone sarcoma:

$\frac{0 \text{ steosarcoma}}{35\%}$

of all bone Sarcoma

- Starts in cells that grow bone
- Often affects the arms, legs and pelvis, but may occur in any bone
- More commonly affects children, adolescents and young adults within growing bones; and older people in their 70s and 80s
- Osteosarcoma as high-grade tumours

$\frac{30\%}{30\%}$

of all bone Sarcoma

- Starts in cells that grow cartilage
- Often affects the bones in the upper arm and legs, pelvis, ribs and shoulder blade
- More commonly affects people aged over 40
- Chondrosarcoma as low-grade tumours a slow-growing form of cancer that rarely spreads to other parts of the body

Ewing sarcoma

15%

of all bone Sarcoma

- Affects cells in the bone or soft tissue that rapidly and often have a large lump associated with it
- Often affects the pelvis, legs, ribs, spine and upper arms
- It is more common among children, youth and young adults, but it can occur at any age
- Ewing sarcoma as high-grade tumours

Soft Tissue Sarcoma

Soft tissue sarcoma is a rare type of sarcoma that develops in connective tissues such as fats, muscles, nerves, deep skin tissues and blood vessels. These tissues support and connect all the organs and structures of the body.

Usually forming first as a painless lump (tumour), soft tissue sarcoma is most commonly developed in the thigh, shoulder and pelvis. Sometimes they can grow in the abdomen or chest (trunk).

There are more than 70 different subtypes of soft tissue sarcoma and they are named after the abnormal cells that make up the sarcoma.



Image: Sarcomas can have a range of appearances, and this leiomyosarcoma has large tumour cells of varying size and shape – some elongated and some rounded. The purple nuclei have jagged instead of smooth outlines, and contain unusually dense clumps of chromatin. The tumour is growing, with cells multiplying in an atypical fashion, such as the 'X' (mitosis) seen in the bottom left of this image. Inflammation reacting to the tumour, is seen as the much smaller dark purple nuclei in the right of the image – this inflammation provides a scale object, highlighting the abnormal size of the tumour cells.

The most common subtypes of soft tissue sarcoma include:

- Undifferentiated pleomorphic sarcoma from abnormal spindle-shaped cells
- Liposarcoma from fat tissue
- Leiomyosarcoma and Rhabdomyosarcoma from muscle tissues
- Angiosarcoma from blood vessels
- Malignant Peripheral Nerve Sheath Tumour (MPNST or PNST)
- Gastrointestinal Stromal Tumour sarcoma (GIST)
- Synovial sarcoma

Raising awareness, supporting sarcoma patients

Tania Rice-Brading finds strength and purpose supporting people whose lives, like hers, are touched by Sarcoma.

At age 17, her son Cooper, was diagnosed with an aggressive and rare osteosarcoma or bone cancer. He was a young, fit, representative sportsman, about to do his Higher School Certificate.

Today, flanked by her devoted family and volunteers, she coordinates the Jack Gibson Sarcoma Patient & Family Support Program for the Cooper Rice-Brading Foundation, continuing Cooper's vision to change the trajectory for young sarcoma patients.

Cooper incepted the Cooper Rice-Brading Foundation, driven by the alarming findings that his cancer was not like other childhood cancers, and research was underfunded and outdated.







"Coops would be researching, and chatting to the clinical staff who walked into his room, and I'd have to have my computer ready to put his thoughts down.

"Cooper found incredible joy and satisfaction during a very dark point in his life in the fact he could potentially do something which may help others."

Seven years later, Tania is focussed on seeing quantifiable change not only to fulfill Cooper's vision, but to instigate the critical change needed for others walking this road behind him.

"I am full of hope," she says, "I see these wonderful people working together, clinical staff, Allied Health professionals... we are fortunate to have such talented people in Australia who choose to work within the sarcoma space."

Tania also feels blessed by the generosity of the general public, who donate to support those living with sarcoma.

"Most people, will never have their lives touched by sarcoma, but are willing to donate what they can to make a difference, and that is one of the most incredibly touching aspects of the work I do."

Tania considers the following to be critical factors pre and post diagnosis:

- Early diagnosis may lead to improved survival outcomes - Don't ignore any pain (either yours or that of a child) that may not abate/is worsening, or unexplained lumps that do not go away and may be increasing in size.
- If there is no resolution/no improvement after seeking medical advice, seek a second opinion. Trust your gut instinct.
- Once diagnosed it is imperative that a sarcoma is treated by a specialist
 Multidisciplinary Team - contact details are on our website.
- Be your own or your child's best advocate. Do not be afraid to ask questions, do your research, stay one step ahead, and involve your treating team every step of the way.

Cooper's Story

On his birthday in late January of 2016, Cooper was on a father son trip to the Australian Open, and was lifting light weights in the hotel gym. He complained of soreness in his bicep/tricep region, which he, and the medical professionals engaged to care for him later that week, attributed to a possible muscle tear.

He was after all, a devout sportsman, and like most other sport mad sixteen year olds, prone to a range of minor injuries. After being referred for a routine MRI, our seemingly healthy, sport-loving son who had by then just turned seventeen, learned he had an aggressive and rare osteosarcoma or bone cancer.

Life as he knew it, changed irreversibly for Cooper...

The immediate changes to Cooper's life were not limited to the diagnosis, but the realisation it would extend to muscular skeletal impairment caused by extensive surgery to remove the tumour, which would place a serious question mark over the sports he loved so much.

Intensive chemotherapy, caused marked physical changes such as hair loss, unbearable fatigue, nausea and debilitating mouth ulcers.

Undoubtedly, the mental toughness required to meet this challenge head on, was where Cooper came into his own.

Cooper had for many years, been known as a formidable competitor on the football and cricket fields of Sydney, however his sarcoma diagnosis proved by far, to be the toughest challenge.

Whilst his courageous battle has come to a tragic end, Cooper's spirit continues to inspire those closest to him on a daily basis.

"I'd like to recognise the sarcoma not-forprofits nationally, most of whom are the legacies of those who have lost their lives to sarcoma.

These organisations have worked tirelessly to fund research with a view to a cure, while supporting those living with sarcoma and their families.

It is not about one organisation, or one person, it is about the strong collaborative effort of all those striving to make a difference."

Tania Rice-Brading

For more information or to support the work of the Cooper Rice-Brading Foundation **crbf.org.au**

Patient Stories

Meet Bodhi

After approximately four weeks of increasing hip and thigh pain, initially thought to be a groin muscle strain, Bodhi decided to see his local GP to investigate further. As a very active 20 year old apprentice electrician and extreme snowboarder, he was not prepared for the findings on his scans, showing a destructive process, eventually proven to be Ewing's Sarcoma.

Thus began his treatment journey, with appointments, scans and chemotherapy to begin with, followed by massive pelvic surgery. This involved removal of the affected bone, reconstruction of the defect, and replacement of his hip. One of the incredible advances in orthopaedic sarcoma surgery, pioneered in Australia through the RPA Sarcoma Service, is the use of custom made 3D printed titanium bone replacements, and this is what was done for Bodhi.

After completion of further chemotherapy, with scans showing him to be disease free, Bodhi embarked on an incredible journey of recovery.

His journey took him to Europe for a trip of a lifetime, where, only four months after surgery he was able to walk along the Cinque Terra, ride a bike in Hyde park, and attend the Monaco Grand Prix.



"It is stories like Bodhi's that keep the RPA Sarcoma Unit striving for the best oncological care that can be offered across the world."

Dr Richard Boyle, Orthopaedic Surgeon







Meet Nicola

Nicola is a self-proclaimed Harry Potter nerd and a lover of cats. "I like how you have to earn their [cats] affection," she said.

Nicola moved to Australia with her family when she was 10 years old. At age 23, she graduated from Sydney University with degrees in Commerce and Law. She was recruited to Macquarie Bank's graduate program before being offered a role as a Risk Analyst.

She noticed a lump on her hip had grown. She had been suffering from headaches which she thought were related to the stress of working full-time.

She was diagnosed with Alveolar Soft Part Sarcoma (ASPS), a rare soft tissue sarcoma. Scans showed a primary lesion in her lower left abdomen, which had metastasised to her lungs, left and right breasts and pancreatic tail. She also had multiple skull lesions and multiple lesions on her spine. Nicola was presented with few treatment options.

