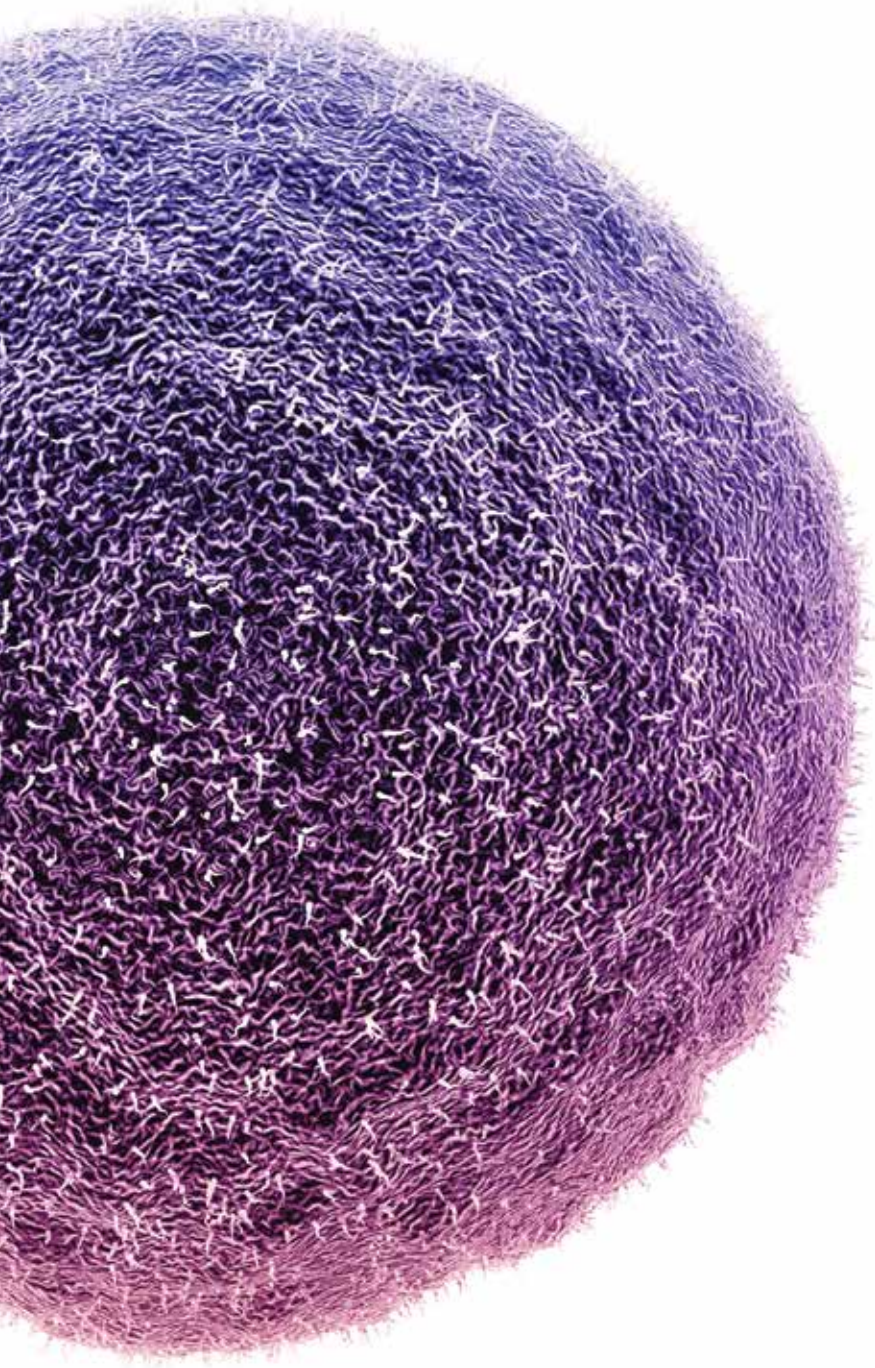
Trinity St James's Cancer Institute



ANNUAL REPORT **2019**

Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

ST JAMES'S HOSPITAL

Contents

Introduction

Professor Paul Browne
Director

On behalf of all our colleagues, it is a pleasure to introduce the Trinity St James's Cancer Institute Annual Report for 2019. The continued progress and development of the Trinity St James's Cancer Institute represents an ongoing dynamic collaboration between Trinity College Dublin and St James's Hospital, which is taking place in a very exciting era for cancer care delivery, research and education internationally. The Institute conducts and supports research, training, education, and health information dissemination, with respect to the causes, diagnosis, prevention, and treatment of cancer and the continuing care of cancer patients and their families. Our mission is to integrate innovative cancer science with multidisciplinary, patient-focused clinical care through translation of key research findings into real advances for the benefit of our patients.

