Financial Year Report 2024/25

Peritoneal Malignancy Program

Sydney Local Health District

7th Edition

Acknowledgement of Country

Sydney Local Health District acknowledges that we are living and working on Aboriginal land. We recognise the strength, resilience and capacity of Aboriginal people on this land. We would like to acknowledge all of the traditional owners of the land and pay respect to Aboriginal Elders past and present.

Our District acknowledges *Gadigal*, *Wangal* and *Bediagal* as the three clans within the boundaries of the Sydney Local Health District. There are about 29 clan groups within the Sydney metropolitan area, referred to collectively as the great ***Eora Nation. Always was and always will be Aboriginal Land.***

We want to build strong systems to have the healthiest Aboriginal community in Australia.

Together under the Sydney Metropolitan Partnership Agreement, including the Aboriginal Medical Service Redfern and in collaboration with the Metropolitan Local Aboriginal Land Council, Sydney Local Health District is committed to achieving equality to improve self-determination and lifestyle choices for our Aboriginal community.

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.

Our story

Sydney Local Health District's Aboriginal Health story was created by the District's Aboriginal Health staff.

The map in the centre represents the boundaries of Sydney Local Health District. The blue lines on the map are the Parramatta River to the north and the Cooks River to the south which are two of the traditional boundaries.

The *Gadigal*, *Wangal* and *Bediagal* are the three clans within the boundaries of Sydney Local Health District. They are three of the twenty-nine clans of the great ***Eora Nation***. The centre circle represents a pathway from the meeting place for Aboriginal people to gain better access to healthcare.

The Goanna or *Wirriga*
One of Australia's largest lizards, the goanna is found in the bush surrounding Sydney.

The Whale or *Gawura*
From June to October pods of humpback whales migrate along the eastern coastline of Australia to warmer northern waters, stopping off at Watsons Bay the traditional home of the Gadigal people.

The Eel or *Burra*
Short-finned freshwater eels and grey Moray eels were once plentiful in the Parramatta River inland fresh water lagoons.

Source: Sydney Language Dictionary

Artwork

Ngurang Dali Mana Burudi — a place to get better

The map was created by our Aboriginal Health staff telling the story of a cultural pathway for our community to gain better access to healthcare.

Artwork by Aboriginal artist Lee Hampton utilising our story.

CONTENTS

1. Executive Summary

The purpose of this report is to provide a summary of the provision of cytoreductive surgery often combined with hyperthermic intraperitoneal chemotherapy (CRS and HIPEC) within the Peritoneal Malignancy Program at Royal Prince Alfred (RPA) Hospital, Sydney Local Health District (SLHD) for the 2024/25 financial year.

From April 2017 to June 2025, 649 patients have been treated within the Peritoneal Malignancy Program. Of these, 586 patients were treated with combined CRS and HIPEC, averaging approximately six procedures per month. Within the 2024/25 financial year, the monthly average of CRS and HIPEC procedures was slightly increased to approximately seven cases. The Peritoneal Malignancy Program is achieving outcomes on par with other international centres and the 600th overall cytoreductive surgery (with or without HIPEC) case was performed in November 2024.

During the 2024/25 financial year, the Peritoneal Malignancy Program at RPA reviewed details of 257 patients referred for potential treatment through the multidisciplinary team (MDT) meeting. Overall, 88 combined CRS and HIPEC procedures were undertaken, which included four patients who underwent redo surgeries and three patients who underwent a combined CRS and HIPEC and pelvic exenteration procedure.

Since its inception in 2017, the Peritoneal Malignancy Program has been fortunate enough to have been proctored by Prof Brendan Moran at Basingstoke Hospital, UK. This report presents the first financial year of the program not being proctored, which ceased in 2023. Thanks to the support provided by Prof Moran, the Peritoneal Malignancy Program at RPA has continued to thrive and expand, while maintaining a close relationship with Basingstoke Hospital through research collaboration that aims to improve international outcomes. It is anticipated that this relationship will continue both clinically and through collaborative research, expanding to encompass a greater number of international centres.

The Peritoneal Malignancy Research and Clinical Audit Program has continued their international proliferation with 42 research projects currently being conducted. These studies incorporate surgical outcomes, survival rates, quality of life, decision-making, nutrition, depression, anxiety, stress, physical activity, treatment, health services utilisation and costs. The team has also published 17 peer-reviewed research manuscripts and presented 9 times at national and international conferences during this reporting period. With over $5.5 million in research grants funding clinical trials, the Peritoneal Malignancy Program has been recognised as uniquely poised to support high quality research and provide effective research supervision. There are currently two MD and three higher degree by research (HDR) students being supervised.

Indeed, the RPA Peritoneal Malignancy Program continues to be one of the fastest expanding CRS and HIPEC services ever developed and is a tribute to the vision and support of NSW Health, the expertise and “can-do” approach of SLHD and RPA senior management and the skill of medical, nursing, allied health and research teams.

The development and future expansion of the service requires additional capacity and resources, particularly as demand increases annually, with a further growth of at least 2% in activity anticipated for the upcoming financial year. A further challenge is the increasing number of patients who require re-do surgery for recurrence. Patient outcomes and novel quality of life evidence, along with data on the effectiveness and cost-effectiveness of CRS and HIPEC, continue to be a focus of this critical surgical oncological service.

Prof Michael Solomon
Chair, Advanced Gastrointestinal Surgical Program
SLHD

Dr Nabila Ansari
Lead, Peritoneal Malignancy Program
RPA Hospital

1.1 Lay summary

Royal Prince Alfred Hospital in Sydney has completed its eighth full year of providing specialised surgical treatment for patients with certain types of cancer that have spread within the abdominal cavity, defined as peritoneal metastases. This treatment, better known as cytoreductive surgery, which is often combined with hyperthermic intraperitoneal chemotherapy (CRS and HIPEC), is an established treatment modality and demand continues to escalate within the Peritoneal Malignancy Program at RPA.

The service clinical team reviewed 257 patients and performed 88 combined CRS and HIPEC procedures this year, maintaining an average of about seven cases per month. Since its inception in 2017, 649 patients have been treated within the Peritoneal Malignancy Program. Of these, 586 patients have been treated with combined CRS and HIPEC, with outcomes on par with other international centres. While it is common for patients to experience some complications after surgery, these are generally manageable, and the in-hospital mortality rate remains low at less than 1%. Patient quality of life remains a key focus, with most patients returning to pre-surgery levels within 12 months, despite an initial decrease immediately following the procedure.

Research remains a strong component of the Peritoneal Malignancy Program, and outcomes that improve oncological outcomes and quality of life with respect to physical and mental scores, remain a priority. With 42 ongoing research projects, 17 scientific publications produced and 9 presentations at national and international conferences this financial year, the program has continued its proliferation in the peritoneal malignancy area. With over $5.5 million in research grants funding clinical trials, the Peritoneal Malignancy Program has supported high quality research and continues to provide effective research supervision to medical and higher degree by research students.

Education and training are an important part of the program, including a senior nursing program, and hosting international visitors to observe and learn from the RPA experience. The service continues to grow, projecting a 2% increase in cases for the coming year, which will require additional resources and capacity.

The report credits the success to support from NSW Health, hospital management, and the skilled teams involved. It portrays a thriving specialised surgical service that not only provides crucial care for patients with complex cancers but also contributes significantly to research and education in this field.

1.2 Impact of program

As an international centre for excellence, RPA is a major provider of expert and specialised clinical care to patients requiring highly complex medical and surgical interventions. It is therefore crucial that the knowledge attained during the care of these patients is evaluated and translated into clinical practice to improve overall service provision. The program has a heavy focus on academic surgery and translation of research findings that has led to continuous quality improvement and ensured patients receive evidence-based care aligned with the latest research. The program's comprehensive data collection through the peritonectomy surgical research program (PREMIER) database facilitates ongoing audit, reporting and research to drive improvements in clinical practice and patient outcomes.

The Peritoneal Malignancy Program proactively seeks to improve the care of patients through consistent reflection on clinical practice in the context of short- and long-term clinical and patient-reported outcomes following surgery. This is achieved through various means, including collecting and analysing patient feedback via surveys and qualitative interviews to understand the patient experience and identify areas for improvement. The results of these audits are provided to members of the program and are used to continue quality improvement activities integral to the ongoing success and improved outcomes for patients. Importantly, reporting of surgeries performed are conveyed to the SLHD Performance Unit to ensure accurate monitoring of these highly complex surgeries, as well as reporting of outcomes to the SLHD Executive Unit to facilitate appropriate oversight of the Peritoneal Malignancy Program. The program also engages consumers in research planning and design, holding regular meetings with past patients and community representatives to receive input regarding research priorities and study designs.

Comprehensive patient-reported outcomes data, including quality of life measures, are collected at 11 time points from pre-surgery to five years post-surgery. This allows tracking of patient outcomes over time to inform clinical care. Implementation science studies are conducted to identify barriers and facilitators to adopting evidence-based practices and to develop strategies to improve uptake in routine clinical care. To ensure the continued applicability and acceptability of the program’s research priorities, consumers are engaged in research planning and design, holding regular meetings with past patients and community representatives to receive input regarding research topics and study designs.

Regular multidisciplinary team meetings are held to review cases and discuss how to integrate new evidence into practice. Ongoing education and training are provided to clinical staff on latest evidence and best practices through workshops, seminars and the Advanced Gastrointestinal Surgical Nursing Training Program, which is currently undergoing evaluation.

Dissemination of knowledge and research findings is a key focus of the program. The annual Peritoneal Malignancy Education Day serves as a platform to share insights and updates with staff across multiple specialties within RPA. Team members regularly present at national and international conferences, such as the Peritoneal Surface Oncology Group International (PSOGI) Congress on Peritoneal Surface Malignancies, to share their experiences and research findings with the global peritoneal malignancy community. In-service presentations are conducted to ensure that ward staff and junior doctors are kept up-to-date with the latest developments in patient care.

The program has a strong track record of publishing high-impact scientific manuscripts. These publications cover a wide range of topics including surgical outcomes, patient-reported outcomes, nutritional support, and implementation of evidence-based practices. Through this work, dissemination to a broad audience of clinicians and researchers worldwide can be achieved, thereby facilitating translation of findings into practice. Patients also have the opportunity to participate in the latest clinical trials aimed at establishing the effectiveness and cost-effectiveness of innovative interventions. These trials not only contribute to the advancement of medical knowledge but also provide patients with access to innovative, evidence-based treatments and care approaches. To facilitate close monitoring of these trials and assist with understanding the profile of patients participating in these studies, ongoing reporting to the Cancer Institute of NSW (CINSW) is undertaken.

2. Introduction

2.1 Purpose of this report

The purpose of this report is to provide a comprehensive overview of the provision of Peritoneal Malignancy Program at Royal Prince Alfred (RPA) Hospital within Sydney Local Health District (SLHD) for the 2024/25 financial year.

With the first CRS and HIPEC case undertaken at RPA in April 2017, this report covers the eighth full year of operation for the program.

2.2 Funding arrangements

Following a ‘Request for Proposal’ issued by the System Purchasing Branch of NSW Health, the second statewide CRS and HIPEC service for NSW was awarded to RPA in October 2016.

For many years, the funding for the program was overseen by the Highly Specialised Services Committee of NSW Health with the original funding agreement determined for RPA to undertake 60 CRS and HIPEC cases per financial year, noting this would increase each year. This activity was covered by a combination of activity-based funding (ABF) allocated through the National Weighted Activity Units (NWAU) per case and additional enhancement funding in recognition of the complexity of the program. Following the development of a new peritonectomy DRG code in 2023, funding is solely allocated through ABF.

3. Governance

3.1 Advanced Gastrointestinal Surgical Program

The Advanced Gastrointestinal Surgical Program (AGISP) is overseen by the RPA Institute of Academic Surgery (IAS) as one of the key programs within its Innovation, Value and Thought portfolio. This incorporates the management of the Peritoneal Malignancy, Pelvic Exenteration, Retroperitoneal Sarcoma, and Advanced Upper Gastrointestinal Malignancy programs.