"My doctor at the time told me I only had six months to live," she said, "Being told there is no cure, no treatment, I was like, I am young I want to do everything I can to beat this."

She did her research and began treatment at the RPA Sarcoma Service – at Chris O'Brien Lifehouse and RPA.

Now, nine year's later, Nicola is continuing her treatment, which is keeping her stable. She says her goal is to go back to work.

"If I'm being 100 per cent honest, I just want to live a normal life," she said.



Meet Christina

At just 21 years of age, Christina presented to her doctor concerned about a four-month history of a lump growing in her right thigh. It didn't cross her mind that it could be cancer.

Christina was referred to the RPA Tumour Orthopaedic Surgeon and a multidisciplinary team who specialise in Sarcoma diagnosed Christina with Myxiod Liposarcoma. Her diagnosis was confirmed by a FISH (fluorescence in situ hybridisation test) to investigate gene changes within the cells.

Christina said her diagnosis was overwhelming.

"I was thinking this is crazy, ... I have cancer," she said, "You hear people being diagnosed with cancer, but you never think you are going to be told that."

Cristina underwent a wide resection of the lesion at The Institute of Rheumatology and Orthopaedics (IRO) at the end of November 2019.

She recovered from the surgery very well and did not need further treatment.

"I am very grateful for the surgeons who treated me," she said.

Cristina continues to be monitored with routine scans and consultation with the Orthopaedic Tumour Surgeon.

She has recently completed a 4km run.

"It's so important to look forward and keep positive, as it definitely feels like your whole world is crumbling down at first, but looking back from where I am now I'm super lucky to be able to keep living life to the fullest," she said.

Treating Sarcoma

The five year survival rates for adults and children with bone and soft tissue sarcomas are estimated at 70 per cent and 67 per cent respectively.

This depends on the extent of disease at diagnosis (stage), the tumour characteristics (some sarcomas are more aggressive than others in spreading) and response to treatment.

While the overall survival rate has improved over the past three decades thanks to research, survivorship issues after completion of treatment, limited therapy options beyond the first-line therapy and poor outcomes for metastatic sarcoma remain challenging problems to address.

Multidisciplinary Teams

Patients with sarcoma may need one or more types of treatment, including surgery, chemotherapy, or radiotherapy. The management of sarcoma can be very complex and requires the involvement of a multidisciplinary team.¹

This team brings together health care professionals from different specialties to discuss a patient's cancer diagnosis and staging, and their treatment options. It also enhances communication and care coordination between the specialists involved in a patient's care.

Each patient's case is reviewed at the weekly Bone and Soft Tissue Tumour multidisciplinary team meeting at RPA.

Our Multidisciplinary Team consists of Surgeons, Medical Oncologists, Radiation Oncologists, Pain Medicine Specialists, Pathologists, Radiologists and Imaging Specialists, Anaesthetists, Clinical Trial Researchers, Nurses, Social Workers, Psychologists, Palliative Care, Physiotherapists, Speech Pathologists, Occupational Therapists and Dietitians.

Following a biopsy, a diagnosis is then made with radiology and histopathology correlation. Patient management plans are then made.

Patients do not attend the multidisciplinary team meeting, but they are notified of the outcomes of their case discussion during the next consultation with their treating health professional.

Other key meetings

A Paediatric Bone Tumour multidisciplinary team meeting is also held monthly in combination with the health professionals at Children's Hospital at Westmead.

The Pelvic and Retroperitoneal Sarcoma Multidisciplinary team meets fortnightly, in conjunction with the General, Urology, Oncology and Colorectal Surgical colleagues.

The Complex Orthopaedic and Sarcoma Reconstructive Surgery Steering Committee, co-chaired by the Director of the RPA Sarcoma Service and Chief Executive Sydney Local Health District, provides strategic and operational oversight of the RPA Bone and Soft Tissue Sarcoma Unit and all supporting services. It provides clinical and corporate governance; operational oversight in line with patient demand; monitoring of patient activity in relation to the quality of patient outcomes and ongoing service impact including with critical supporting departments such as intensive care, imaging, pathology, radiation oncology, medical oncology, palliative care, ortho-geriatrics and pain services; support for interdisciplinary collaboration and efficiency across clinical departments and campuses; monitoring research and education.

Retroperitoneal Sarcoma Program

The Retroperitoneal Sarcoma Program was established in November 2020 under the governance of the Advanced Gastrointestinal Surgical Program (colorectal and upper GI surgery) at RPA. The Retroperitoneal Sarcoma Program Lead, Dr Peter Lee and Care Coordinator, Ms Sunny Wu were appointed to develop the Retroperitoneal Sarcoma Program and coordinate fortnightly multidisciplinary team meetings to discuss treatment options for patients.

The collaboration between Royal Prince Alfred Hospital and Chris O'Brien Lifehouse, led to the inception of the SPARC (Sarcoma of the Pelvic and Abdominal Retroperitoneum Collaboration) program. The aim of this program was to create a team across the two institutions for a centralised referral system, formal and regular multidisciplinary team meetings with a coordinator, establish a database and research program with a research manager and coordinate surgical resections with all the surgical subspecialties.



¹ https://www.cancer.nsw.gov.au/how-we-help/qualityimprovement/optimising-cancer-care/sarcoma-cancerspecialist-centres-nsw-ref

Our Services

The RPA Bone and Soft Tissue Sarcoma Unit provides a range of treatment options for patients.







Surgery

A comprehensive range of surgery is provided by the RPA Bone and Soft Tissue Sarcoma Unit.

Sarcomas are classified by location and will require different surgical considerations. Surgery is performed with curative or palliative intent.

Pre-operative radiotherapy is given for soft tissue sarcomas and pre-operative chemotherapy is given for selected bone sarcomas.

Surgical care by the RPA Sarcoma Service is provided at RPA. Institute for Rheumatology and Orthopaedics, Chris O'Brien Lifehouse, North Shore Private hospitals and the Sydney Children's Hospital Network at Randwick and Westmead.

The majority of the surgical component of sarcoma care is provided at RPA and North Shore Private due to the expertise built over many years. The Tumour Orthopaedic Surgeons operate at the following hospitals:

- Royal Prince Alfred Hospital
- Institute of Rheumatology and Orthopaedics (IRO) (for patients 16 years and over)
- Children's Hospital at Westmead
- Sydney Children's Hospital at Randwick •
- North Shore Private Hospital (private patients)
- Chris O'Brien Lifehouse (private patients)

Timing of surgery needs to be carefully coordinated as there is usually a defined optimal window for this to occur as per the protocol. The surgical procedure performed is highly specialised and each case needs individualised planning. The patient will undergo a full set of repeat investigations scans, which are compared with the initial baseline scans, to map out and plan the process for the surgical intervention.

The patient may also attend the Pre-Admission clinic at the hospital where surgery is planned, for tests and procedures, such as: consultation with anaesthetist: ECHO and/or ECG: blood tests. crossmatch and MRSA screen: consultations with Surgical Oncologists from other specialties such as Vascular, Plastic, Neuro, Colorectal, Cardiothoracic, Urology, Head and Neck / Ear Nose and Throat Surgeons.

Procedures performed could include:

- · Wide resection of the Soft Tissue Sarcoma, with or without additional procedures such as a split skin graft or muscle flap reconstruction
- Bone Tumour resection, with or without reconstruction, which can include: Extra-Corporeal Irradiation reconstruction, vascularised fibular grafting, a prosthesis (mega-prosthesis, or 3D printed prosthesis)

Meet our team: Surgery



Associate Professor Paul Stalley

MBBS (HONS) FRACS FAOrthA

Orthopaedic Surgeon; Former Director of RPA Bone and Soft Tissue Sarcoma Unit; Honorary Emeritus Consultant

Associate Professor Paul Stalley graduated with Honours from the University of NSW. For the last 30 years he has been an Orthopaedic Surgeon at Royal Prince Alfred Hospital, North Shore Private Hospital and The Children's Hospital, Westmead, Sydney.

Prior to appointment at RPA, Associate Professor Stalley trained in orthopaedics at The University of London and at Stanmore in the UK. He has extensive experience in joint replacement surgery for osteoarthritis and has provided spinal surgical services to RPA.

For the last 20 years, Associate Professor Stalley has been Director of the RPA Bone and Soft Tissue Sarcoma Unit, managing approximately 95 per cent of primary bone sarcomas in the NSW population. Associate Professor Stalley is recognised as one of the leading Orthopaedic Surgeons in Australia in the surgical management of patients with bone and soft tissue sarcoma. He recently stepped down from this role.