The undoubted highlight of 2019 was our achievement of accreditation and designation as Ireland's first OECI (Organisation of European Cancer Institutes) Cancer Centre, following a rigorous international assessment and review process. This international validation of our activity as an Institute is the product of an enormous amount of enthusiasm, commitment, and hard work by so many people, only some of whose work we can capture here, but to all of whom we owe our sincere thanks on behalf of our patients.

Our activity and developments over the last year are described in this report, with a common underlying purpose of improving outcomes by providing research-led diagnosis and treatment, and by developing a better understanding of cancer through interdisciplinary research. We were very pleased to establish our Programme Office during 2019, which underpins much of our ongoing work as an OECI Centre, and our detailed planning for a new dedicated and much needed facility on the St James's campus. Improving and expanding our clinical trials infrastructure and activity continues to be a major objective, with significant developments during 2019. A comprehensive approach to quality in cancer is central to our mission, and we summarize a range of important quality metrics and approaches throughout the report.

Our overall ambition for the Trinity St James's Cancer Institute is to become a fully comprehensive cancer centre, with particular strengths and focus in cancer molecular diagnostics, genomics and translational immuno-oncology. As we continue to make progress in this regard, we are pleased that the launch of the Trinity Campaign "Inspiring Generations" in 2019 highlights our Institute, recognising its importance as a standard bearer for cancer care in an international context, and we welcome its support. Achieving this goal of fully comprehensive cancer centre designation will see the Trinity St James's Cancer Institute provide important national leadership, ultimately contributing to a reduction in cancer incidence and mortality in Ireland.

We hope you find the report a useful and interesting summary of our work in 2019. Our primary focus remains the provision of the best possible care and outcomes for our patients and their families living with cancer. In this regard, we would really like to acknowledge the outstanding commitment and effort by so many colleagues from all disciplines and services whose contribution is reflected here.

Professor Paul Browne
Director

Trinity St James's Cancer Institute Programme Office

The Trinity St James's Cancer Institute (TSJCI) Programme Office was established in April 2019 with the commencement of a new programme manager (Ms Paula Corby).

A clinical advisor (Ms Cathy Enright) was appointed in July 2019.

The role of the Programme Office is to support and maintain the Organisation of European Cancer Institute (OECI) cancer centre accreditation and designation; a review is scheduled for September 2020, and to support requirements to achieve OECI Comprehensive Cancer Centre designation. A re-accreditation review is scheduled for 2024.

The Programme Office also supports the assessment and analysis of requirements for a dedicated cancer institute facility on the St James's campus, incorporating the domains of clinical care, research and education in one building. The outcome of the exercises will inform requirements for the supporting business case for the facility.