The overarching committee responsible for this program is the 'AGISP Steering Committee' which commenced in November 2016 and is chaired by the AGISP Program Director, who is also Co-Chair of the IAS. The committee meets every second month and has representation from Heads of Department, key staff across all clinical departments and all areas involved in the Peritoneal Malignancy, Pelvic Exenteration, Retroperitoneal Sarcoma, and Advanced Upper Gastrointestinal Malignancy programs.

The governance structure is outlined in **Figure 1** and the clinical departments involved in the program are outlined in **Figure 2**.

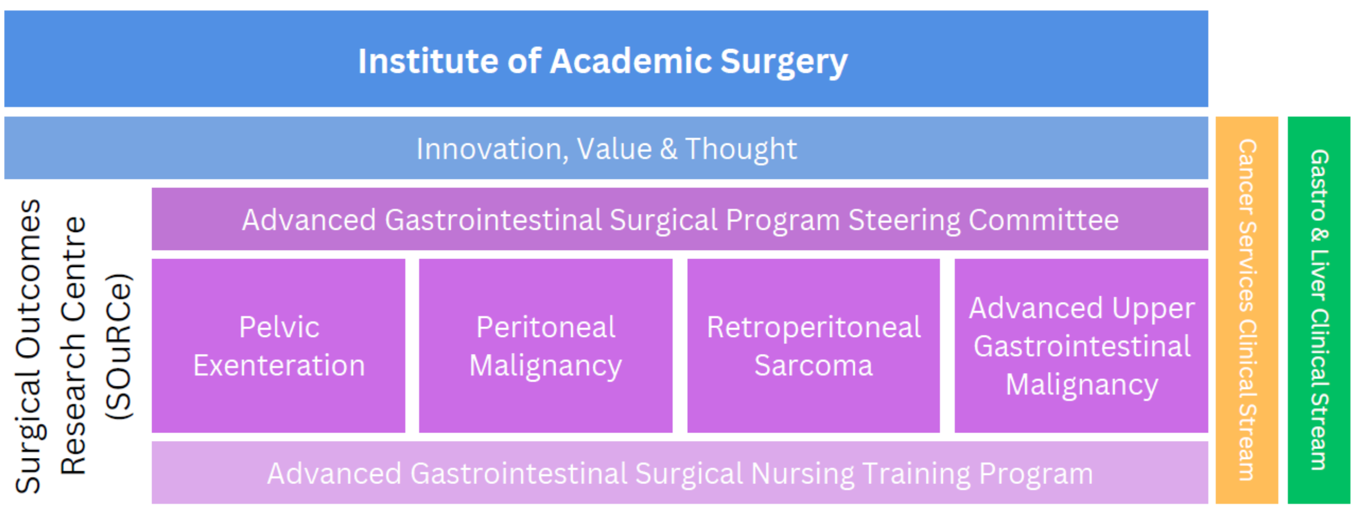


Figure 1. Advanced Gastrointestinal Surgical Program governance structure

Figure 2. Clinical departments involved in the AGISP at RPA

The AGISP Steering Committee is also an educational and communication platform whereby clinical departments are given the opportunity to present on their involvement with the complex group of advanced gastrointestinal surgical patients including the challenges they face, the research being undertaken, new models of care or treatments being implemented and future requirements.

The presentations made at the Committee meetings in the 2024/25 financial year are outlined in **Table 1.**

Table 1. Presentations at the Advanced Gastrointestinal Surgical Program Steering Committee in the 2024/25 financial year

Meeting Date	Presentation Topic	Presenter(s)
07/08/2024	Highly specialised service supplemental funding, staffing and strategic direction	Dr Sophie Hogan
02/10/2024	Colorectal cancer liver metastases (CRCLM) and treatment at RPA	Dr David Yeo
04/12/2024	A pilot, Pragmatic, Registry-embedded, open-label, randomised controlled trial of oral Oxycodone versus Sublingual buprenorphine for postoperative pain control after Pelvic ExenteRation (PROSPER-P)	Dr Charlotte Johnstone
	Beyond the scalpel: The overlooked role of nutrition in soft tissue sarcoma	Ms Kathryn Cherry
05/02/2025	Intestinal Failure (IF) and Parenteral Nutrition Service update	Dr Belinda Errington
02/04/2025	Impact of frailty on surgical outcomes, survival and quality of life following cytoreductive surgery	Dr Rihan Shahab
04/06/2025	Reflection on the Advanced Gastrointestinal Surgical Service Program	Prof Michael Solomon

The Peritoneal Malignancy Surgical Research and Clinical Audit Program is governed by the Surgical Outcomes Research Centre (SOuRCe) in partnership with the IAS. SOuRCe is responsible for the collection of clinical data of all patients undergoing CRS and HIPEC at RPA, including the consent of patients to enrol in a prospective quality of life cohort study and collecting patient reported outcomes at 11 distinct time points from the preoperative period to five years post CRS and HIPEC. SOuRCe also oversees all research activities within the program, including student supervision, conference presentations, external grant applications, establishment of innovative clinical trials, benchmarking of outcomes, consumer feedback integration, and scientific publications. Additionally, SOuRCe is responsible for delivering the in-service educational sessions, which bridges the gap between research and clinical practice by engaging ward-based clinical staff with current research initiatives and facilitating the translation of research findings into evidence-based patient care, ensuring that the latest scientific discoveries directly inform and enhance clinical practice. By providing critical clinical audit data for reporting of health and financial outcomes to the Department of Health, SOuRCe continues to play an integral role in the ongoing success of the program. These activities include morbidity & mortality, equity of care and financial planning & management activities within the SLHD.

Peritoneal malignancy research projects, new ideas and research collaborations are discussed in the Peritoneal Malignancy Research Meeting. This collaborative meeting includes several multidisciplinary clinical and academic personnel and is held bimonthly.

3.2 Staffing

The delivery of the Peritoneal Malignancy Program at RPA would not be possible without the ongoing commitment and dedication of the many clinical teams and individual staff involved. Their contribution to ensuring the highest level of care is provided to our patients is greatly appreciated.

The list of key staff involved in the program are outlined in **Appendix 1**.

3.3 Patient support and feedback

The Peritoneal Malignancy Program at RPA continues to provide comprehensive care to patients from our local community, across NSW, Australia, and internationally. In line with our commitment to family-centered care, we have maintained and enhanced our focus on addressing the specific cultural and religious needs of our diverse patient population.

The program offers a range of support services to ensure holistic care throughout the patient journey. These include Aboriginal liaison, youth support, drug and alcohol counseling, interpreter services, volunteer assistance, spiritual care, occupational therapy, palliative care, pharmacy services, speech therapy, and private patient liaison. These services are seamlessly integrated into our model of care, from initial consultation through treatment and follow-up.

Our multidisciplinary team works collaboratively to develop personalised care plans that respect each patient's values, preferences, and unique circumstances. This family-centered approach extends to our Peritoneal Malignancy Research and Clinical Audit Program, where this support is integrated to ensure patients have access to the latest clinical trials. By bridging cutting-edge research with individualised care, we strive to provide the best possible outcomes for our patients.

Patient feedback consistently highlights the value of these support services in enhancing overall treatment experience and outcomes. We aim to further refine and expand these services based on ongoing patient needs assessments and feedback.

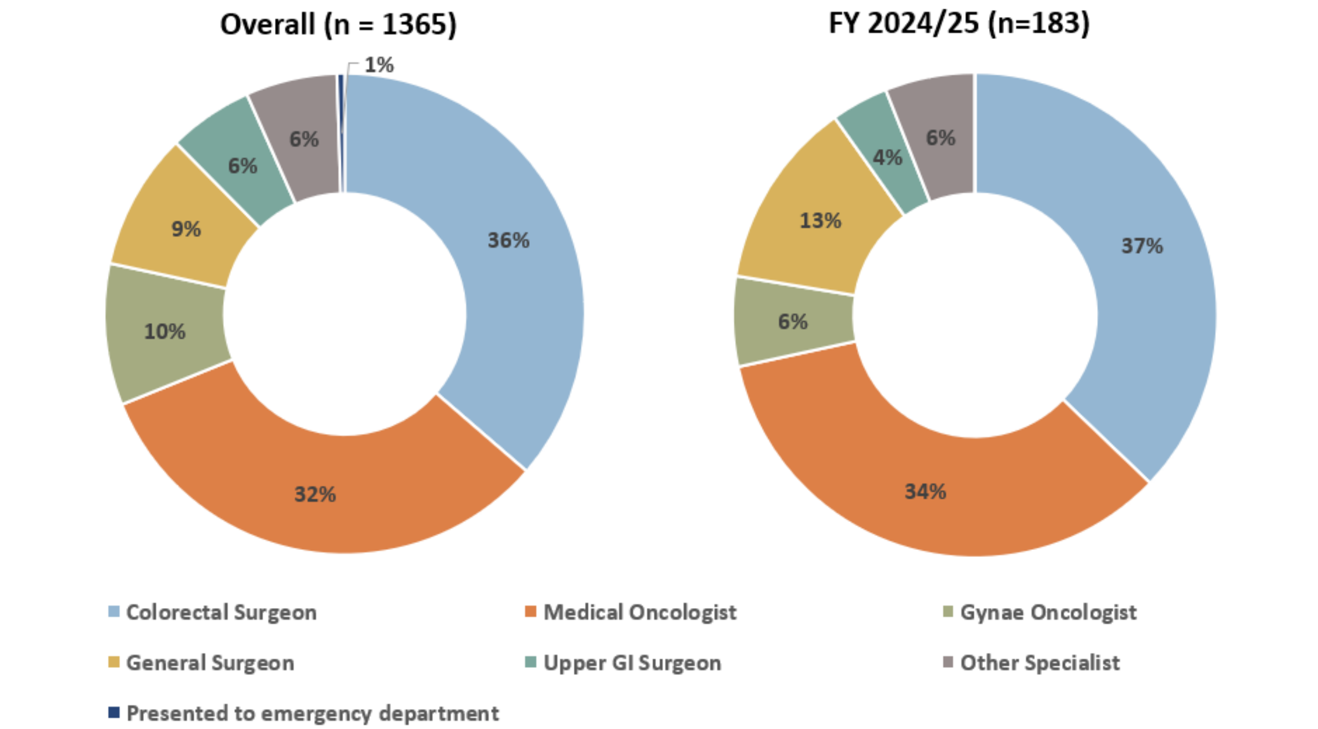
4. Patient Care Pathway and Review

4.1 Referral of new patients

Since its establishment in April 2017, the specialised peritoneal malignancy MDT at RPA has received 1365 new patient referrals (**Figure 3**). On average, over 14 new patients were referred each month.

During the 2024/25 financial year, there were 183 new patients referred and discussed at the peritoneal malignancy MDT meeting, with the referring clinicians outlined in **Figure 3**. Of these, most were referred by colorectal surgeons (37%), medical oncologists (34%), and general surgeons (13%).