In addition, Associate Professor Stalley was the Program Director of Surgery, Sydney Local Health District, and Chairman of the JL Operating Theatres at RPA for over 20 years.

Associate Professor Stalley remains active academically with multiple publications for limb salvage surgery and complex revision hip and knee replacement surgery.

Meet our team: Surgery



Dr Richard Boyle BSc (MED) MBBS (HONS), FRACS FAOrthA

Orthopaedic Surgeon; Director, RPA Bone and Soft Tissue Sarcoma Unit: Visiting Medical Officer, RPA Hospital; Senior Lecturer, University of Sydney

Dr Richard Boyle is a senior consultant Orthopaedic Surgeon who graduated with Honours in Medicine from the University of NSW. He completed his Orthopaedic training in Sydney and undertook further subspecialist training at RPA and internationally in Toronto, Canada, Basel, Switzerland, and Vienna, Austria.

Dr Boyle is one of only a few Orthopaedic Surgeons in NSW with expertise in the surgical management of patients with bone and soft tissue tumours. Dr Boyle has particular experience and interest in hip and knee replacement, complex revision surgery, and bone and soft tissue tumour surgery, especially biological reconstruction and advanced joint replacement techniques including computer navigation and patient specific surgery, robotics and 3D printing.

Dr Boyle is a Fellow of the Australian Orthopaedic Association and previous Chair of The Northside Orthopaedic Training Scheme. He is a member of the International Society of Limb Salvage and the Australian and New Zealand Sarcoma Association.

Dr Boyle is involved in a number of clinical trials and prosthetic design teams for tumour treatment as well as in orthopaedic surgery and arthroplasty. He is the Medical Director of the NSW Bone Bank, and current Chair of the Sarcoma Clinical Group of the NSW Cancer Institute.

Dr Boyle has presented at national and international meetings, as an invited speaker, session chair and conference convener.



Dr Maurice Guzman MBBS (HONS), FRACS FAOrthA

Orthopaedic Surgeon; Visiting Medical Officer, RPA Hospital; Member of the RPA Bone and Soft Tissue Sarcoma Unit

Dr Maurice Guzman is an Orthopaedic Surgeon who specialises in hip replacement and robotic knee replacement surgery, orthopaedic trauma, in addition to bone and soft tissue tumours in adults and children. Dr Guzman is one of only a few Orthopaedic Surgeons in NSW with expertise in the surgical management of patients with bone and soft tissue tumours. He is a Fellow of the Australasian College of Surgeons (FRACS) and the Australian Orthopaedic Association (FAOrthA).

Dr Guzman graduated with Honours in a Bachelor of Medicine, Bachelor of Surgery (MBBS) from the University of Western Australia. He completed his orthopaedic specialist surgical training in Sydney and regional NSW.

Dr Guzman has completed specialist training in arthroscopic and reconstructive joint surgery and hip and knee replacement surgery in Australia. He later relocated to the UK to complete a fellowship at the highly prestigious Royal National Orthopaedic Hospital in London, specialising in bone and soft tissue tumours and complex joint replacement surgery. In addition to this, Dr Guzman completed observerships in Italy to refine his knowledge and skills in the surgical management of patients with bone and soft tissue tumours. He is actively involved in research and work has been published in several prestigious Orthopaedics journals.

Dr Guzman has appointments at RPA, Chris O'Brien Lifehouse and North Shore Private Hospital.



Dr Daniel Franks

BEng (Biomed) MBBS (HONS), FRACS FAOrthA

Orthopaedic Surgeon; Visiting Medical Officer, RPA Hospital; Member of the RPA Bone and Soft Tissue Sarcoma Unit

Dr Franks graduated with Honours from the University of Sydney Medical Program. He predominantly completed his orthopaedic training in Sydney but also gained invaluable experience through terms at other locations throughout NSW including Gosford, Newcastle, and Orange.

Dr Stewart grew up in Scotland and graduated in medicine from the University of Edinburgh. After basic surgical training in the UK he completed a research He has undertaken further sub-specialty training in fellowship in Plastic and Reconstructive Surgery at robotic knee and hip arthroplasty, revision arthroplasty, the University of New South Wales. He then undertook bone and soft tissue tumour surgery, and complex advanced training in Plastic and Reconstructive Surgery reconstructive and limb salvage surgery. Prior to through the Royal Australasian College of Surgeons commencing medical training Dr Franks graduated with in Sydney and Auckland. After plastic surgery training Honours in Biomedical Engineering at the University of Dr Stewart then completed a specialist fellowship Sydney and developed devices as a design engineer. in Hand and Microsurgery at the Royal Children's Hospital in Melbourne. Dr Stewart has public hospital He continues to have a particular interest in integration appointments at Royal North Shore Hospital Hand of technologies such as custom device design, 3D and Peripheral Nerve Unit and the Children's Hospital printed implants, computer navigation, and robotic Westmead, where he is part of the congenital hand assisted surgery to deliver patient specific solutions service. He is also a Senior Lecturer at the University to complex limb and joint reconstructions. Dr Franks of Sydney, and is actively involved in research, and has been involved in various research projects and has teaching of trainees in both plastic and orthopaedic publications in a number of surgical and orthopaedic surgery.

journals. He has presented at national orthopaedic conferences and meetings, and is strongly committed to ongoing involvement in research, and his own professional development.

Dr David Stewart

MBChB MRCS (Glas) FRACS (Plast)

Plastic and Reconstructive Surgeon; Member of the RPA Bone and Soft Tissue Sarcoma Unit

Dr David Stewart is a Plastic and Reconstructive Surgeon with a special interest in hand and wrist surgery, peripheral nerve surgery and reconstructive microsurgery.

Sarcoma Anaesthetics

Sarcoma anaesthesia is a complex and multifaceted sub-discipline that requires input from experienced specialised clinicians.

Anaesthetists are responsible for many aspects of the patient's well-being as they prepare for, undergo and recover from surgery for their sarcoma.

Patients attend a pre-admission clinic, where a thorough history, examination and investigations are undertaken to optimise them for surgery.

During surgery, anaesthetists perform a combination of advanced general and regional anaesthetic techniques, transfuse blood, give appropriate pain relief and monitor the patient closely to guide them safely through complex and variable surgery.

In the postoperative period, pain specialists from the anaesthetic department play an essential clinical role for patients that may have difficult and chronic pain problems related to surgery and treatment. The pain specialists communicate with nursing staff, physiotherapists and surgeons to help patients achieve their best possible results from surgery.

Anaesthetists from RPA participate actively in perioperative research, including the perioperative management of sarcoma, to ensure all our patients have access to the best possible care.



Meet our team: Anaesthetics



Dr Nayana Vootakuru B.Med, FANZCA, MPH

Specialist Anaesthetist; Visiting Medical Officer, RPA Hospital, NSP; Deputy Director of Anaesthesia, Mater Hospital; Councillor, Australian Council on Health Care Standards; Member of the RPA Bone and Soft Tissue Sarcoma Unit

Dr Nayana Vootakuru is an anaesthetic consultant who graduated with a Bachelor of Medicine from the University of Newcastle. She completed her anaesthetic training in Sydney and regional NSW, including a specialised fellowship at RPA. She cares for sarcoma patients regularly at RPA and North Shore Private Hospitals. She is the lead clinical liaison for establishing the Sarcoma Anaesthesia Unit at North Shore Private Hospital.

Dr Vootakuru is interested in patient safety, error reduction and quality in health care. She studied a Master of Public Health at Harvard University with a full academic scholarship as a R.G. Menzies scholar. She currently manages the R.G. Menzies scholarship program in Australia. She is a member of the Safety and Quality committee at the Australian and New Zealand college of Anaesthetists (ANZCA), as well as the ANZCA representative to the Australian Council on Health care standards. She is the Deputy Director of Anaesthesia at the Mater Hospital in Sydney, where she sits on the patient care review committee. She regularly teaches junior doctors and medical students, and has presented at national anaesthetic conferences.



Dr Andrew Watts

MBBS (UWA), FANZCA, CCST (UK)

Senior VMO anaesthetist RPA Hospital, Head Transplant anaesthesia; Member of the RPA Bone and Soft Tissue Sarcoma Unit

Dr Watts completed his anaesthetic training in Western Australia and then worked overseas in Canada and the United Kingdom undergoing further training in complex anaesthesia including liver transplantation and cancer surgery. Dr Watts has worked with Dr Boyle and the other sarcoma unit surgeons for more than 15 years.