Visit to The Christie Cancer Centre in Manchester

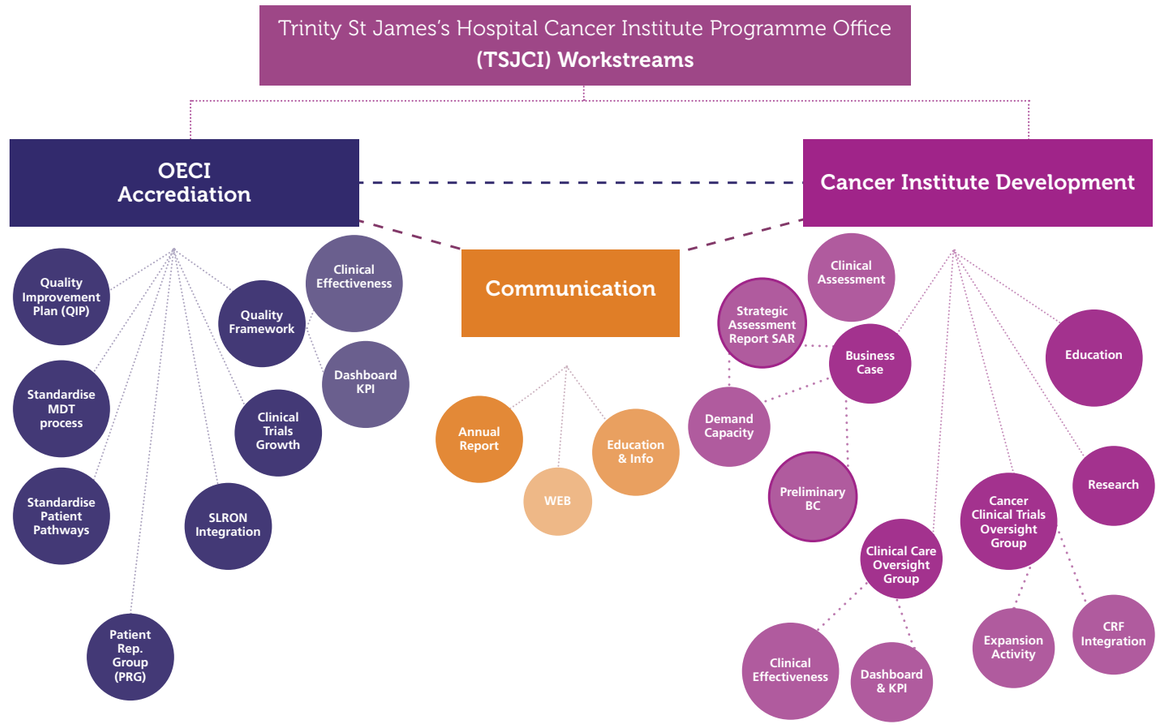
Key Achievements 2019

- Organisation of European Cancer Institutes (OECI) accreditation assessment (April 2019).
- Awarded OECI Cancer Centre Accreditation and Designation (September 2019), with award ceremony to follow in June 2020.
- Phase one of clinical needs assessment exercise to inform the business case to define the requirements for a cancer institute building.
- Developed Quality Improvement Plan (QIP) for OECI requirements.
- Visit to the Christie Cancer Centre in Manchester, UK, in July 2019. This was a very successful visit by a delegation which included representatives from our clinical, research and education pillars. The Christie is Europe's largest single-site cancer centre, and is an OECI accredited Comprehensive Cancer Centre.
- Oversaw the development of a Quality and Safety Operating Framework in collaboration with the National Cancer Control Programme (NCCP). The pilot, which was carried out with the Lung Cancer Service, will inform a national quality framework for cancer and will serve as a cancer quality framework within St James's Hospital.
- Commencement of work-stream to standardise multidisciplinary team (MDT) processes.

Key Activity

The programme office manages a number of work streams grouped into primary themes with multiple comprehensive work streams within each.

Figure 1 Programme Office work streams



The OECI identified a number of opportunities for the Cancer Institute which broadly comprises of: increasing participation in cancer clinical trials, standardisation of patient care pathways and the Multidisciplinary Team Meeting (MDT) processes, developing a coordinated research strategy, provision of a quality framework for cancer, improving capacity constraints and enabling patient empowerment. (For additional detail please refer to the Quality Report, page 146 -151). A Quality Improvement Plan (QIP) to address the identified opportunities for improvement was approved by the OECI and will be reviewed again in November 2020. The QIP provides one of the core work-stream functions for the Programme Office.

The Programme Office also provides project management and business case support to determine requirements for a Cancer Institute facility on the St James's campus. In 2019 it conducted a detailed clinical needs analysis exercise with all cancer care specialities and relevant support services. The clinical needs analysis assessment activity is an on-going exercise until the completion of the overall business case, aligned to Public Spending Code guidelines.*

The Programme Office also works closely with relevant external stakeholders including the National Cancer Control Programme (NCCP) to standardise patient pathways and processes and with the Irish Cancer Society (ICS) in terms of patient support and engagement.

Key Priorities 2020

- Implement all agreed elements of the Quality Improvement Plan to maintain Cancer Centre accreditation and designation by OECI with the goal of achieving Comprehensive Cancer Centre status.
- To be fully prepared for OECI one-year review, scheduled for September 2020.
- Establishment of the TSJCI Programme Office to provide support for cancer care and related research activity within Trinity and St James's Hospital.
- Development of a quality framework for cancer care.
- Enable the patient voice through the establishment of a Patient Representative Group.
- Patient care pathway development aligned with the NCCP guidelines and quality initiatives.
- Support the implementation of electronic anti-cancer medication system.
- Progress the business case for the development of cancer services within the TSJCI.

* (https://www.gov.ie/en/publication/public-spending-code/)

SECTION 1

Clinical Care Services and Structures

Professor John Reynolds, Clinical Lead

Clinical Care Executive Summary

Cancer activity at St James's Hospital represents approximately 30% of daily activity in the hospital. Of the cancer sites audited, there were approximately 3,915 patients diagnosed and/or treated in 2019.