Figure 3. Number of new patients referred to the Peritoneal Malignancy Program since April 2017



4.2 Multidisciplinary team meeting

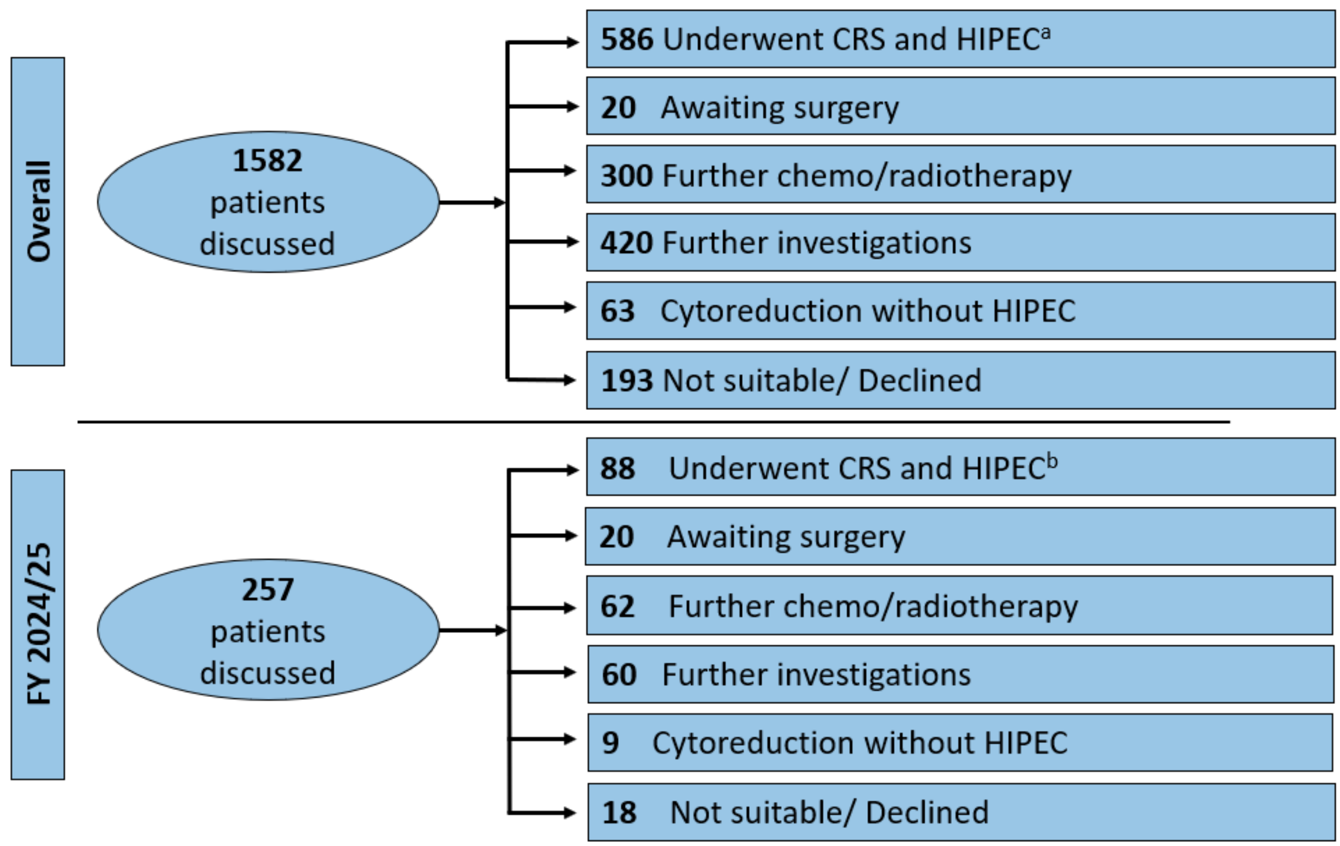
The Peritoneal Malignancy Program at RPA holds a fortnightly MDT meeting. The MDT meeting is a critical step in the patient care pathway. The meeting is chaired by program Lead, Dr Nabila Ansari. All patients referred to RPA for consideration of CRS and HIPEC are discussed at this meeting. Referrals are received from specialists all over NSW and interstate. Information is collated and prioritised by the clinical nurse consultant (CNC) and the MDT Chair. Cases are presented with a range of clinical information including clinical presentation and history, radiology (PET and CT scans) and histopathology reports. The radiologist then outlines the findings on the relevant imaging and a discussion takes place to determine patient suitability for CRS and HIPEC. Decisions made at the MDT meeting are based on indications discussed and agreed upon by the ANZ Peritoneal Malignancy Collaboration and those outlined in the Reid Report.

The discussion and decisions relating to the proposed treatment plan for the patients are documented in the form of an MDT letter, signed by the Chair and sent back to the referring consultant.

In terms of overall program activity, of the 1582 patients discussed at the specialised MDT meetings, 586 (37%) underwent CRS and HIPEC, 20 (1%) are currently awaiting surgery, 420 (27%) are currently under further investigation, 300 (19%) were referred for further chemotherapy or radiotherapy, 63 (4%) underwent CRS only without HIPEC and 193 (12%) were not suitable for or declined surgery.

During the 2024/25 financial year, 257 patients were discussed, of which 88 (34%) underwent CRS and HIPEC and 20 (8%) patients were awaiting surgery. Of the remaining patients, 62 (24%) were referred for further chemotherapy or radiotherapy, 60 (23%) are currently under further investigation, 9 (4%) underwent CRS without HIPEC and 18 (7%) were not suitable for or declined surgery (**Figure 4**).

Figure 4. Recommendations of the peritoneal malignancy multidisciplinary team meeting since April 2017



[a]Includes patients that underwent redo CRS and HIPEC (n=30) and combined CRS and HIPEC and Pelvic Exenteration (n=20). [b]Includes patients that underwent redo CRS and HIPEC (n=4) and combined CRS and HIPEC and Pelvic Exenteration (n=3).

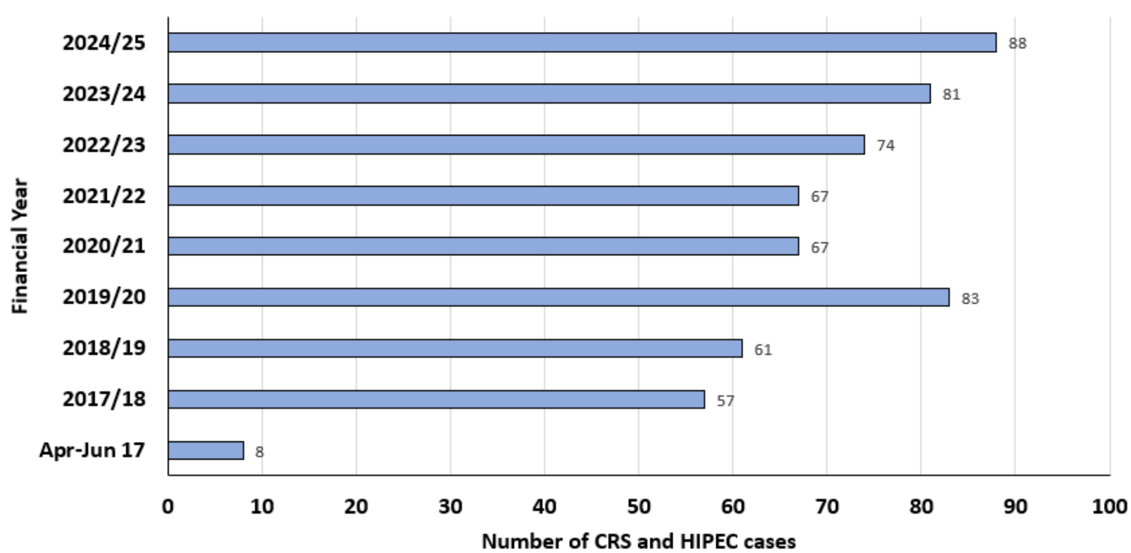
5. Program Activity and Patient Outcomes

5.1 Program activity

From April 2017 to June 2025, 649 Peritoneal Malignancy procedures were performed at RPA. Of these, 586 procedures were performed with combined CRS and HIPEC, including 556 individual patients having combined CRS and HIPEC for the first time, inclusive of combined pelvic exenterations n=20 and those who underwent a redo CRS and HIPEC (n=30). The remaining 63 patients were assessed by the Peritoneal Malignancy MDT to undergo cytoreductive surgery without HIPEC (i.e. CRS only). The program team has therefore treated 536 patients with combined CRS and HIPEC for the first time without concurrent pelvic exenteration.

Over the entire program period, an average of 70 patients have been treated with combined CRS and HIPEC per financial year. Over the last three financial years numbers have been 74 (2022/23), 81 (2023/24) and 88 (2024/25) CRS/HIPEC cases performed. Of the 88 cases performed in the 2024/25 financial year, four cases were re-operations on patients who had previous combined CRS and HIPEC at RPA and three patients who underwent combined CRS and HIPEC and pelvic exenteration. Therefore, during this period, the program team treated 81 patients with CRS and HIPEC for the first time without concurrent pelvic exenteration. This averaged approximately seven cases per month, which is an increase of activity as compared to the average monthly number of cases performed over the whole program (**Figure 5**).

Figure 5. RPA Peritoneal Malignancy Program case load: April 2017 to Jun 2025 (n=586[a])

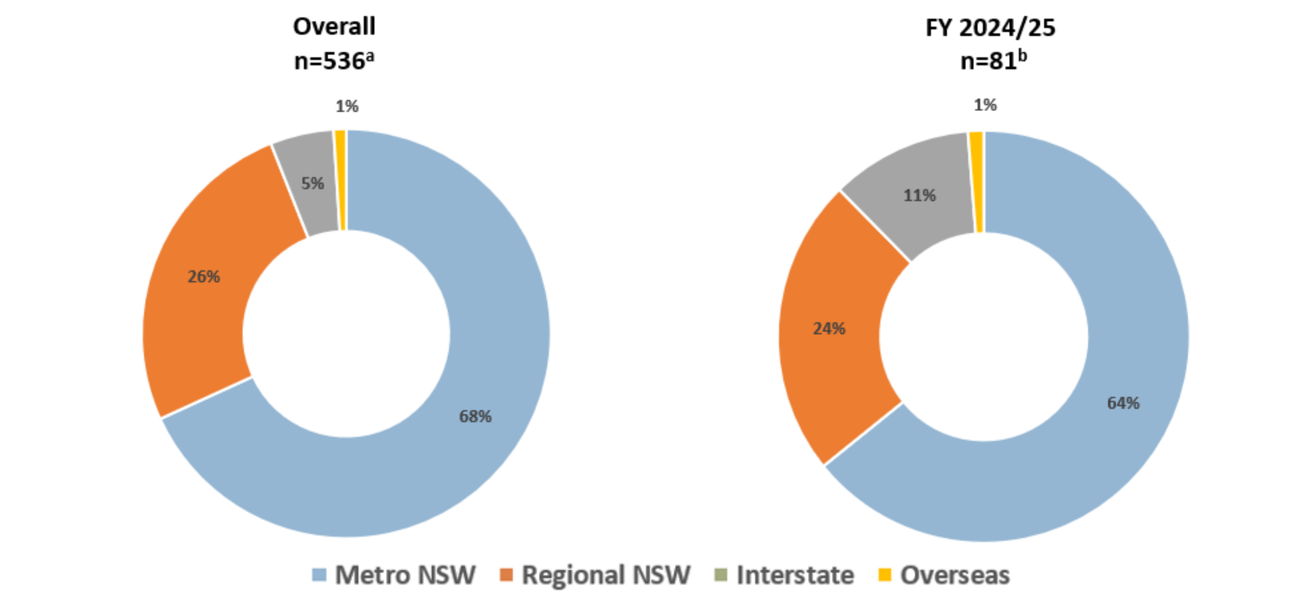


[a]Includes patients that underwent redo CRS and HIPEC (n=30) and combined CRS and HIPEC and Pelvic Exenteration (n=20). Excludes patients that underwent CRS Only (n=63).

5.2 Patient geographic location

Overall, most of the patients who underwent CRS and HIPEC were based in metropolitan NSW (68%), with 26% living in regional NSW and 5% living interstate. During the 2024/25 financial year, 64% of patients were from metropolitan NSW, 24% were from regional areas and 11% were living in another state (**Figure 6**).

Figure 6. Residential location of patients who underwent CRS and HIPEC since April 2017



[a]Excludes patients that underwent redo CRS and HIPEC (n=30) and combined CRS and HIPEC and Pelvic Exenteration (n=20). [b]Excludes patients that underwent redo CRS and HIPEC (n=4) and combined CRS and HIPEC and Pelvic Exenteration (n=3).

5.3 Patient characteristics

Overall, 57% of patients were female with a median age of 56.0 years. The most common primary tumours were colorectal (44%), appendix adenocarcinoma (23%) and pseudomyxoma peritonei (17%).

In the 2024/25 financial year, similar patient characteristics were observed, although there was a slight decrease in the number of female patients (56%) and increase in patients presenting with colorectal cancer (46%) and appendix adenocarcinoma (28%) undergoing CRS and HIPEC (**Table 3**).