Dr Watts has an ongoing interest in provision of anaesthesia for major cancer surgery of the GI tract including liver and pancreas surgery, bone and soft tissue sarcomas and liver transplantation.

Dr Watts has numerous publications in recognised international anaesthesia journals, has edited a textbook on transplant anaesthesia and critical care. Dr Watts continues to be actively involved with research. He has been invited to speak nationally and internationally on topics including liver transplantation, surgery and major blood loss and massive transfusion. Dr Watts is involved with education and has been an examiner for College of Anaesthetists for 12 years.

Meet our team: Anaesthetics



Dr Michael Stone B Med Sc MBBS (HONS) MMed (Pain Mgmt) PGDipEcho FANZCA FFPMANZCA

Anaesthetist and Pain Specialist; Supervisor of Anaesthetic Training, RPA Hospital; Visiting Medical Officer, RPA Hospital; Visiting Lecturer, University of Papua New Guinea; Member of the RPA Bone and Soft Tissue Sarcoma Unit

Dr Michael Stone is a senior consultant anaesthetist and pain specialist who graduated with Honours in Medicine from the University of Sydney. He completed his anaesthetic training in Sydney and undertook further subspecialist training at RPA before completing his pain medicine training at the Michael Cousins Pain Management Clinic at Royal North Shore Hospital.

His current clinical interests are anaesthesia for complex reconstructive bone tumour surgery, complex hepatobiliary surgery, post-operative pain management and medical education and training.



Dr Ryan Downey BSc(Adv)(Hons) MBBS FANZCA

Anaesthetist Specialist, RPA Hospital; Member of the RPA Bone and Soft Tissue Sarcoma Unit

Dr Downey is a staff specialist anaesthetist at Royal Prince Alfred Hospital, with expertise in sarcoma, head and neck surgery, breast surgery and liver transplant. After graduating from the University of Sydney in 2007, Dr Downey completed his anaesthetic training at RPA, including a Fellowship with a specialty interest in sarcoma. He is the Director of Facilities within the Department of Anaesthetics at RPA, managing complex anaesthetic equipment for the operating theatres.

Dr Downey is the RPA Department of Anaesthetics lead for simulation education, clinical lead for the RPA regional anaesthesia service and actively involved in anaesthetic research particularly in the area of cancer surgery and continues to produce publications in peer reviewed journals. He is frequently invited to present at national anaesthetic and surgical conferences on a range of perioperative topics.



Dr Lucy Kelly MBBS FANZCA

Consultant Anaesthetist; Member of the RPA Bone and Soft Tissue Sarcoma Unit

Dr Lucy Kelly is a Consultant Anaesthetist who completed an adult fellowship at Royal Prince Alfred Hospital in 2016, including sub-specialty training in anaesthesia for sarcoma surgery. She worked with Associate Professor Paul Stalley and his anaesthetist Dr Alfred Chua. Dr Kelly considers herself very fortunate to have worked with this great partnership and specifically under the guidance and mentorship of Dr Chua and his 29 years of experience. One of the most striking things to Dr Kelly that year was the excellent team based approach to patient care, something she strives to help continue. Dr Kelly also completed a year of additional fellowship in Paediatric Anaesthesia at The Children's Hospital at Westmead in 2017 and is able to provide the highest level of anaesthetic care to adults and children requiring surgical treatment as part of their Sarcoma journey. Dr Kelly has been a member of the specialised team of anaesthetists who provide anaesthesia for sarcoma patients since Dr Chua stepped down from his role in 2021.

Other significant contributors

Other significant contributors to the RPA Sarcoma Service include Dr Emma Culverston, Dr Nat Symes, Dr DaeSoo Kim, Dr Hugh Longworth, Dr Raj Gupta, Dr Navkiran (Kiran) Kaur, Dr Roumel Valentin and Dr Shanti Pathirana.

Nursing and Allied Health

The Sarcoma Clinical Nurse Consultant may receive a referral at any point in the patients' journey and make contact to assist. The role of the Clinical Nurse Consultant includes, but is not limited to, explaining the services of the RPA Bone and Soft Tissue Sarcoma Unit, acting as a point of contact for the patient and clinicians at all stages, supporting the patient in their home environment remotely, linking patients in with appropriate services and non-government organisations, advocating for the patient and providing a supportive environment.

Referrals to appropriate Allied Health clinicians are made to provide therapy to optimise the physical, emotional and functional ability of patients.

These services include but are not limited to:

- Psycho-oncology
- AYA Psycho-oncology
- Social Work
- Occupational Therapy
- Physiotherapy
- Exercise Physiology
- Dietetics
- Speech Pathology

Meet our team: Nursing



Aisling Byrne

Sarcoma Clinical Nurse Consultant; Member of the RPA Bone and Soft Tissue Sarcoma Unit

Aisling (Ais) is a Clinical Nurse Consultant for the Osteosarcoma Service. Ais started her nursing career in Dublin, Ireland in 2004 working on an acute general surgical ward before moving to Sydney in 2011.

During her time in Sydney, Ais has worked in The Orthopaedic and Hand Surgery Unit in North Shore Private Hospital as a Registered Nurse, Clinical Nurse Specialist and then becoming the Nurse Unit Manager (NUM). She maintained the role of NUM for nine years before moving to The Mater Hospital as NUM of the Orthopaedic and Rehabilitation Department. The delivery of high standard, safe care has always been her passion in every role she has had.

As a Clinical Nurse Consultant with the Osteosarcoma Service, Ais triages patient referrals, directs them to the appropriate clinician ensuring the patient and families are at the centre of their health journey. She liaises with the multidisciplinary team regarding the ongoing care of patients ensuring all aspects of patients' needs are incorporated into the plan of care.



Katie Thomson

Sarcoma Clinical Nurse Consultant, Chris O'Brien Lifehouse; Member of the RPA Bone and Soft Tissue Sarcoma Unit

Kate completed her Registered Nurse training at the University of Glasgow with Honours in 2011. She began her career at King's College Hospital London gaining experience in oncology and haematology, specialising in bone marrow transplant, before moving to Australia to continue her career in oncology. Katie is a member of The Cancer Nursing Society of Australia The Youth Cancer Service and The Australia and New Zealand Sarcoma Society. Katie joined the Sarcoma Unit in 2018 and is based at Chris O'Brien Lifehouse. Her main role is to coordinate care for sarcoma patients and act as a point of contact through their treatment.

Ione Hardwicke

Nurse Unit Manager, RPA Hospital; Member of the RPA Bone and Soft Tissue Sarcoma Unit

Ione is the Nursing Unit Manager for Q7E Elective Orthopaedics in the IRO Building at Royal Prince Alfred Hospital (RPA).

Ione has worked for over 15 years in NSW Health at Prince of Wales Hospital before moving to RPA in early 2023. She has management and clinical experience in Cardiology, Respiratory and Infectious Diseases and Acute Isolation COVID Units.

In 2022 Ione received Nurse of the Year at Prince of Wales Hospital and has a strong clinical focus on wellbeing of both staff and patients. Ione's compassionate leadership style aims to continue to build the unit as a centre of clinical excellence and develop a culture of empowerment and holistic treatment of patients and their families.

Meet our team: Nursing



Shazia Qureshi

Clinical Nurse Consultant Orthopaedics, RPA Hospital; Member of the RPA Bone and Soft Tissue Sarcoma Unit

Shazia has been a Registered Nurse at Royal Prince Alfred Hospital since 2009. She has specialised in elective orthopaedics. She has completed Masters of Nursing from Sydney University in 2009 and completed a post graduate Certificate in Musculoskeletal and Rheumatology Nursing in 2011.

In her role as Clinical Nurse Consultant and a member of the Sarcoma Unit, she triages the referrals from GPs and directs them to the appropriate clinician. She also assesses and educates the orthopaedic patients in the pre-admission clinic to prepare them for surgery thereby optimising their recovery post procedure. In addition in her role as the Quality Manager for Rachel Forster Bone Bank at RPA, she inspects the quality and manufacturing of the Femoral Heads used, at times, as grafts for patients with Osteosarcoma.