Comprehensive cancer care is delivered through a multidisciplinary team model for each cancer type. This model is supported operationally by executive management and the hospital's directorate structures. In addition, St James's Hospital provides information on key performance indicators (KPIs) to the National Cancer Control Programme (NCCP) for clinical cancer services, including rapid access prostate and lung programmes.

Following the visit by our accrediting body, the Organisation of European Cancer Institutes (OECI) in October 2019, the TSJCI and OECI agreed a quality improvement plan (QIP). This QIP contains key actions for development of the clinical pillar. The TSJCI clinical lead and the Cancer Institute Programme Office is responsible for progressing many of the actions identified.

In 2019, the TSJCI clinical pillar has seen development in the following areas:

1. A Clinical Oversight Group was set up with monthly presentations from leads in all the tumour sites, and from medical and radiation oncology, nursing, psycho-oncology and palliative care. Presentations encompassed key areas including the current strengths and weaknesses across (i) access; (ii) diagnostic clinic; (iii) MDT function; (iv) treatment; (v) follow up; and (vii) clinical and scientific research. Each Lead also presented their five-year vision within the academic cancer institute model. These meetings and presentations took place in March, June, September, October and November.
2. Cancer pathway mapping and development represents a key element of evolution and strategy within the cancer institute model; this has now been activated for lung cancer and is being developed for oesophageal cancer.
3. Redesign of all MDT meetings to make them completely electronic and linked to the hospital's Electronic Patient Record (EPR) system. This will enable robust capture of complex decision making at MDT and support audit of our patient pathway and MDT processes.
4. Integration of cancer audit across the hospital with each team evaluating their care and service at Clinical Care Oversight Group (CCOG) and morbidity and mortality meetings with a view to improving patient care and learning.

The Trinity St James's Cancer Institute also participates in European and international accreditation programmes including JACIE; the Joint Accreditation Committee of the International Society for Cellular Therapy (ISCT) and the European Group for Blood and Marrow Transplantation (EBMT).

These initiatives have resulted in establishing integrated cancer care across the hospital, modernising and developing existent structures and processes to the highest possible standard set against international benchmarks, while enhancing our identity as a cancer institute.

1 Breast Service

1 Breast Service

Overview of Service

In 2007 the National Cancer Control Programme (NCCP) designated St James's Hospital as one of the eight specialist centres for treating symptomatic breast disease in Ireland.

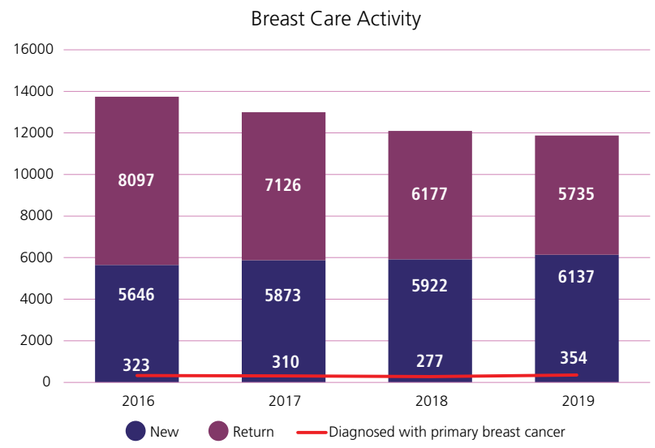
The Breast Care Unit at St James's Hospital provides services for patients with all forms of symptomatic breast disease including breast cancer. Patients are reviewed at triple assessment clinics which take place three days per week. These clinics provide the opportunity for clinical examination, breast imaging and diagnostic biopsy as deemed appropriate. The clinical and radiology team work in unison, in order to ensure patients are promptly reviewed and investigated. Multidisciplinary management underpins care. A weekly MDT meeting takes place which includes breast surgeons, radiologists, pathologists, a medical oncologist, radiation oncologists, specialised breast care nurses and administrators. Cases are discussed, results are reviewed and treatment plans determined including breast reconstruction surgery. Diagnosis clinics, treatment plan clinics, review clinics and nursing clinics take place throughout the week and provide patients with optimum care and support from initial clinical presentation leading to diagnosis, and ultimate formation of a management plan and treatment pathway.