Table 3. Characteristics of patients undergoing CRS and HIPEC

Characteristics	Overall (n=536[a])	FY 2024/25 (n=81[b])
Age, years	56.0 (45.8 to 64.25)	58.0 (48.0 to 64.0)
Sex, female	306 (57.1%)	45 (55.6%)
Tumour type		
Colorectal	235 (43.8%)	37 (45.7%)
Appendix adenocarcinoma	122 (22.8%)	23 (28.4%)
Pseudomyxoma peritonei	91 (16.8%)	13 (14.8%)
Ovarian	43 (8.2%)	4 (6.2%)
Peritoneal mesothelioma	23 (4.3%)	1 (1.2%)
Small bowel adenocarcinoma	9 (1.7%)	1 (1.2%)
Other	13 (2.4%)	2 (2.5%)

Data presented as frequency (percentage) or median (IQR). [a]Excludes patients that underwent redo CRS and HIPEC (n=30) and combined CRS and HIPEC and Pelvic Exenteration (n=20). [b]Excludes patients that underwent redo CRS and HIPEC (n=4) and combined CRS and HIPEC and Pelvic Exenteration (n=3).

5.4 Surgical outcomes

The surgical outcomes for the overall cohort and for the 2024/25 financial year are presented in **Table 4**. There was an increase in blood transfusion required; and a small decrease in surgical time and length of hospital stay in the 2024/25 financial year compared to the overall program. These are highly complex surgeries, and it is pleasing to see that a high clearance of disease is achieved.

Table 4. Surgical outcomes following CRS and HIPEC

Surgical outcomes	Overall (n=536[a])	FY 2024/25 (n=81[b])
Surgery time, hours	9.3 (7.9 to 10.6)	8.7 (7.7 to 10.0)
Length of ICU stay, days	5.0 (4.0 to 6.0)	5.7 (4.9 to 6.0)
Length of hospital stay, days	17.0 (13.0 to 22.8)	15.0 (13.0 to 21.0)
Blood loss, mL	1200.0 (800.0 to 2000.0)	1300.0 (550.0 to 2000.0)
Transfusion required	370 (69.0%)	74 (91.4%)
PCI score	12.0 (6.0 to 21.0)	10.0 (5.0 to 18.0)
CC score		
CC0	464 (86.6%)	75 (92.6%)
CC1	60 (11.2%)	6 (7.4%)
CC2/CC3	12 (2.2%)	-

Data presented as frequency (percentage) or median (IQR). [a]Excludes patients that underwent redo CRS and HIPEC (n=30) and combined CRS and HIPEC and Pelvic Exenteration (n=20). [b]Excludes patients that underwent redo CRS and HIPEC (n=5) and combined CRS and HIPEC and Pelvic Exenteration (n=3).

5.5 Hyperthermic intraperitoneal chemotherapy agent

Overall, the most common HIPEC agent used was mitomycin (80%) followed by oxaliplatin (8%). During the 2024/25 financial year, all patients presenting with colorectal cancer, appendix adenocarcinoma, pseudomyxoma peritonei and small bowel adenocarcinoma were treated with mitomycin alone. All patients presenting with ovarian and peritoneal mesothelioma, and half of those presenting with and other diseases were treated with cisplatin (**Table 5**).

Table 5. Hyperthermic intraperitoneal chemotherapy agent

Overall (n=536[a])	Oxaliplatin	Mitomycin	Cisplatin	Mitomycin/ Cisplatin	Total
Colorectal	31 (13.1%)	204 (86.9%)	-	-	235 (100%)
Appendix adenocarcinoma	10 (8.2%)	111 (91.0%)	1 (0.8%)	-	122 (100%)
Pseudomyxoma peritonei	-	91 (100%)	-	-	91 (100%)
Ovarian	2 (4.7%)	7 (16.3%)	33 (76.7%)	1 (2.3%)	43 (100%)
Peritoneal mesothelioma	-	4 (17.4%)	2 (8.7%)	17 (73.9%)	23 (100%)
Small bowel adenocarcinoma	2 (22.2%)	7 (77.8%)	-	-	9 (100%)
Other	-	6 (46.2%)	6 (46.2%)	1 (7.6%)	13 (100%)
Total	**45 (8.4%)**	**430 (80.3%)**	**42 (7.8%)**	**19 (3.5%)**	**536 (100%)**

FY 2024/25 (n=81[b])	Oxaliplatin	Mitomycin	Cisplatin	Mitomycin/ Cisplatin	Total
Colorectal	-	37 (100%)	-	-	37 (100%)
Appendix adenocarcinoma	-	23 (100%)	-	-	23 (100%)
Pseudomyxoma peritonei	-	13 (100%)	-	-	13 (100%)
Ovarian	-	-	4 (100%)	-	4 (100%)
Peritoneal mesothelioma	-	-	1 (100%)	-	1 (100%)
Small bowel adenocarcinoma	-	1 (100%)	-	-	1 (100%)
Other	-	1 (50.0%)	1 (50.0%)	-	2 (100%)
Total	**-**	**75 (92.6%)**	**6 (7.4%)**	**-**	**81 (100%)**

Data presented as frequency (percentage). [a]Excludes patients that underwent redo CRS and HIPEC (n=30) and combined CRS and HIPEC and Pelvic Exenteration (n=20).
[b]Excludes patients that underwent redo CRS and HIPEC (n=4) and combined CRS and HIPEC and Pelvic Exenteration (n=3).

5.6 Peritoneal Cancer Index

The overall median Peritoneal Cancer Index (PCI) score over the course of this program ranged from 8.0 (colorectal) to 28.0 (peritoneal mesothelioma and pseudomyxoma peritonei) (**Table 6**). A lower median PCI score was observed for all patients apart from those presenting with other cancer types in the 2024/25 financial year. There was an overall decrease in the PCI score in the 2024/25 financial year.

Table 6. Median Peritoneal Cancer Index score according to tumour type

Tumour type	Overall (n=536[a])		FY 2024/25 (n=81[b])	
	Median (IQR)	n	Median (IQR)	N
Colorectal	8.0 (5.0 to 12.5)	235	7.0 (5.0 to 13.0)	37
Appendix adenocarcinoma	13.0 (4.3 to 27.0)	122	10.0 (3.5 to 15.5)	23
Pseudomyxoma peritonei	28.0 (16.5 to 34.0)	91	26.0 (13.0 to 32.3)	13
Ovarian	14.0 (10.8 to 21.3)	43	12.0 (9.0 to 15.0)	4
Peritoneal mesothelioma	28.0 (21.0 to 35.0)	23	25.0 (25.0 to 25.0)	1
Small bowel adenocarcinoma	9.0 (8.0 to 12.0)	9	4.0 (4.0 to 4.0)	1
Other	11.0 (6.0 to 15.0)	13	11.5 (7.8 to 15.3)	2
Overall	**12.0 (6.0 to 21.0)**	**536**	**10.0 (5.0 to 18.0)**	**81**

Data presented as median (IQR). [a]Excludes patients that underwent redo CRS and HIPEC (n=30) and combined CRS and HIPEC and Pelvic Exenteration (n=20). [b]Excludes patients that underwent redo CRS and HIPEC (n=4) and combined CRS and HIPEC and Pelvic Exenteration (n=3).

5.7 Completeness of Cytoreduction score

Overall, complete tumour removal (CC0-1 score) was achieved in most patients, with CC0-1 scores ranging from 91% (peritoneal mesothelioma) to 100% (ovarian, small bowel adenocarcinoma and other cancer types) (**Table 7**). The CC score improved in the 2024/25 financial year, with all patients achieving complete cytoreduction (CC0-1).

Table 7. Completeness of Cytoreduction scores following CRS and HIPEC

Tumour type	Overall (n=536[a])		FY 2024/25 (n=81[b])	
	CC0-1	CC2-3	CC0-1	CC2-3
Colorectal	234 (99.6%)	1 (0.4%)	37 (100%)	-
Appendix adenocarcinoma	117 (95.9%)	5 (4.1%)	23 (100%)	-
Pseudomyxoma peritonei	87 (95.6%)	4 (4.4%)	13 (100%)	-
Ovarian	43 (100%)	-	4 (100%)	-
Peritoneal mesothelioma	21 (91.3%)	2 (8.7%)	1 (100%)	-
Small bowel adenocarcinoma	9 (100%)	-	1 (100%)	-
Other	13 (100%)	-	2 (100%)	-
Overall	**524 (97.8%)**	**12 (2.2%)**	**81 (100.0%)**	**-**

Data presented as frequency (percentage). [a]Excludes patients that underwent redo CRS and HIPEC (n=30) and combined CRS and HIPEC and Pelvic Exenteration (n=20). [b]Excludes patients that underwent redo CRS and HIPEC (n=4) and combined CRS and HIPEC and Pelvic Exenteration (n=3).

5.8 Complications

Overall, 71% of patients experienced at least one postoperative complication. However, most of the complications were classified as Grade I-II (62%) using the Clavien-Dindo Classification system. The overall in-hospital mortality rate since initiation of the program is under 2% (n=4) (**Table 8**). The mortality rate of patients who have passed away within 30 days of their surgery (i.e. in-hospital or following discharge) is under 1% (n=3). No in-hospital mortality was observed during the 2024/25 financial year.

Table 8. Complications following CRS and HIPEC

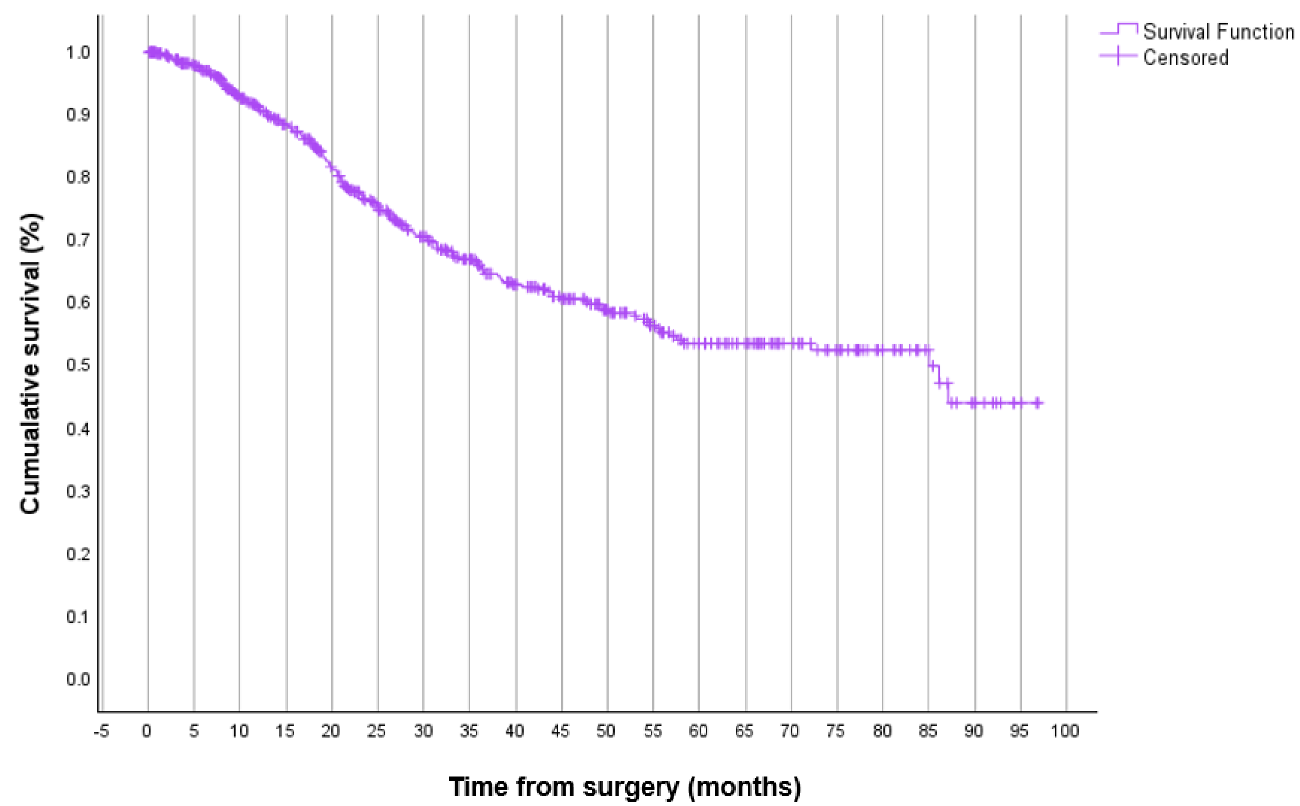
Complications	Overall (n=534[a,b])	FY 2024/25 (n=79[b,c])
Postoperative complication	377 (70.6%)	52 (65.8%)
Clavien-Dindo Classification		
Grade I-II	235 (62.3%)	34 (65.4%)
Grade III-IV	137 (36.3%)	18 (34.6%)
Grade V	4 (1.1%)	-
30-day mortality	3 (0.8%)	-

Data presented as frequency (percentage). [a]Excludes patients that underwent redo CRS and HIPEC (n=30) and combined CRS and HIPEC and Pelvic Exenteration (n=20). [b]Overall (n=534) and financial year (n=79) due to ongoing inpatient stays. [c]Excludes patients that underwent redo CRS and HIPEC (n=4) and combined CRS and HIPEC and Pelvic Exenteration (n=3).