James Mortimore

Nursing Unit Manager Trauma Orthopaedics, RPA Hospital; Member of the RPA Bone and Soft Tissue Sarcoma Unit

James is the Nursing Unit Manager for the Trauma Orthopaedic ward at RPA Hospital. James commenced his nursing career at RPA in 2008 and has worked in various roles to date - clinical nurse educator, after hours resource nurse, after hours graduate coordinator and chair of the Educator Committee He also worked in the Patient Flow Unit as the COVID Bed manager in 2021 and managed various COVID wards as part of the RPA response.

James commenced his role as the Nurse Unit Manager of Trauma Orthopaedics in 2018 and collaboratively works with the multidisciplinary teams and orthogeriatric/trauma service. James places a strong emphasis on a holistic and collaborative approach with both his staff and his patients to ensure there is an enriched culture of learning and support at all times.



Jane Murphy

Nurse Unit Manager, North Shore Private Hospital; Member of the RPA Bone and Soft Tissue Sarcoma Unit

Jane is the Nursing Unit Manager of the Orthopaedic Department at North Shore Private Hospital (NSPH).

She commenced her nursing career as a new graduate nurse in the Orthopaedics Ward at North Shore Private Hospital before transitioning to an area of key interest in Medical Oncology. She gained advanced nursing skills and assessment skills working in this area.

In 2021, Jane was appointed to the role of Nursing Unit Manager of the Orthopaedic Ward. Her experience in these clinical areas, has developed a strong understanding and emphasis in the importance of a holistic and collaborative multidisciplinary care for patients and their families and carers. Jane provides strong leadership for staff and continues to build the orthopaedic team on both wards.

Since 2020, North Shore Private Hospital has collaborated with RPA Hospital and The RPA Sarcoma Service to assist and deliver, complex pre and postoperative surgical Sarcoma treatment.



Kristyn Schilling

Sarcoma and Adolescent Young Adult (AYA) Specialist Nurse, Chris O'Brien Lifehouse; Member of the RPA Bone and Soft Tissue Sarcoma Unit

Kristyn Schilling is the Sarcoma and Adolescent Young Adult (AYA) Specialist Nurse at Chris O'Brien Lifehouse.

Commencing nursing at Royal Prince Alfred Hospital in 2006 Kristyn has built a career in all aspects of cancer nursing. With a special interest in Sarcoma and AYA she established the Bone and Soft Tissue Sarcoma Clinical Nurse Consultancy Service in 2011; a role that included collaboration with Cancer Institute NSW and Canteen Youth Cancer Services. In 2017 Kristyn moved to St George Hospital's Cancer Outreach Program as the Clinical Nurse Consultant providing complex cancer care to patients in the community. She more recently returned to RPA Hospital in a project role capacity before moving back into the Sarcoma and AYA space at Chris O'Brien Lifehouse.

Kristyn holds a Master of Nursing (Cancer and Haematology) and a Graduate Certificate in Adolescent Health and Welfare; she is enthusiastic about providing high quality holistic care to Sarcoma and AYA patients in partnership with the multidisciplinary team.



Radiation Oncology and Radiology

Radiation oncology or therapy uses high-energy rays or particles to kill cancer cells. Radiation can be given before surgery (neoadjuvant treatment) to shrink the tumour and make it easier to remove. It can also be given after surgery (adjuvant treatment) to kill any cancer cells that may be left behind after surgery.

Radiation therapy can also be used to help ease symptoms of sarcoma when it has spread as part of palliative care.

Radiation therapy may be considered in the following circumstances:

- As definitive local therapy in radiosensitive sarcomas such as Ewing sarcoma and rhabdomyosarcoma, in locations where surgery would be considered too morbid
- Before definitive surgery, particularly if surgical resection has a high likelihood of an involved margin, to reduce the risk of local recurrence
- After definitive surgery (and adjuvant chemotherapy, if indicated), if the tumour is high grade and/or known to respond to radiotherapy, where the surgical margins are close, to reduce the risk of local recurrence

The patient will have a consultation with a Radiation Oncologist, who will organise a separate planning CT scan to map and plan the required treatment, usually within a week prior to starting radiation therapy.

Depending on the calculated dosage and fractions, a patient will present every day for 4-6 weeks (excluding weekends and public holidays) for the therapy. Each session takes approximately twenty minutes, including time taken to check-in and check-out of the Radiation Oncology Unit. The patient is reviewed weekly during treatment, and the skin and organs surrounding the target area are closely monitored.

Patients sixteen years and above should be referred to the Radiation Oncologist at the Chris O'Brien Lifehouse. Patients aged fifteen and fourteen years can be assessed per case for suitability of treatment at all facilities. Children aged thirteen years and less must be referred to a Paediatric Radiation Oncologist who specialises in sarcoma at one of the children's hospitals. One exception is for palliative care patients aged twelve years and above for treatment at the Chris O'Brien Lifehouse, if required and appropriate, for ease of the patient's family.

Radiation Therapy occurs at the following hospitals:

- Chris O'Brien Lifehouse
- Children's Hospital at Westmead
- Sydney Children's Hospital

Meet our team: Radiation Oncology



Associate Professor Angela Hong MBBS, Mmed, PhD, FRANZCR

Radiation Oncologist, Chris O'Brien Lifehouse; Visiting Medical Officer, RPA Hospital; Member of the RPA Bone and Soft Tissue Sarcoma Unit; Clinical Professor, University of Sydney

Associate Professor Hong is a radiation oncologist at Chris O'Brien Lifehouse with a strong track record in clinical and basic science research. She has a strong interest in melanoma and skin, bone and soft tissue tumour (sarcoma), lymphoma and stereotactic radiosurgery.

Associate Professor Hong graduated from the University of Sydney and completed her internship in Sydney before travelling abroad. She first gained experience in radiobiology research at the Memorial Sloan Kettering Cancer Centre, New York and at the University of California, Davis before returning to Australia to start her specialist training in radiation oncology. She acquired fundamental molecular biology and cell culture knowledge during her Master and PhD candidatures at the University of Sydney. She continues to apply this knowledge to advancing the field of clinical radiation oncology.

She has been a member of the Multidisciplinary Bone and Soft Tissue Tumour Clinic at Royal Prince Alfred Hospital for the past 15 years. As a clinician scientist, her research focuses on developing innovative radiation therapy technique and combination treatments to improve the outcome of patients with bone and soft tissue tumour. She is a principal investigator of clinical trials in sarcoma. Angela Hong is also an executive board member and co-chair of the scientific advisory meeting of the Australia and New Zealand Sarcoma Association.

Meet our team: Radiology



Dr Julie Schatz MBBS FRANZCR

Staff Specialist Radiologist, RPA Hospital; Member of the RPA Bone and Soft Tissue Sarcoma Unit; Chairperson, Alfred Imaging Group

Dr Schatz completed her Radiology training at Royal Prince Alfred Hospital in 1994, followed by a two-year Fellowship in Musculoskeletal Imaging and MRI at the Hospital for Special Surgery, New York.

Dr Schatz is an active participant in the NSW Bone Tumour Registry group, a Member of the Australian Musculoskeletal Imaging Group (AMSIG) and has been a speaker for International Society for Magnetic Resonance Imaging in Medicine and other international meetings.

She also works with I-MED Radiology mainly at the Mater Hospital and Newtown as Musculoskeletal Radiologist.



Dr Wendy Brown

MBBS, FRANZCR, MPH

Staff Specialist Radiologist, RPA Hospital; Member of the RPA Bone and Soft Tissue Sarcoma Unit

Dr Brown completed her medical degree at the University of NSW and was awarded the Graduation Prize in Surgery. She trained in Radiology at Royal Prince Alfred Hospital and undertook fellowships in Body Imaging at Memorial Sloan Kettering Cancer Centre in New York and Orthopaedic MRI at Hospital for Special Surgery in New York. Dr Brown completed a Master of Public Health from the University of Sydney.

Dr Brown has participated in the Bone and Soft Tissue Sarcoma Unit since 2002. Dr Brown's interests include musculoskeletal, oncology and pelvic imaging.

Medical Oncology -Chemotherapy



Chemotherapy can be either a systemic adjuvant treatment with the primary goal of treating microscopic disease at the time of initial presentation, or as a complement to local treatment by surgery or radiation.

As a local treatment, the goal of chemotherapy is to 'downstage' the tumour enabling surgery or radiation to achieve local disease control sometimes with reduced morbidity. Specialist paediatric medical oncologists develop chemotherapy treatment plans for adolescent and young adults.