Patients are referred to plastic surgery colleagues for assessment and reconstruction planning. The plastics team provide microvascular autologous reconstruction. The plastic surgery service currently provides for breast cancer patients having immediate breast reconstruction at the time of mastectomy, delayed breast reconstruction and patients that have had a mastectomy in the past. A growing number of familial and high risk patients attending the Family Risk and Genetics services are referred to the plastics team for reconstruction following risk reduction surgery. In addition, the plastics team provides a service for patients with congenital or acquired symptomatic breast disease.

The Breast Care Unit also provides a high-risk surveillance service to women who have an increased risk of developing breast cancer over their lifetime due to an inherited gene mutation which predisposes them to breast or ovarian cancer. There is also a cohort of patients who although they have no identified known gene mutation, are considered high-risk following assessment with a combination of validated breast cancer risk prediction models applied to individual patients to accurately evaluate their cancer risk (Figure 5).

Depending on risk stratification, patients may be entered into a surveillance programme to include clinical examination and mammography with the addition of breast MRI in those with identified high-risk mutations, for example BRCA 1 or BRCA 2 or equivalent risk. In gene positive women we also discuss and offer the option of risk reduction in the form of prophylactic surgery and reconstruction. A family risk MDT meeting with input from breast surgeons, radiologists, genetic counsellors and the breast care nursing team meets regularly to discuss more complex cases.

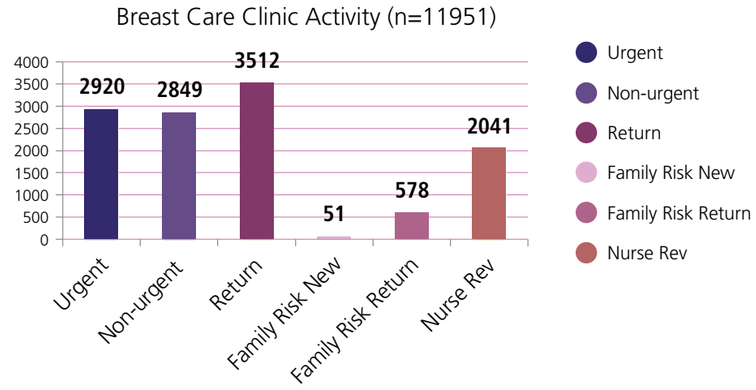
Figure 1 Breast Care Activity



Breast Care Activity

Figures 1 and 2 describe attendance activity to the Breast Care Unit and numbers of patients diagnosed with breast cancer.

Figure 2: Breast Care Clinic Activity Breakdown 2019



Clinical Detail and Analysis

The breast care data manager works with the MDT to provide detailed tracking and analysis of breast cancer diagnoses, staging and treatment pathways to enable KPI reporting, clinical audit and survival analysis. Figures 3, 4 and Table 1 describe some of the clinical data reported from the Cancer Audit Programme registry.