5.9 Survival outcomes

The mean follow-up was 32.5 months, and the mean overall survival for the whole cohort was 62.7 months. The 12-month survival was 91% and the 24 months survival was 77%. These findings indicate an improvement in survival relative to other similar programs around the world. The overall survival curve is presented in **Figure 7**.

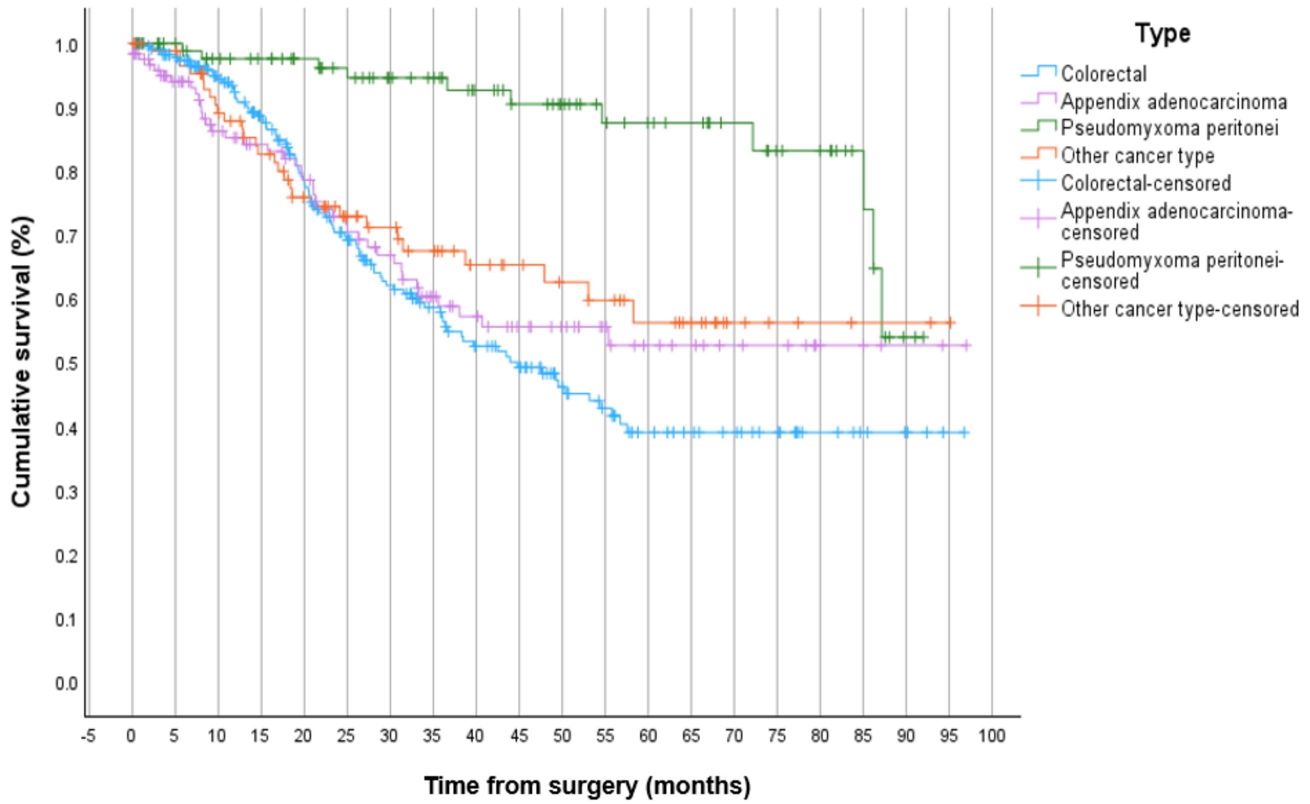
Figure 7. Overall survival following CRS and HIPEC (n=536[a])



[a]*Excludes patients that underwent redo CRS and HIPEC (n=30) and combined CRS and HIPEC and Pelvic Exenteration (n=20).*

Overall, an increase in survivorship was seen across all primary pathologies (**Figure 8**). The most frequent primary pathologies in patients with peritoneal malignancy were colorectal cancer (n=235), appendix adenocarcinoma (n=122) and pseudomyxoma peritonei (n=91). There were 88 patients with other cancer types. The mean overall survival according to primary tumour type was 54.8 months for colorectal cancer, 61.4 months for appendix adenocarcinoma, 82.1 months for patients with pseudomyxoma peritonei, and 64.7 months for other cancer types (**Table 9**). The survival rate at 24 months was 70% for colorectal cancer, 73% for appendix adenocarcinoma, 96% for pseudomyxoma peritonei and 74% for other cancers.

Figure 8. Survival curves following CRS and HIPEC based on the type of tumour (n=536[a])



[a]*Excludes patients that underwent redo CRS and HIPEC (n=30) and combined CRS and HIPEC and Pelvic Exenteration (n=20).*

Table 9. Survival outcomes following CRS and HIPEC (n=536[a])

Survival (%)	12 months	24 months	Mean survival
Colorectal (n=235)	91.8%	70.4%	54.8 months
Appendix adenocarcinoma (n=122)	85.2%	72.8%	61.4 months
Pseudomyxoma peritonei (n=91)	97.6%	96.1%	82.1 months
Other cancer types (n=88)	87.8%	74.4%	64.7 months

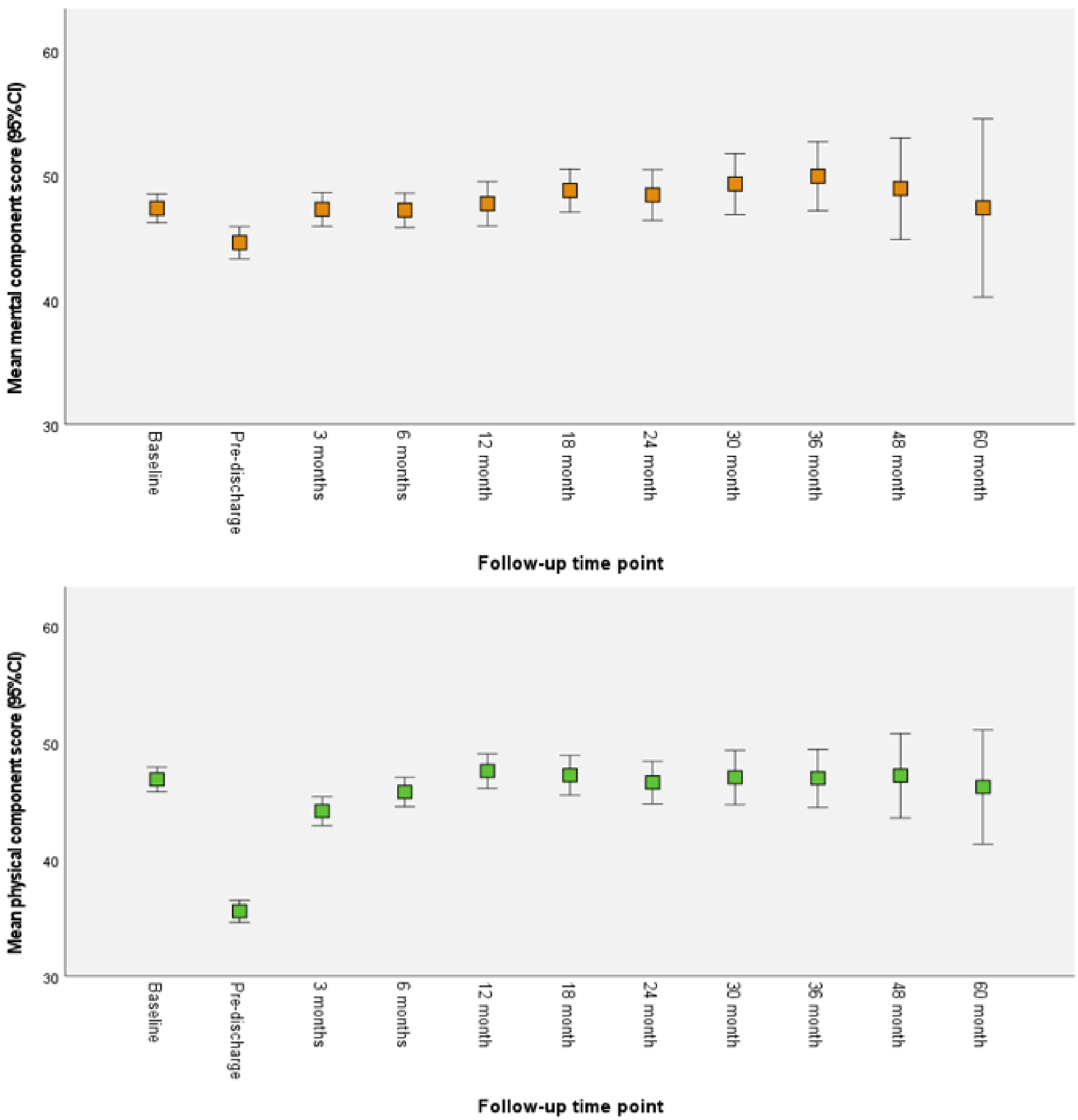
[a]*Excludes patients that underwent redo CRS and HIPEC (n=30) and combined CRS and HIPEC and Pelvic Exenteration (n=20).*

5.10 Quality of life outcomes

Patient reported outcomes, including quality of life measures, are collected at 11 different time points including preoperative, pre-discharge from hospital, and 3, 6, 12, 18, 24, 30, 36, 48 and 60 months postoperatively.

Out of the 536 individual patients who underwent CRS and HIPEC, 476 (89%) consented to prospectively report their quality of life outcomes. Overall, there is a decline in the physical and mental component scores during the early postoperative period, although the physical and mental component scores return to baseline scores within 12 months postoperatively (**Figure 9**).

Figure 9. Quality of life outcomes following CRS and HIPEC (n=476[a])



[a]Excludes patients that underwent redo CRS and HIPEC (n=30) and combined CRS and HIPEC and Pelvic Exenteration (n=20).

5.11 Allied health care inputs to service

The Peritoneal Malignancy Program involves a large number of allied health personnel that are responsible for the care of the CRS and HIPEC patients during the preoperative, in-hospital and postoperative periods. This includes physiotherapy, social work, psychology, dietetics, pharmacy and stomal therapy. The documentation of inputs of service for the individual allied health professionals are listed below in **Table 10**.