In patients who had surgery as their initial treatment and are recommended adjuvant chemotherapy to reduce the risk of metastatic recurrence, this usually takes 3-4 months. Adjuvant chemotherapy will usually take place at the same hospital as for neo-adjuvant chemotherapy. When safe and appropriate, shared care with local hospitals may be explored, to allow a rural patient to receive chemotherapy closer to home, under the guidance of the RPA Sarcoma Service.

Patients sixteen years and above are referred to the Adolescent Medical Oncologist at the Chris O'Brien Lifehouse. Adolescents aged fifteen years will be assessed if most appropriate to be treated in an adult hospital or a children's hospital. Children aged fourteen years and less will be referred to a Paediatric Medical Oncologist who specialises in sarcoma at one of the children's hospitals.

Chemotherapy is administered at the following facilities:

- Chris O'Brien Lifehouse
- Children's Hospital at Westmead
- Sydney Children's Hospital

Once all proposed treatment has been administered, the patient will undergo a full set of End of Treatment scans to determine the success of overall therapy. This includes Plain X-ray, CT scan of the chest, MRI, PET scan, Cardiac Assessment. A joint consultation with the treating Tumour Orthopaedic Surgeon, Medical Oncologist and Radiation Oncologist, with the patient and their family/support person will occur.

Meet our team: Medical Oncology



Dr Vivek Bhadri

MA (Cantab) MBBS (London) PhD (UNSW) FRACP

Paediatric and Adolescent Medical Oncologist, Chris O'Brien Lifehouse: Adolescent Medical Oncologist, Westmead Hospital; Visiting Medical Officer, RPA Hospital; Member of the RPA Bone and Soft Tissue Sarcoma Unit; Clinical Senior Lecturer, University of Sydney

Dr Bhadri is a paediatric and adolescent medical oncologist at Chris O'Brien Lifehouse and RPA. He trained in paediatric oncology in Sydney before completing an AYA fellowship at RPA.

Dr Bhadri has extensive experience with the treatment and management of adolescent and young adult patients with bone and soft-tissue sarcomas, and actively participates in the development and implementation of sarcoma clinical trials.





Associate Professor Peter Grimison

MBBS (Hons) MPH PhD FRACP

Staff Specialist, Medical Oncology, Chris O'Brien Lifehouse: Visiting Medical Officer, RPA Hospital; Member of the RPA Bone and Soft Tissue Sarcoma Unit; Clinical Associate Professor, University of Sydney

Associate Professor Grimison is a Staff Specialist in Medical Oncology at the Chris O'Brien Lifehouse in Sydney, Visiting Medical Officer at RPA, and Clinical Associate Professor at the University of Sydney.

His clinical work focuses on testicular cancer, other genito-urinary cancers, and upper gastro-intestinal cancers. He serves as a member of the Australian Government Pharmaceutical Benefits Advisory Committee, and a number of other Federal and NSW Government committees. He is also committed to teaching as coordinator of Advanced Training in Medical Oncology at Chris O'Brien Lifehouse, and also actively teaches in Basic Physician Training and the University of Sydney Medical Program.

As a member of the Sarcoma Unit, Associate Professor Grimison reviews patients for consideration of chemotherapy and other systemic therapies, contributes to multi-disciplinary assessment and management decisions, contribute to research databases and recruits patients to clinical trials.



Pathology

The Department of Tissue Pathology and Diagnostic Oncology, Royal Prince Alfred Hospital, provides the diagnostic histopathology service for the Bone and Soft Tissue Sarcoma Unit, and as such provides diagnoses for patients from Royal Prince Alfred Hospital, Chris O'Brien Lifehouse, as well as a state-wide and national consultation service.

The expert sarcoma pathologists are Dr Rooshdiya Karim, Dr Peter Luk, Dr Andrew Colebatch and Dr Alison Potter. The department categorises sarcoma utilising cytology, histology, immunohistochemistry, fluorescence in-situ hybridisation and molecular testing. The Department is heavily involved in sarcoma research projects, and contributes to the education of medical students, pathology trainees and surgical trainees including orthopaedic trainees. In regard to sarcoma, members of the department also present at national and international conferences, and contribute to the WHO Classification of Tumours.



In memory of Dr Annabelle Mahar

Dr Mahar was a much loved, highly respected and world-renowned member of RPA's Tissue Pathology Department.

After graduating from Medicine at Adelaide University in 1992, Dr Mahar undertook her pathology training at IMVS Royal Adelaide Hospital and Glasgow Royal Infirmary in Scotland.

She completed pulmonary pathology fellowship with Professor Victor Roggi at Duke University Medical Centre in North Carolina, USA.

She worked at a number of laboratories in the USA, UK and Australia, building a wide international circle of friends before joining RPA in 2008.

Dr Mahar was an outstanding and dedicated pathologist with exceptional diagnostic acumen, especially in her two main areas of expertise, namely pulmonary pathology and bone and soft tissue tumours.

Her opinion was highly valued by pathologists physicians and surgeons alike who all held her in the highest regard. Pathologists would often consult her about cases that no one else could solve.

Annabelle was involved in numerous collaborative research projects, in the District and across Australia, including studies on interstitial lung disease, lung cancer and sarcomas.

She was a generous and devoted teacher to countless trainees as well as other pathologists.

Meet our team: Pathology



Associate Professor Rooshdiya Karim

MBBS (Hons I), FRCPA, PhD

Pathologist, Staff Specialist, RPA Hospital; Member of the RPA Bone and Soft Tissue Sarcoma Unit

Dr Rooshdiya Karim graduated from the University of Sydney in 2000 with Class 1 Honours and 11 awards. She trained in anatomical pathology at RPA Hospital, obtaining her Fellowship with the Royal College of Pathologists of Australasia in 2006. She was awarded the Eddie Hirst Medal for the highest score achieved by an Australian candidate in The Royal College of Pathologists Australasia Pathological Sciences Examination.

She has been a Staff Specialist in the Department of Tissue Pathology and Diagnostic Oncology at RPA Hospital since 2006. She completed a Doctorate of Philosophy in Medicine with the University of Sydney in 2010 on phyllodes tumours, which are a sarcomatoid malignancy occurring in soft tissue of the breast. Previously, she was a Cancer Institute of NSW Clinical Fellow studying melanoma and was awarded a Cancer Institute of NSW Clinical Research Fellowship for three years to investigate phyllodes tumours.

Dr Karim has over 16 years of experience in the field of sarcoma pathology as a staff specialist and was trained and mentored in bone, soft tissue and skin pathology by Professor Stan McCarthy AO.

She is nationally recognised with over 50 publications in peer reviewed journals and many ongoing cuttingedge research projects. She has presented numerous talks on bone and soft tissue tumours and skin. The combination of soft tissue and skin expertise is particularly valuable diagnostically, and Dr Karim is an author in both current and upcoming editions of the WHO Classification of Tumours of Skin and the WHO Classification of Tumours of Breast. She is also actively involved in registrar education and is the convenor of the Royal College of Pathologists Australasia's Anatomical Pathology registrar education program.

Meet our team: Pathology



Dr Peter Luk BMedSc (Hons), MBBS (Hons), PhD, FRCPA

Pathologist, Staff Specialist, RPA Hospital; Clinical Senior Lecturer, Central Clinical School, The University of Sydney; Member of the RPA Bone and Soft Tissue Sarcoma Unit

Dr Luk is an anatomical pathologist at Royal Prince Alfred Hospital. He is a medical graduate of the University of Tasmania in 2003 and received his PhD in cancer cell biology and pharmacology from the University of New South Wales in 2011. In his doctoral research, he explored epidermal growth factor receptor (EGFR) signalling pathway in lung cancer and the optimisation of targeted therapy. EGFR is also highly expressed in soft tissue sarcomas and has been proposed as a potential treatment target, underlining that knowledge in EGFR signalling will be pivotal in future research in this field.

Following the completion of his PhD, he joined Professor Philip Hogg's Cancer Drug Discovery group at the Lowy Cancer Research Centre where he gained further experience in cancer drug development and molecular biology.

Subsequently, he trained in anatomical pathology at RPA Hospital and received his Fellowship from the Royal College of Pathologists of Australasia in 2017.

He has significant expertise in soft tissue and bone pathology, and head and neck pathology as well as molecular pathology. His current research includes identifying novel therapeutic targets in sarcomas and rare head and neck cancers as well as immunotherapy in sarcomas.