Figure 3 Breast care activity

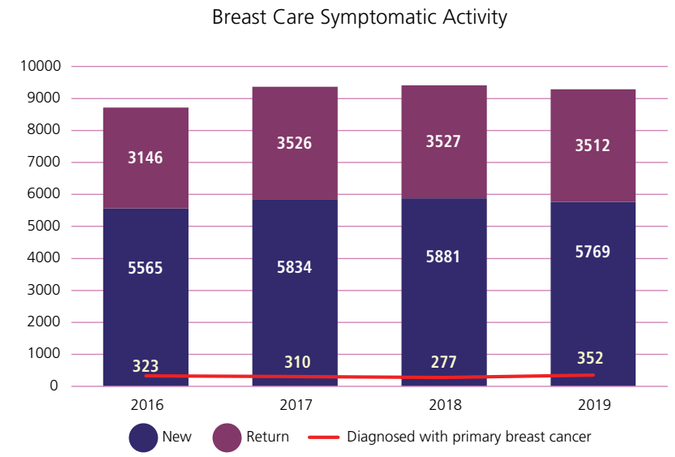


Figure 4 Breast Cancer Staging

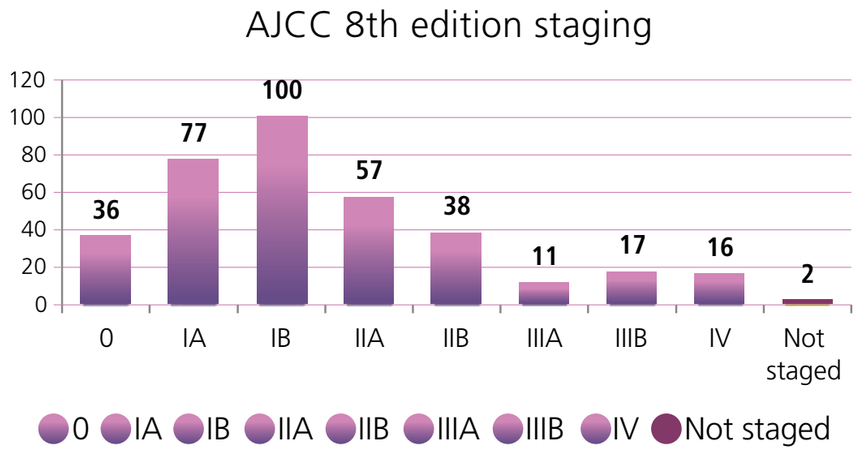


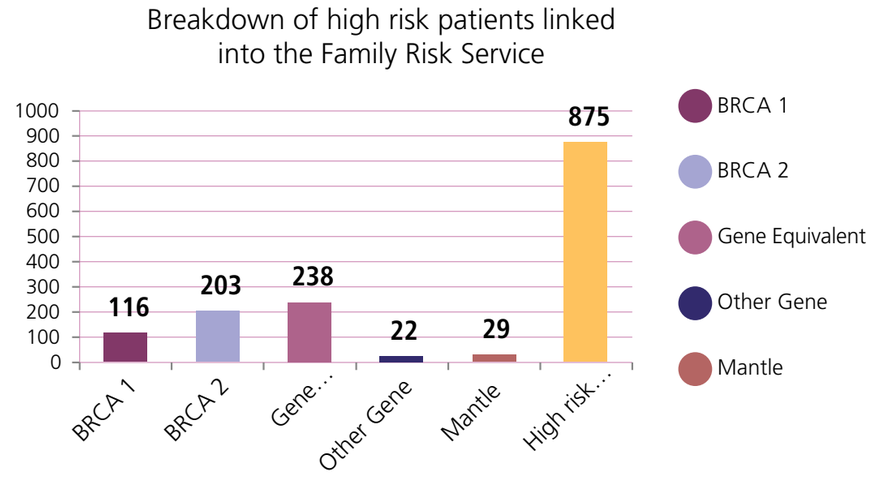
Table 1 Planned first treatments

Surgery	195
Neo Adjuvant Hormones	49
Neo Adjuvant Chemotherapy	85
Primary Hormones	5
Palliative	15
Other	5
TOTAL	**354**

"To the girls in the unit, thank you so much for your kindness, great cheer and words of encouragement to get me over the line, you made it easy for me".

patient feedback

Figure 5 Family Risk Service



- 354 patients diagnosed with breast cancer
- Nearly 77% of patients were stages 0-2
- Just over 55% of patients had surgery planned as their first treatment
- Breast conserving was the most common type of surgery

Key Achievements

Research Nursing Award 2019
Irish Cancer Society Cancer Research Nursing Award 2019

- Development of a "Risk Reduction Patient Decision Aid Toolkit for Women with a BRCA+ Gene Mutation".

This award was provided by the Irish Cancer Society and is aimed specifically at research projects within the oncology setting carried out by a nurse-led team. The project will be carried out by a joint clinical and academic nurse lead. The Advanced Nurse Practitioner (ANP) in breast care at St James's is the clinical nurse lead for this project.

The aim of the study is to develop or adapt an already existing "decision aid tool" for this high-risk genetic mutation group who are faced with both complex and personal decisions regarding their future health and life time cancer risk. This decision aid tool will give the user information specific to BRCA risks and information regarding risk reducing strategies with statistics and up to date evidence to support women in making an informed choice. It will aim to include graphics and images relating to cancer risk and surgical options.

Training

- Development of an accredited training programme for education and training of nurses in the area of micropigmentation of the nipple following breast/ nipple reconstruction

This course has been delivered to breast care nurses both locally in St James's Hospital and nationally, resulting in the upskilling of Clinical Nurse Specialists/Managers (CNS/ CNM) to carry out nipple micro pigmentation for women following reconstructive breast surgery.