Table 10. Allied health occasion of services

Overall	Preoperative	In-hospital	3 months	6 months	12 months
Physiotherapy	365	4745	148	124	81
Social Work	231	849	307	280	277
Psychology	456	1643	152	122	90
Dietetics	568	2955	381	312	249
Pharmacy	258	1088	139	123	95
Stomal Therapy	494	1566	254	201	189

5.12 Cytoreductive surgery without HIPEC

For a proportion of the planned cases discussed at the Peritoneal Malignancy MDT, complete CRS or HIPEC are not feasible at the time of surgery. This may be due to a combination of factors including type of tumour, location, extent of disease, patient's overall health and presence of comorbidities. Since the Program's inception in 2017, a total of 67 patients underwent surgery without HIPEC. These include 38 (57%) patients who have had CRS only, 25 (37%) who had maximal tumour debulking and 4 (6%) other surgical procedures. The breakdown of these operations is presented in **Table 11**.

Table 11. Other cytoreductive surgeries without HIPEC performed

Overall	MTD	CRS Only	Other	Total
FY 2017/18	-	-	-	-
FY 2018/19	1 (16.7%)	3 (50.0%)	2 (33.3%)	6 (100%)
FY 2019/20	1 (33.3%)	2 (66.7%)	-	3 (100%)
FY 2020/21	6 (50.0%)	4 (33.3%)	2 (16.7%)	12 (100%)
FY 2021/22	5 (50.0%)	5 (50.0%)	-	10 (100%)
FY 2022/23	3 (23.1%)	10 (76.9%)	-	13 (100%)
FY 2023/24	3 (21.4%)	11 (78.6%)	-	14 (100%)
FY 2024/25	6 (66.7%)	3 (33.3%)	-	9 (100%)

Data presented as frequency (percentage). MTD – Maximal tumour debulking . CRS – Cytoreductive surgery.

6. Research

The Peritoneal Malignancy Research and Clinical Audit Program, supported by the Surgical Outcomes Research Centre (SOuRCe), seamlessly integrates research with clinical care. The program is at the forefront of driving national and international research agendas in peritoneal malignancy. It also fosters research among clinical staff, MD students, MPhil and PhD candidates, contributing to numerous scientific publications, conference presentations, and competitive grant applications. The Peritoneal Malignancy Research and Clinical Audit Program has continued its international proliferation with 42 research projects currently being conducted. These studies incorporate surgical outcomes, quality of life, decision-making, nutrition, depression, anxiety, stress, physical activity, treatment, health services utilization and costs. The team has also published 17 peer-reviewed research manuscripts and presented 9 times at national and international conferences during this reporting period. With over $5.5 million in research grants funding clinical trials, the Peritoneal Malignancy Program has been recognised as uniquely poised to support high quality research and provide effective research supervision. There are currently two MD and three higher degree by research (HDR) students being supervised. Clinical trials are a crucial component of the program, essential for developing and refining diagnostic tests and interventions that will improve patient outcomes. These trials also provide participants with alternative treatment options and access to new therapies before they become widely available. This robust research infrastructure ensures that the Peritoneal Malignancy Program at RPA remains at the cutting edge of patient care and scientific discovery in this field.

The Peritoneal Malignancy Research and Clinical Audit Program continues to foster close relationships with international centres such as Basingstoke Hospital in the United Kingdom. Relationships with additional international centres in Europe and Southeast Asia is ongoing within the Program.

6.1 Current research studies

The Peritoneal Malignancy Research and Clinical Audit Program has evolved since service inception in April 2017. A number of research studies are currently being conducted in a wide range of areas including surgical outcomes, survival rates, quality of life, nutrition, depression, anxiety, stress, physical activity, treatment, health services utilisation and costs. Currently there are 34 studies that are either recruiting participants or in final write-up stage, and there are another eight in the conceptual stage. Highlights of the studies being conducted are described in **Tables 12A-G.**

Table 12A. PREMIER Database	
Study title:	Peritonectomy surgical research program (PREMIER).
HREC and SSA number:	X16-0482; 2019/ETH08905 & 2019/STE10926
General aim:	To collate clinical and patient reported information on all patients undergoing CRS with or without HIPEC receiving care through RPAH.
Design:	Prospective database.
Main endpoints:	Surgical and patient reported outcomes.
Sample size:	Ongoing.
Status:	Recruiting: 649 to date.
Estimated completion date:	Ongoing.

Table 12B. AUS-UK QoL	
Study title:	Quality of life following cytoreductive surgery and hyperthermic intraperitoneal chemotherapy in patients with colorectal peritoneal metastasis: An international evaluation between Australia and UK.
HREC and SSA number:	X17-0127; 2019/ETH08703 & 2019/STE10621
General aim:	To investigate quality of life outcomes between Australia and UK.
Design:	Cohort study.
Main endpoints:	Identify similarities in quality-of-life trajectories between Australia and the UK.
Sample size:	193
Status:	Published.
Estimated completion date:	Completed.

Table 12C. $WHCO_2$ Trial	
Study title:	Effect of intraoperative warmed, humidified carbon dioxide insufflation in open laparotomy colorectal surgery patients undergoing cytoreductive surgery and hyperthermic intraperitoneal chemotherapy (CRS HIPEC): A randomised controlled trial.
HREC and SSA number:	X19-0294; 2019/ETH03005 & 2023/STE02205
General aim:	To determine whether there is a correlation between preventing visceral peritoneal damage with survival with $WHOCO_2$ and determine if use of WHCO2 improves short term perioperative outcomes in patients.
Design:	Clinical trial.
Main endpoints:	Whether $WHCO_2$ improves patient survival by preventing visceral peritoneal damage.
Sample size:	60
Status:	Interim analysis.
Estimated completion date:	11/12/2029

Table 12D. HyNOVA Trial	
Study title:	Hyperthermic and normothermic intraperitoneal chemotherapy following interval cytoreductive surgery for stage III epithelial ovarian, fallopian tube and primary peritoneal cancer.
HREC and SSA number:	X20-0519; 2020/ETH03005 & 2020/STE05360
General aim:	To determine the effects of NIPEC and HIPEC.
Design:	Clinical trial.
Main endpoints:	Determine the proportion and frequency of participants who experience a grade 3-5 adverse event according to the Clavien-Dindo classification.
Sample size:	80
Status:	Recruitment has completed; preparation of analysis.
Estimated completion date:	31/12/2025

Table 12E. PRIORITY Trial	
Study title:	Preoperative exercise and education for patients undergoing major abdominal cancer surgery: A multicentre randomised controlled trial.
HREC and SSA number:	X20-0433; 2019/ETH13718 & 2019/STE17824
General aim:	To investigate the effectiveness and cost-effectiveness of a preoperative exercise program and education for patients undergoing major gastrointestinal cancer surgery.
Design:	Clinical trial.
Main endpoints:	The primary outcome will be the proportion of participants developing in-hospital complications within the primary admission of the index surgery.
Sample size:	172
Status:	Manuscript formation.
Estimated completion date:	31/12/2025

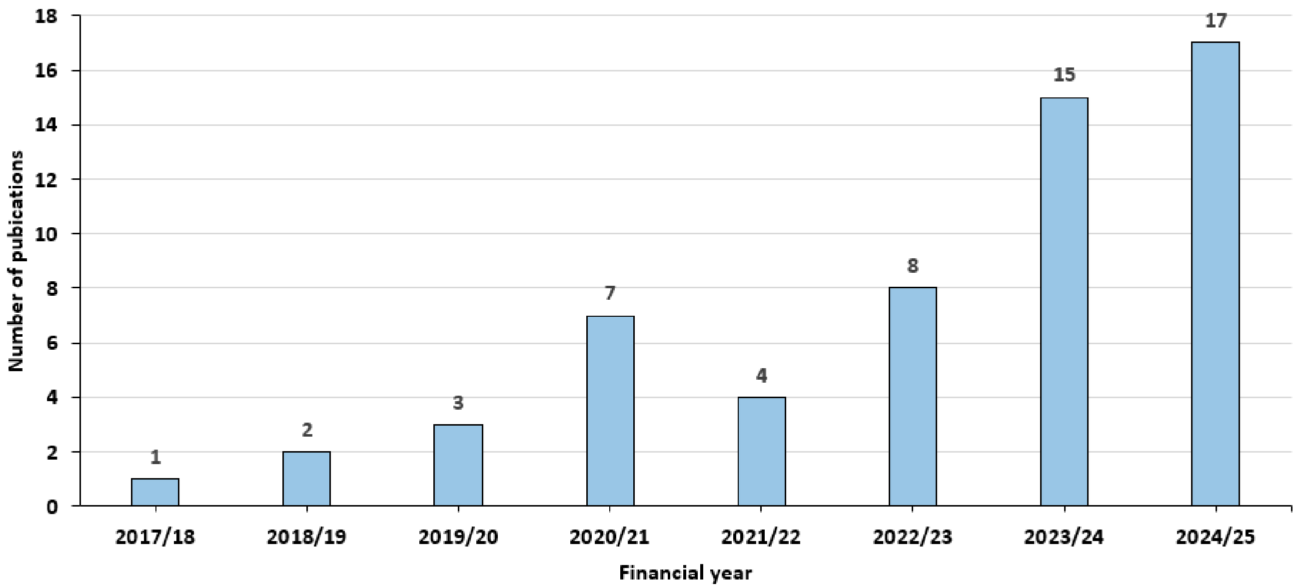
Table 12F. PRIORITY-CONNECT 2 Trial	
Study title:	Virtual multimodal hub for patients undergoing major gastrointestinal cancer surgery: PRIORITY-CONNECT 2 randomised type i hybrid effectiveness-implementation trial.
HREC and SSA number:	X23-0399; 2023/ETH02359 & 2023/STE03729
General aim:	To establish the effectiveness of an individualised stepped, multidisciplinary intervention, including education and peer support group, delivered via a virtual multimodal (pre)rehabilitation hub, in reducing postoperative complications within 30 days following colorectal cancer surgery, compared to usual care alone.
Design:	Clinical trial.
Main endpoints:	The primary outcome will be the proportion of participants developing postoperative complications within 30 days after surgery.
Sample size:	564
Status:	Recruiting.
Estimated completion date:	**Phase 1 (Pilot) – Completed:** - Primary Completion (estimated): 22/07/2025 - Study Completion (estimated): 22/12/2025 **Phase 2 – In progress:** - Primary Completion (estimated): 30/07/2028 - Study Completion (estimated): 30/07/2028

Table 12E. Predict-Org	
Study title:	Peritoneal tissue bank.
HREC and SSA number:	X22-0429; HREC/15/PMCC/73 & 2023/STE00496
General aim:	Establish a human peritoneal disease tissue bank for future studies of peritoneal disease.
Design:	Prospective database.
Main endpoints:	Resource for future studies of peritoneal disease.
Sample size:	Ongoing.
Status:	Recruiting: 10 to date.
Estimated completion date:	Ongoing.

6.2 Publications

Overall, the Peritoneal Malignancy Research and Clinical Audit Program has published a total of 57 peer-reviewed publications. In the 2024/25 financial year, 17 scientific articles were published (**Figure 10**).

Figure 10. Number of peer-reviewed publications within the CRS and HIPEC Program



Raichurkar P, Brown KGM, White K, Koh CE, Ansari N, Ahmadi N, Solomon MJ, Steffens D. Undergoing cytoreductive surgery for colorectal peritoneal metastases: A qualitative exploration of the lived experiences of patients and carers. Ann Surg Oncol. 2025 Jul;32(7):5042-5050.

Bai Z, Solomon M, Shahab R, Koh C, Steffens D. The good, the bad, and the frail - the role of prehabilitation in frail patients undergoing cancer surgery. ANZ J Surg. 2024 Jun;94(6):993-995.

Garrett C, Steffens D, Ackland S, Solomon M, Koh C. Risk factors, histopathological landscape, biomarkers, treatment patterns and survival of early-onset colorectal cancer: A narrative review. Asia Pac J Clin Oncol. 2024 Aug;20(4):444-449.

Carey S, Hogan S, Vu J, Steffens D. Nutrition interventions in prehabilitation randomised controlled trials for patients undergoing cancer surgery: Too heterogeneous to digest? Support Care Cancer. 2024 Sep 21;32(10):679.