Dr Luk has over 20 publications in peer-reviewed journals and has been invited to speak at the annual national Pathology Update Conference. He is heavily involved in registrar education within the department as well as within New South Wales, regularly teaching at the RCPA Pathology for All Slides Seminars and University of Western Sydney Cytology Workshop.



Dr Andrew Colebatch BSc(Med) (Hons) MBBS (Hons) UNSW PhD Melb FRCPA

Anatomical Pathologist, Staff Specialist, RPA Hospital; Clinical Senior Lecturer, School of Medical Sciences, The University of Sydney; Member of the RPA Bone and Soft Tissue Sarcoma Unit

Dr Andrew Colebatch graduated from the University of New South Wales and underwent training in Anatomical Pathology in Royal North Shore Hospital, Royal Prince Alfred Hospital and Peter MacCallum Cancer Centre. During his training he undertook a PhD in melanocytic genomic pathology through the University of Melbourne. After obtaining Fellowship with the RCPA in 2018 he then completed the prestigious yearlong Jani Haenke Melanoma Pathology Fellowship at the Melanoma Institute of Australia.

He has written more than 30 peer reviewed articles and has contributed to the next edition WHO Classification of Skin Tumours. He is involved in teaching Anatomical Pathology registrars as well as Orthopaedic registrars through the NSW Bone Tumour Bone School. He also teaches sessions bone pathology to medical students at the University of Sydney. His key areas of clinical expertise include bone and soft tissue pathology, melanocytic pathology and molecular pathology. Additional interests include the utility of genomic sequencing in difficult to classify neoplasia. His research is currently investigating the diagnostic utility of sequencing customized gene panels in borderline melanocytic neoplasms.



Dr Alison Potter

BSc(Adv) (Hons I, Medal), MBBS (Hons I), FRCPA, AFHEA

Pathologist, Staff Specialist, RPA Hospital; Adjunct Lecturer, University of New South Wales; Member of the RPA Bone and Soft Tissue Sarcoma Unit

Dr Alison Potter graduated with Honours and University Medal (Immunology) in a Bachelor of Science (Advanced) degree through the University of Sydney in 2010. On completing a Bachelor of Medicine and Surgery with Honours in 2014, she was awarded the prestigious Dr HG Chapman Prize for her research. She undertook anatomical pathology training at Prince of Wales Hospital, with rotations including Royal Prince Alfred Hospital. On attaining fellowship in 2021, she was awarded a highly regarded Melanoma Pathology Fellowship through the Melanoma Institute Australia and RPA, before commencing as Staff Specialist in 2022.

Dr Potter's chief sub-specialty interests include bone Joint Diseases, Orthopaedic Institute, New York. and soft tissue pathology and dermatopathology, and She has practiced as an Anatomical Pathologist with for a number of years she has been actively involved a special interest in Orthopaedic and Musculoskeletal in teaching trainees and medical students in the Pathology at the Douglass Hanly Moir Pathology pathological basis of disease. Her recent research Practice in Sydney for 30 years and has been an has been published in peer-reviewed journals, with Honorary Consultant in Orthopaedic Pathology at RPA recognition in national and international forums. Dr Hospital. She is an Adjunct Professor of Pathology at Potter has recently joined the RPA Bone and Soft Tissue the School of Medicine, University of Notre Dame and Sarcoma Unit, where she aims to improve diagnosis Clinical Associate Professor at Macquarie University. and prognostication of sarcomas through integrated molecular techniques. Professor Bonar has more than 80 peer reviewed



Professor Fiona Bonar OAM

MB, B.Ch, BAO, DCH, (NU Ireland), DObs, (RCPI), FRCPI, FRCPath (Lond) FFOP (RCPA), FRCPA

Honorary Consultant in Orthopaedic Pathology, RPA Hospital; Pathologist, Douglas Hanly Moir Pathology; Member of the RPA Bone and Soft Tissue Sarcoma Unit; Adjunct Professor of Pathology, School of Medicine, University of Notre Dame; Clinical Associate Professor, Macquarie University

Professor Fiona Bonar graduated with Honours from the National University of Ireland in 1977. She is a fellow of the Royal College of Physicians of Ireland, the Royal College of Pathologists (London) and the Royal College of Pathologists of Australasia. Having completed clinical training in Internal Medicine in Ireland, she trained in Anatomical Pathology at St James Hospital in Dublin, before becoming Chief Resident in Surgical Pathology at the New York Hospital, Cornell Medical Center in New York, and completing a two year Fellowship in Orthopaedic Pathology at The Hospital for Joint Diseases, Orthopaedic Institute, New York.

Professor Bonar has more than 80 peer reviewed journal publications, mostly on musculoskeletal disease. She has written several book chapters and was an editor of the AFIP Fascicle on Non Tumour Orthopaedic Pathology. She is a contributing author in the WHO Classification of Bone and Soft Tissue Sarcoma.

She is a member of the International Skeletal Society where she has been the recipient of several awards and in 2017 was awarded the Medal of the Order of Australia for her services to Medicine, in particular Orthopaedic Pathology.

Meet our team: Pathology



Associate Professor Fiona McLean MBBS (Hons), BAppSc, FRCPA, GAICD

Deputy Director, Histopathology, Douglas Hanly Moir Pathology; Senior Lecturer, School of Medicine, University of Notre Dame; Lecturer, Macquarie University; Member of the RPA Bone and Soft Tissue Sarcoma Unit

Associate Professor Maclean graduated from the University of Sydney with first class honours. She worked as a resident medical officer at Concord Repatriation General Hospital, where she was awarded Intern of the Year in 1999. Associate Professor Maclean is Deputy Director of Histopathology at Douglass Hanly Moir Pathology. She is passionate about teaching pathology and enjoys presenting lectures to people from all walks of life. She is a Senior Lecturer in Pathology at the School of Medicine, University of Notre Dame, and Lecturer in Pathology at Macquarie University. She is co-author of two chapters in the current edition of Sternberg's Diagnostic Surgical Pathology, one of the premier textbooks of pathology. Associate Professor Maclean is currently the Secretary of the Australasian Division of the International Academy of Pathology. Her special interests include anatomical pathology, cytopathology, focusing on urological pathology, bone and soft tissue pathology.



Dr Alison Cheah MBBS FRCPA

Pathologist, Douglas Hanly Moir Pathology; Member of the RPA Bone and Soft Tissue Sarcoma Unit

Dr Alison Cheah is a pathologist at Douglass Hanly Moir with a special interest in bone and soft tissue pathology. She has worked with the RPA Bone and Soft Tissue Sarcoma Unit since 2014. Dr Cheah trained in anatomical pathology at Cleveland Clinic in Cleveland, Ohio, in the United States and completed her Fellowship in bone and soft tissue pathology at Cleveland Clinic in 2013, during which time she gained considerable experience from the busy national and international diagnostic consultation service there. Dr Cheah has presented and published a number of first or senior author papers on soft tissue tumours both nationally and internationally and continues to be actively involved in research and teaching. Her special interests include bone and soft tissue pathology, immunohistochemistry, gastrointestinal and breast pathology.



Dr Christina Vargas MD, PhD, FRCPA

Pathologist, Douglas Hanly Moir Pathology; Member of the RPA Bone and Soft Tissue Sarcoma Unit

Dr Cristina Vargas joined the specialist training in anatomical pathology with the RCPA, undergoing rotations in several hospitals in Brisbane (Princess Alexandra, Royal Brisbane and Women's Hospital and Forensic and Scientific Services) and in Sydney (Royal Prince Alfred and Westmead Hospitals), including a molecular pathology registrar position at RPA Hospital. After becoming a fellow of the College in 2015, she did a fellowship in molecular pathology at RPA Hospital, where she also developed experience in the fields of head and neck, breast and skin pathology. Dr Vargas also has a research background applied to the discipline of anatomical pathology and holds a PhD in breast molecular pathology. Her main areas of interest mainly include breast, haematopoietic, soft tissue and gastrointestinal tract, with ongoing interest in immunohistochemistry and in the application of molecular techniques to tissue diagnosis.