Key Priorities for 2020

- Continued input into NCCP redrafting of referral guidelines for the National Symptomatic Breast Services
- To continue to develop the role and capacity of nurse-led functions within the breast service, in particular in relation to the area of Advanced Nurse Practice (ANP). The ANP role in Breast Care has provided another level of care and access for both the symptomatic and the high-risk group of patients attending breast services in St James's Hospital
- Establish a new role for a breast physician to aid in the assessing of the high numbers of women referred to our symptomatic Breast Care Unit
- Work with the NCCP to establish a quality surveillance program for women at high genetic risk of breast cancer development

2 Colorectal Service

2 Colorectal Service

Overview of Service

The colorectal service is managed by a multidisciplinary team. Four colorectal consultant surgeons (Mr Brian Mehigan, Mr Paul McCormick, Mr John Larkin and Mr Fady Narouz provide specialised integrated "single team care". Mr Jamie O'Riordan and Mr Dara Kavanagh hold joint SJH and Tallaght University Hospital appointments for rectal cancer surgeries. Two senior specialist registrars work in a level three colorectal training post as approved by the Association od Coloproctology of Great Britain and Ireland (ACPGBI).

Consultant Oncologists, Professors Gallagher and Kennedy, provide oncology care for patients with colorectal cancer. The medical oncology service is supported by a liaison nurse and research nurses. Radiation oncology is led by Dr Charles Gillham and is supported by a radiation liaison nurse.

Specialist histopathology, radiology, interventional radiology, gastroenterology, palliative care, psycho-oncology services are key to the colorectal service. Prof. Gallagher provides the link to genetic services.

Colorectal nurse co-ordinators, Ms Delia Flannery and Ms Katrina O'Connor facilitate the management and support of colorectal cancer patients as they follow the pathway through referral, diagnosis, treatment and follow up. A weekly nurse-led follow up clinic for patients who have curative surgery for colorectal cancer provides a more complete and accurate patient follow up in a patient focused environment.

Weekly MDT meetings which are organised by MDT co-ordinators provide a structured and co-ordinated approach to the delivery of cancer care. The MDT meeting is also attended by a Consultant Liver Surgeon (Mr John Conneely, Mater Misericordiae University Hospital). The meeting has a tele-link with Tullamore General Hospital.

A Colorectal Cancer Care Pathway is in place using evidence based research and guidelines from the ACPGBI and is regularly reviewed and updated.

A full range of open, laparoscopic and transanal resectional surgery with, where necessary, pouch reconstruction, is practiced in the colorectal unit. Colonic stenting is provided as a bridge to surgery for patients presenting with obstructing tumours, and for palliation of obstructive symptoms. Transanal minimally invasive surgery (TAMIS) has been introduced on a selective basis An Enhanced Recovery after Colorectal Surgery (ERAS) programme was initiated in April 2013. The principle of ERAS is to enable the patient to have a more rapid recovery from surgery in order to leave hospital sooner by minimising the stress responses on the body during resection surgery.

The Colorectal Cancer Screening service commenced in 2013, offering free screening to men and women aged between 55-74 years. The first screening colonoscopy was carried out in August 2013. Since then, SJH has accounted for approximately 12% of the national screening service, with 645 screening colonoscopies performed, and 20 new cancers diagnosed in 2019.

SJH continues to participate in national audit via the NCCP defined Key Performance Indicator (KPI) programme for rectal cancers. Introduced in 2014 to measure the timeliness of access to services, investigations and treatment of colorectal cancer patients, SJH continues to meet and exceed compliance. These standards are under regular review to measure compliance.

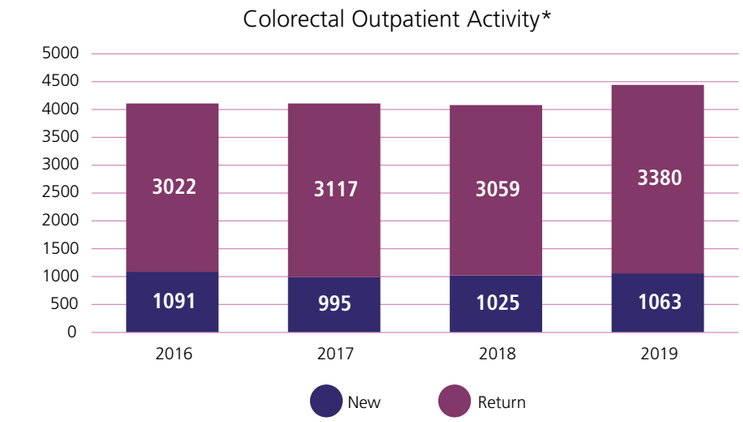
An electronic colorectal cancer database, managed by Ms Chris Gleeson, enables the capture of all information relating to the patient journey, including referral, diagnosis, treatments and follow-up, ensuring quality assurance and facilitating clinical research.