Vu JK, Koh CE. Prehabilitation for colorectal cancer surgery. Dis Colon Rectum. 2024 Oct 1;67(10):1239-1242.

Siu A, Steffens D, Ansari N, Karunaratne S, Solanki H, Ahmadi N, Solomon M, Koh C. Evaluating patient experience and healthcare utilisation in cytoreductive surgery and hyperthermic intraperitoneal chemotherapy. Aust Health Rev. 2024 Oct;49:AH24192.

Steffens D, Solomon MJ, Jack S, West MA. ASO Author Reflections: Improving postoperative outcomes in colorectal cancer surgery: Where are we with prehabilitation? Ann Surg Oncol. 2024 Oct;31(10):6474-6475.

Steffens D, Nott F, Koh C, Jiang W, Hirst N, Cole R, Karunaratne S, West MA, Jack S, Solomon MJ. Effectiveness of prehabilitation modalities on postoperative outcomes following colorectal cancer surgery: A systematic review of randomised controlled trials. Ann Surg Oncol. 2024 Nov;31(12):7822-7849.

Raichurkar P, Brown K, Koh C, Dela Cruz A, Sitharthan D, Moran B, Ansari N, Ahmadi N, Solomon M, Steffens D. Reported outcomes following cytoreductive surgery for colorectal peritoneal metastases: A systematic review to inform evidence-based practice and international consensus. Colorectal Dis. 2025 Jan;27(1):e17280.

Cheng E, Yang PF, Khor S, Mui J, Sarofim M, Wijayawardana R, Ansari N, Koh CE, Morris DL, Ahmadi N. Novel technique and outcomes of umbilical reconstruction during cytoreductive surgery; A multi-centre study. Tech Coloproctol. 2025 Jan 21;29(1):49.

Lim CYS, Laidsaar-Powell RC, Young JM, Solomon M, Steffens D, Blinman P, O'Loughlin S, Zhang Y, Butow P; advanced-CRC survivorship authorship group. Fear of cancer progression and death anxiety in survivors of advanced colorectal cancer: A qualitative study exploring coping strategies and quality of life. Omega (Westport). 2025 Feb;90(3):1325-1362.

Petridis AP, Koh C, Solomon M, Karunaratne S, Alexander K, Hirst N, Pillinger N, Denehy L, Riedel B, Gillis C, Carey S, McBride K, White K, Dhillon H, Campbell P, Reeves J, Biswas RK, Steffens D. An online preoperative screening tool to optimize care for patients undergoing cancer surgery: A mixed-method study protocol. Cancers (Basel). 2025 Mar 3;17(5):861.

Steffens D, Hancock M, Jiang W, Solomon M, Koh C, Hirst N, Riedel B. An updated systematic review and meta-analysis of unimodal prehabilitation with exercise intervention to enhance postoperative outcomes in cancer surgery. Anesth Analg. 2025 Apr 1;140(4):811-820.

Wilson K, Solomon M, Cornish JA, Quyn A, Croft J, Stevenson A, Warwick AM, Ng KS. Low anterior resection syndrome - what's the urgency? ANZ J Surg. 2025 Apr 3.

Bai Z, Koh C, Solomon M, Shahab R, Hirst N, Alexander K, Pereira LSM, Lage APD, Steffens D. Prehabilitation in frail patients undergoing cancer surgery: A systematic review and meta-analysis. Ann Surg Oncol. 2025 Jun 4.

Steffens D, Alves S, Koh C, Ansari N, Solomon MJ, Cecil T, Ahmadi N, McBride K, Mahon K, Mohamed F, Moran B. International prospective quality of life in patients with colorectal peritoneal metastases treated by CRS and HIPEC in the UK and Australia. Dis Colon Rectum. 2025 Jun 10.

Bai Z, Koh C, Solomon M, Shahab R, Hirst N, Alexander K, Pereira LSM, Lage APD, Steffens D. ASO Author Reflections: The evolving evidence of prehabilitation in frail cancer patients undergoing surgery. Ann Surg Oncol. 2025 Jun 23.

6.3 Conference presentations and posters

Koh C. CRS and HIPEC Workshop. Penang General Hospital, Penang, Malaysia. August 2024.

Koh C. Fistulising Crohn's disease. IBD Advanced School 2024, GENCA & IBDNA (IBD) Nurses Australia, Adelaide. 13 September 2024.

Koh C. Diverticular disease and anal disorders- what the gastroenterologist needs to know. Postgrad course - Australian Gastroenterology Week, Gastroenterological Society of Australia. Adelaide. 13 September 2024.

Koh C. Appendiceal mucinous neoplasms - overview of management and surveillance. CSSANZ Colorectal Annual Spring Meeting. 5 October 2024.

Tan S, Shu T, Karunaratne S, Steffens D, Ansari N, Solomon M, Brown K, Koh C. Futility in peritoneal malignancy and patients undergoing CRS and HIPEC surgery. 20th Congress of Asia Pacific Federation of Coloproctology (APFCP25), Sabah, Malaysia. 13 – 16 February 2025.

Shu T, Tan S, Karunaratne S, Koh C, Steffens D. Patient reported outcomes (PROs), what makes patients participate? 20th Congress of Asia Pacific Federation of Coloproctology (APFCP25), Sabah, Malaysia. 13 – 16 February 2025.

Koh C. Parastomal hernia. 20th Congress of Asia Pacific Federation of Coloproctology (APFCP25), Sabah, Malaysia. 13 – 16 February 2025.

Koh C. "IBD-Associated Rectal Cancer", "Parastomal Hernia". 20th Congress of Asia Pacific Federation of Coloproctology (APFCP25), Sabah, Malaysia. 13 – 16 February 2025.

Kim B, Fethney J, Tait MA, Rutherford C, White K. Examining common reasons and risk factors for emergency presentations post-colorectal cancer surgery: Implications for survivorship care. Cancer Survivorship Conference, Melbourne (poster). 6-7 March 2025.

6.4 Research collaborations and highlights

Over the past financial year, the team has contributed to multiple projects and are currently applying for further funding for identified key areas of interest in the peritoneal malignancy area. This has led to current submissions to multiple funders including the Medical Research Future Fund (MRFF), the National Health and Medical Research Council (NHMRC) and to the Colorectal Surgical Society of Australia and New Zealand (CSSANZ). The Program is proud to be moving into the next phase and developing efficiently to be competitive for major grant funding.

6.5 Establishing biobanking capabilities

A $300,000 Sydney Cancers Partner grant, led by medical oncology, was awarded in February 2023. This has accelerated development of the Peritoneal Malignancy Biobank, creating a unique opportunity to more deeply investigate the histopathological outcomes of this group of patients. The grant is also helping to fund translation of lab-based research (e.g. identifying biomarkers) that are likely to aid clinical decision making and develop tumour models to test new therapies in patients with peritoneal metastases arising from colon and appendiceal cancers.

6.6 Benchmarking RPA against international peritoneal malignancy programs

Benchmarking outcomes against international centres is crucial for maintaining and improving the quality of care in specialised medical programs such as the Peritoneal Malignancy Program. It provides valuable insights into the relative performance of the program, helps identify areas for improvement, and ensures that patients receive care that meets or exceeds global standards.

The RPA Peritoneal Malignancy Program has recently published an international prospective cohort study comparing outcomes with the Basingstoke & North Hampshire Hospital in the United Kingdom. This Australia-UK (AUS-UK) study evaluating patients from both sites provides contemporary data on surgical outcomes, survival rates, and quality of life trajectories for patients undergoing CRS and HIPEC for colorectal peritoneal metastasis.

While the study revealed excellent outcomes for patients in both centres, the Australian cohort had patients undergoing more complex surgeries, resulting in longer operating times and increased postoperative complications. However, the quality of life outcomes were equally favourable between the two centres throughout the follow-up period. This suggests that even patients undergoing more extensive procedures at RPA can achieve survival benefits and quality of life improvements to those treated at established international centres.

Importantly, the study demonstrated that RPA's outcomes are consistent with other high-volume centres worldwide. The overall results, including complete cytoreduction rates, ICU stay duration, and hospital length of stay, were comparable to those reported in major international trials such as PRODIGE 7. This consistency across different study populations reinforces the validity of RPA's outcomes and supports the generalisability of results following CRS and HIPEC.

The AUS-UK study also provided valuable data on the impact of PCI on surgical, survival, and quality of life outcomes. This information is crucial for informed decision-making and patient counselling, allowing RPA to refine its patient selection criteria and treatment strategies based on international best practices.

By actively participating in such international collaborations and benchmarking exercises, RPA demonstrates its commitment to continuous improvement and excellence in patient care. These efforts ensure that the Peritoneal Malignancy Program at RPA remains at the forefront of global standards in the treatment of peritoneal malignancies.

6.7 Higher degree research students

6.7.1 Doctor of Philosophy (PhD)

1. **Ms Tiffany Tsoukalas:** Enhancing gastrointestinal cancer surgery recovery

2. **Mr Zirong Bai:** The role of prehabilitation and rehabilitation in frail patients undergoing major cancer surgery.

6.7.2 Master of Philosophy (MPhil)

3. **Dr Pratik Raichurkar:** Developing a core outcome set for cytoreductive surgery for colorectal cancer with peritoneal metastases.

6.7.3 Doctor of Medicine (MD)

1. **Ms Alexandria Petridis:** Online preoperative screening to optimise care for patients undergoing cancer surgery.

2. **Ms Claudia Hall:** Identifying tools to support decision-making regarding patient expectations, goals, priorities and preferences for cancer surgery.

7. Education and Training

7.1 Overseas clinician visitors and surgical observership

Over the past financial year, the program has welcomed visitors from all over the world to showcase the overall running and processes that have led to such a successful program. This allowed medical consultants and other health professionals interested or involved in peritoneal malignancy to attend Royal Prince Alfred Hospital. This included visitors from China, Thailand, Taiwan, Singapore, India, Philippines, Brazil, Canada, Spain and the UK, who observed the program for periods of a month or longer. These visits allow for skill transfer and strengthening of the program's knowledge, whilst also increasing the reputation and notoriety of the program on a global scale.

7.2 Mentorship in establishing peritoneal malignancy programs

Over the past eight full years running the Peritoneal Malignancy Program, many challenges have been overcome to establish this highly effective service. As a result, multiple institutions have approached the team to advise and educate them on approaches to creating their own programs, to replicate this success. Of note, the team has supported the establishment of peritoneal malignancy services at Auckland City Hospital, Auckland, New Zealand and at Penang General Hospital, Malaysia. This has included proctorship of cases in a similar manner to when the RPA Peritoneal Malignancy Program was established and is a testament of how far this program has progressed since beginning. These relationships with proctored sites strengthen academic and clinical ties, as well as allow for improved knowledge exchange that can be maintained to benefit patients at all institutions.

7.3 Australia and New Zealand Peritoneal Malignancy Collaboration

When the service was established in 2017, the Australia and New Zealand Peritoneal Malignancy Collaboration (ANZPMC) was formed. This collaboration included all seven peritoneal malignancy centres across Australia and New Zealand with an aim to foster collaboration and multicentre research. An annual meeting of the ANZ PMC takes place to discuss future directions of the group. These meetings provide an exceptional opportunity to discuss the implementation of key ideas and address pertinent issues in this field focusing on future research.

8. Service Development and Future Plans

8.1 Future directions for the Advanced Gastrointestinal Surgical Nursing Training Program

The Advanced Gastrointestinal Surgical Nursing Training Program, which was established in 2017, is currently undergoing review. To ensure the continued success of the program a rigorous analysis is currently being undertaken with an estimated completion date of November 2026. Formal feedback and recommendations will be presented to the AGISP Steering Committee.