Dr Martin Jones

BSc, MBBS, FRCPA

Pathologist, Douglas Hanly Moir Pathology; Member of the RPA Bone and Soft Tissue Sarcoma Unit

Dr Martin Jones graduated from the University of Sydney in 2007 and worked in clinical medicine at Wollongong and Royal Prince Alfred Hospitals, with a particular interest in oncology. He trained in anatomical pathology at Concord Repatriation General Hospital and, in 2014, spent a year at Massachusetts General Hospital, Boston. He is interested in all areas of anatomical pathology, with a particular interest in genitourinary pathology and gastrointestinal pathology. Dr Jones has been involved in the publication of peerreviewed journal articles and teaching of junior doctors and medical students. After obtaining Fellowship of the Royal College of Pathologists of Australasia, he joined Douglass Hanly Moir Pathology in February, 2018.

Research and Clinical Trials

Research, clinical trials and surgical technological advancements are a key component to the growth of the RPA Sarcoma Service.

Research, clinical trials and surgical technological advancements are a key component to the growth of the RPA Bone and Soft Tissue Sarcoma Unit.

Research fields include the identification of innovative surgical treatments aimed at improving surgical outcomes, patient reported outcomes including quality of life and long-term survivorship, customised 3D printing prostheses, clinical trials of novel agents, preclinical studies to identify patients at higher risk of relapse, and data linkage studies.

To support the expansion of surgical research, the RPA Bone and Soft Tissue Sarcoma Unit, together with the Institute of Academic Surgery (IAS) and Surgical Outcomes Research Centre (SOuRCe), manage a centralised electronic database containing information about all procedures performed under the service. Extensive patient information, type of sarcoma, surgical outcomes, quality of life, patient experience and survivorship data are currently captured. This enables close monitoring and reporting of the patient, clinician, and organisational level. The primary aims of the RPA Soft Tissue Sarcoma database are to establish and maintain an ongoing comprehensive clinical and outcomes database that will:

- 1. Provide data for internal monitoring and reporting of all sarcoma procedures;
- 2. Support quality improvement activities;
- 3. Identify areas where further or new research is needed;
- 4. Provide data for future sarcoma research projects and collaboration.

The RPA Bone and Soft Tissue Sarcoma Unit has several national and international collaborations, including the Australian New Zealand Sarcoma Association (ANZSA), which comprises of a community of Sarcoma Specialists, whose vision and effective collaboration is aimed at improving the outcomes for sarcoma patients, through education, research and awareness.





Research Partnerships

Sydney Local Health District works in close partnership with the University of Sydney to support research that enhances clinical practice.

There are academic appointments in sarcoma in partnership with the University of Sydney.

The advancement of the diagnoses and treatment of sarcoma will be a key part of the Sydney Biomedical Accelerator.

The Sydney Biomedical Accelerator

The Sydney Biomedical Accelerator (SBA) is a state-of-the-art biomedical and innovation research complex linking The University of Sydney and Royal Prince Alfred Hospital.

The SBA is a partnership initiative between the NSW Government, Sydney Local Health District and the University of Sydney that will bring together clinicians, researchers, academics and industry collaborators to integrate fundamental research with patient-centred research.

Together, we will solve some of the world's most complex problems and shorten the time between discovery and improved health outcomes.

The SBA will be positioned to dynamically collaborate with industry and start-ups as part of a world leading hospital, university and tech innovation ecosystem.

sydneybiomedicalaccelerator.org

For more information contact Sydney Research: SLHD-SydneyResearch@health.nsw.gov.au

Meet our team: Research





Cherie Fischer

Data Manager and Clinical Trials Coordinator; Member of the RPA Bone and Soft Tissue Sarcoma Unit

With a Bachelor of Education, Cherie's genuine interest in people soon lead her to the health sector. Having worked for several years within Orthopaedics, a move across to Data Manager for the Bone and Soft Tissue Sarcoma Unit at Royal Prince Alfred Hospital was an obvious transition. Cherie enjoys being part of a dedicated team that strive to make a real difference to people's lives. She brings strong organisational skills and attention to detail to her role.

Data collation plays a vital role in advances in cancer care, which provides Cherie with tremendous personal satisfaction.



Kate Alexander BSc(MedSci)/BAdvStudies(Hons)

Research Manager, Surgical Outcomes Research Centre (SOuRCe), Orthopaedic Department; Member of the RPA Bone and Soft Tissue Sarcoma Unit

Kate is a Research Manager for Surgical Outcomes Research Centre (SOuRCe) which is overseen by the RPA Institute of Academic Surgery (IAS). She has completed a Bachelor of Medical Science and Bachelor of Advanced Studies (Honours) with the University of Sydney in 2021. Kate brings research experience and expertise to the unit, managing a number of research staff and overseeing over 60 multidisciplinary surgical research projects within the Orthopaedic Department and the RPA Bone and Soft Tissue Sarcoma Unit. She has a strong passion for surgical research, with interests in implementing evidence-based research into clinical practice to improve health outcomes.



Darya Shapilsky

Data Officer; Member of the RPA Bone and Soft **Tissue Sarcoma Unit**

Darya joined RPA Bone and Soft Tissue Sarcoma Unit in October 2022 as a Data Officer. She holds a Bachelor of Medical Science degree from the University of Technology, Sydney and has worked in a variety of medical industries including dentistry, ENT, and neurology and has been a part of Royal Prince Alfred Hospital since 2016. Through these experiences, Darya has developed a passion for health research and her aspiration is to contribute to Orthopaedic sarcoma research and improve patient quality of life.

RPA Virtual Hospital

Launched in February 2020, RPA Virtual Hospital is the first virtual hospital in Australia operating 24 hours a day, 7 days a week.

RPA Virtual Hospital (**rpa**virtual) delivers hospital level care in the comfort and convenience of a patient's home, using digital technology to provide remote monitoring, clinical assessment and care, as well as specialised in-home nursing and allied health services.





RPA Virtual Hospital offers a new 24/7 Sarcoma support service for all Sarcoma patients. The multidisciplinary Virtual Care Centre is a clinical contact point for Sarcoma patients, their families and carers. Clinician support is available for care navigation, referral, escalation to specialist practitioners, and general clinical advice. Psychology and social work services are also available.



Palliative Care and Support

At any point of treatment and thereafter, patients can be referred to the Supportive and Palliative Care team for a range of therapies, including but not limited to:

- Pain management throughout treatment and thereafter
- Symptom management throughout treatment and thereafter
- Quality of life practices
- End of life care

There is a smooth transition of care from paediatric to adolescent and young adult, facilitated through a comprehensive medical and nursing handover from adults and paediatric case managers services.

The RPA Orthopaedic Tumour Surgeons are intimately involved in the provision of care for Paediatric patients and will follow the patient right through to the adolescent phase.



Sydney Local Health District

There are a range of organisations to help support patients, their families and friends including:

- Cancer Institute NSW
- NSW Cancer Council
- Cooper Rice-Brading Foundation
- Rare Cancers Australia

External organisations specific for paediatrics and adolescent and young adults including:

- Youth Cancer Service
- Canteen
- Redkite
- Starlight Children's Foundation
- Sony Foundation

Referral

Clinicians can make a referral to the RPA Bone and Soft Tissue Sarcoma Unit either through the sarcoma Clinical Nurse Consultant (CNC) or directly to one of the three Tumour Orthopaedic Surgeons.

General Practitioners may also direct their patient to their local Orthopaedic Surgeon, Emergency Department or through the well-established statewide Orthopaedic Network.

One the referral is received, the patient's case will be reviewed and additional tests organised. A full set of investigations usually includes: X-ray; MRI scan of the tumour; CT scan of the chest; PET scan.

Initial consultation with the patient occurs with the family/support person present. A biopsy of the tumour will then be performed. This is conducted by the tumour Orthopaedic Surgeon or via a CTguided biopsy by an Interventional Radiologist.

Contact

RPA Bone and Soft Tissue Sarcoma Unit

Clinical Nurse Consultant Phone: 0467 730 463 Email: slhd-sarcoma@health.nsw.gov.au

Tumour Orthopaedic Surgeons

Dr Richard Boyle Phone: 02 8064 0310 or 02 8064 0311 Email: info@boyleorthopaedics.com Suite 101, RPA Hospital Medical Centre

Dr Maurice Guzman Phone: 02 9025 0873 Email: info@guzmanortho.com.au Suite 101, RPA Hospital Medical Centre

Dr Daniel Franks Phone: 02 9998 8255 Email: info@franksortho.com Suite 101, RPA Hospital Medical Centre

slhd.health.nsw.gov.au/rpa/services/sarcoma





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