8.2 New South Wales peritoneal malignancy programs conference

After establishing the RPA Peritoneal Malignancy Program in 2017, the second statewide service in New South Wales, a combined conference with the St George Peritoneal Malignancy Program is planned for the second half of FY25/26. This event will focus on celebrating the achievements of both programs and providing ongoing education to staff members within medical and surgical specialties, allied health, nursing, research staff and Executives. This event acknowledges the amount of work and support required to ensure such high quality services are delivered to the community. As previously highlighted, widespread interest has been shown in progressing the program from members of multiple specialties within the treating team (including surgeons, anaesthetists, medical consultants, nursing and allied health staff), past patients, external partners and key stakeholders.

8.3 Peritoneal Surface Oncology Group International 2025 conference

As the program continues to meaningfully contribute to the evidence base on the international landscape, members of the team have continued present findings at major scientific meetings. In pursuit of this, the team have had 16 abstracts accepted to be presented in October 2025 at the peak international congress on peritoneal surface malignancies in Barcelona, Spain, held by the Peritoneal Surface Oncology Group International (PSOGI). Multiple topics will be covered by the team, including disease specific outcomes, predictors of positive outcomes, lived experience of patients and carers, healthcare equity across recipients of treatment, geographic variation of care, and patterns in healthcare delivery.

8.4 Australia and New Zealand Peritoneal Malignancy Collaboration

Coordinating collaboration between the eight peritoneal malignancy centres in this region, the ANZPMC is uniquely poised to provide a foundation from which collaborative studies that may be run to identify ways to tailor treatment to unique patients. Given the success of the ANZPMC meeting in October 2023, another meeting is being planned to be undertaken in the 2025/26 financial year. It is expected that this will provide an exceptional opportunity to build on previous discussions, as well as allow for further idea development and addressing ongoing or upcoming pertinent issues in the peritoneal malignancy area. These objectives include answering important questions regarding the optimal treatment for patients with peritoneal disease and how to improve and stratify their management. Collaborations such as Predict-Org allow for collaborations that investigate for molecular and genetic factors that could provide valuable prognostic information that may improve management. It may also identify potential novel therapeutic avenues that could improve the outcome of treatment of peritoneal disease.

8.5 Data evaluation and research planning meeting

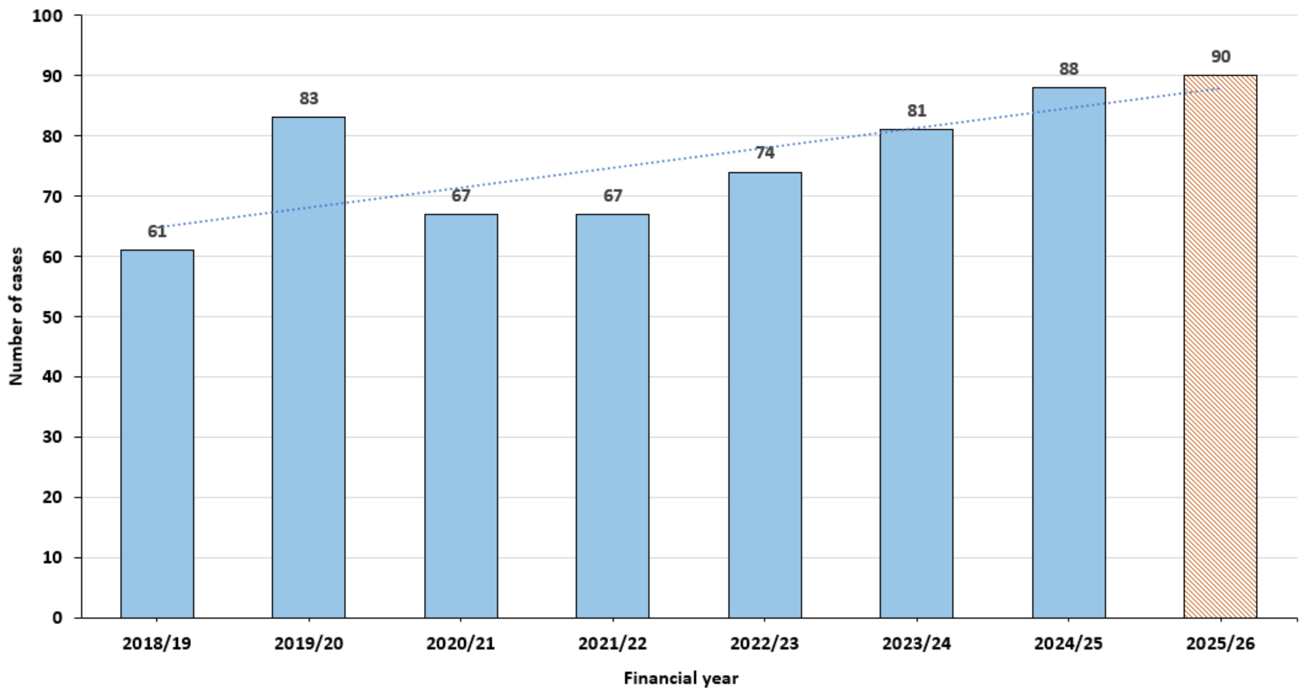
Given the increasing reputation and continuing maturity of the program, regular evaluation of the comprehensive database (PREMIER) that centralises information surrounding the clinical and patient-reported outcomes of patients who engage with this service is performed. This database has provided ongoing information to facilitate audits, reporting and research. As part of the routine quality assurance and program planning activities, a program wide Data Evaluation and Research Planning meeting is planned to take place in the first half of the 2025/26 financial year. In this meeting, an overarching summary of the collected data will be presented for review and critique by the team. Given the scope of clinical outcomes and increasing number of long-term patient follow-ups collected in this database, a stimulating discussion is expected to occur. The team will reflect on the experience of the program and the questions that the data raises to generate an action plan to disseminate the knowledge gained and the future research questions that need to be answered. In addition to this, collected data variables will be re-examined, and plans will be made to ensure future data collection reflects the needs of the program.

8.6 Program activity projections

The number of CRS and HIPEC cases at RPA are expected to progressively increase each financial year. Future growth is expected in line with the growing recognition from referring specialists that considerable patient benefits can be achieved for selected patients, by referring complex cancer patients to dedicated surgical centres. An increase in re-operation for resectable recurrence is cumulative and will also contribute to an increased need. Other factors including population growth and the reputation of the service at RPA allowing equity of access to complex cancer treatment are also contributory.

Based on the trailing average of cases performed in the previous financial year, it is anticipated that a 2% increase in the number of CRS and HIPEC cases over those performed in FY2024/25 will occur in FY2025/26. This will bring the total to approximately 90 cases, which is an average of 8 cases per month (**Figure 11**).

Figure 11. Predicted number of CRS and HIPEC cases at RPA for 2025/26 financial year



9. Conclusion

The RPA Peritoneal Malignancy Program continues to expand and is a tribute to the vision and support of NSW Health, the expertise and “can-do” approach of SLHD and RPA senior management and the skill of medical, nursing, allied health, and research teams.

RPA has continued to maintain a very high standard of care by actively engaging in and fostering multidisciplinary models of care for peritoneal malignancy patients, having close collaborative ties with other departments who are an integral part of the service. Regular MDT meetings, allied health service meetings, quality assurance activities (morbidity and mortality meetings, case discussions, and education seminars) have all provided the platforms where such models of care can be discussed. The impacts on the delivery of services have been largely ameliorated thanks to executive decisions to support the service and members of the team cooperating and working together to ensure the ongoing delivery of complex cancer care.

The development and future expansion of the service requires additional capacity and resources. This should be factored into future plans regarding allocation of hospital resources. Patient outcomes are excellent and novel quality of life evidence along with data on the effectiveness and cost-effectiveness of CRS and HIPEC continue to be a focus of this complex surgical oncological service. Further, evaluation of the impact of other major and vital operations performed in the program, including CRS only and MTD procedures, is required to accurately represent the important work of the RPA Peritoneal Malignancy Program. The AGISP, supported by the IAS and SOuRCe, provides the ideal platform to meet these future demands through education programs, development of clinical pathways, research, and through collaboration with other centres involved in treating peritoneal malignancy cases.

10. Appendices

10.1 Peritoneal Malignancy Program team for the 2024/25 financial year

Appendix 1. Staff involved in the Peritoneal Malignancy Program at RPA in the 2024/25 financial year	
Management	
Prof Michael Solomon	Co-Chair IAS and AGISP Program Director
Dr Nabila Ansari	Peritoneal Malignancy Program Lead, RPA
Prof Brendan Moran	Senior Advisor, Basingstoke Hospital
Dr Kate McBride	Director, Surgical Program & Academia, SLHD
Dr Sophie Hogan	Director, IAS
Prof Daniel Steffens	Director, SOuRCe
Prof Steve Chadban	Clinical Director, Gastro & Liver Clinical Stream, SLHD
Prof Simone Strasser	Head of Department, Gastroenterology
Ms Skye Cooke	Clinical Manager, Gastro & Liver Clinical Stream, SLHD
A/Prof Ilona Cunningham	Clinical Director, Cancer Services Clinical Stream, SLHD
Ms Eleanor Romney	Clinical Manager, Cancer Services Clinical Stream, SLHD
Dr Martin McGee-Collett	Program Director Surgery, SLHD
Dr Peter Lee	Director of Surgery, RPA
Consultant Surgeons	
Dr Nabila Ansari	Peritoneal Malignancy MDT Chair & Program Lead, RPA
A/Prof Cherry Koh	Colorectal Research Lead, RPA
Dr Nima Ahmadi	Colorectal Surgeon, RPA
A/Prof Rhonda Farrell	Gynae Oncologist, RPA
A/Prof Charbel Sandroussi	Upper Gastrointestinal Surgeon, RPA
A/Prof Jerome Laurence	Upper Gastrointestinal Surgeon, RPA
Consultant Anaesthetists	
Dr Rebecca McNamara	Anaesthetist, RPA
Dr Paul Drakeford	Anaesthetist, RPA
Dr David Zalcberg	Anaesthetist, RPA
Medical Consultants	
A/Prof Kate Mahon	Medical Oncologist, COBLH
Dr Sarah Sutherland	Medical Oncologist, COBLH
Dr Heike Koelzow	Intensive Care Specialist, RPA
Dr Tim Brake	Pain Specialist, RPA
Dr Lynn Na Lim	Palliative Care Specialist, RPA
Dr Samer Ghattas	Radiologist, RPA
Specialist Nursing	
Ms Mae Arispe	AGISP MDT Coordinator
Ms Annie Dela Cruz	Peritoneal Malignancy Clinical Nurse Consultant, RPA
Ms Anna Rzewnis	A/Peritoneal Malignancy Clinical Nurse Consultant, RPA
Ms Gabrielle Winn	Peritoneal Malignancy Clinical Nurse Consultant, RPA

Ms Jessie Seelin	A/Nursing Unit Manager 7E2, RPA
Ms Lilian Whitehead	Nursing Unit Manager 7E2
Ms Stella Pillai	Nurse Manager JL Theatres, RPA
Ms Karla Nool	Nursing Unit Manager POD 3 JL Theatres, RPA
Ms Melanie Robson	Nursing Unit Manager POD 3 JL Theatres, RPA
Mr Hayden Tran	Nurse Manager Intensive Care, RPA
Ms Liz Beyer	Total Parenteral Nutrition Clinical Nurse Consultant, RPA
Mr Simon O'Toole	Total Parenteral Nutrition Clinical Nurse Consultant, RPA
Ms Colleen Mendes	Stomal Therapy Clinical Nurse Consultant, RPA
Ms Maria Bongat	Stomal Therapy Nurse Specialist, RPA
Allied Health	
Ms Marine Salter	Clinical Psychologist, RPA
Ms Kathryn Cherry	Dietitian, RPA
Ms Alana Hutchings	Social Worker, RPA
Ms Eloise Vozzo	Social Worker, RPA
Research Team	
Prof Daniel Steffens	Director, SOuRCe
A/Prof Cherry Koh	Associate Professor Surgical Outcomes, SOuRCe
Dr Sascha Karunaratne	Research Manager, SOuRCe
Ms Kaheesha Rai	Peritoneal Malignancy Officer, SOuRCe

10.2 Royal Prince Alfred Hospital Peritoneal Malignancy Program timeline