Colorectal Service Activity

Outpatient activity in 2019 compared with previous years is shown in Figure 1 below. with approximately 9% increase in activity since 2018

Colorectal Activity

Figure 1 Colorectal outpatient activity



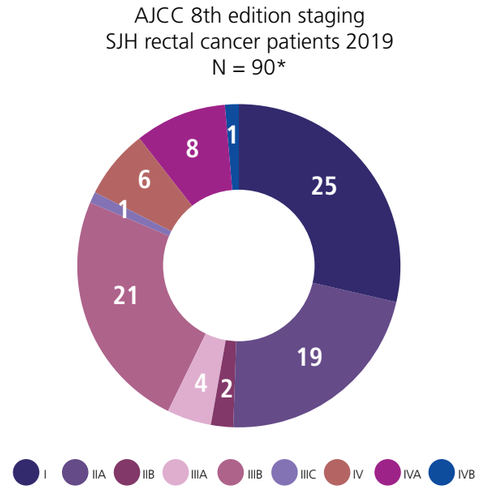
*Activity includes general and oncology attendances

Clinical Details and Analysis

The colorectal cancer data manager work with the MDT to provide detailed tracking and analysis of colorectal cancer diagnoses, staging and treatment pathways to enable KPI reporting, clinical audit and survival analysis. Figures 2, 3, 4, 5 and Tables 1 and 2 describe some of the clinical data reported from the Cancer Audit Programme registry.

2.1 Rectal Cancer

Figure 2 Rectal Cancer Staging

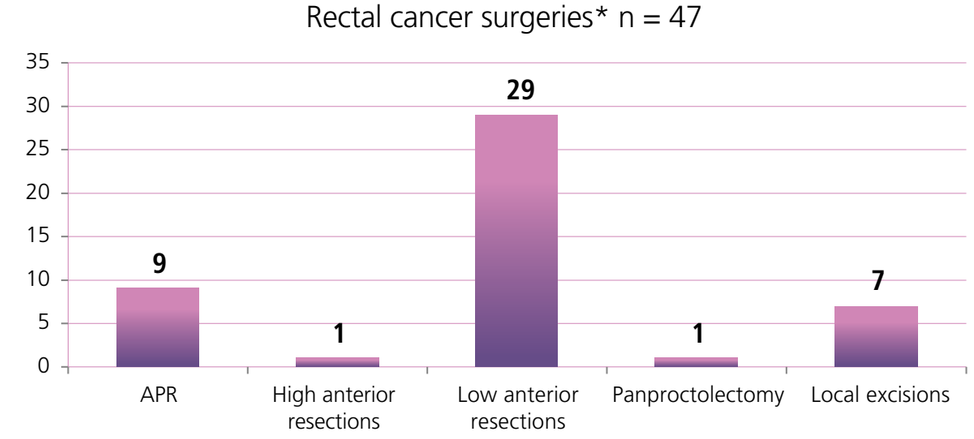


*Includes two Grade 1 and one Grade 2 neuroendocrine tumours

Table 1 First planned treatments

Rectal Cancer Patients	
Chemotherapy	9
Neoadjuvant chemo/RT	48
Surgeries	19
Local Excisions	13
Palliative	1
TOTAL	**90**

Figure 3 Rectal cancer surgeries

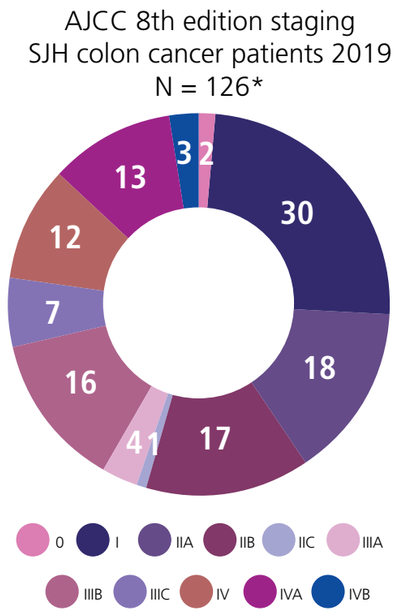


*includes patients diagnosed in 2018 and 2019

- Neo-adjuvant treatment was planned for 53% of rectal cancer patients

2.2 Colon Cancers

Figure 4 Colon Cancer Staging



*Includes three Grade 1 neuroendocrine tumours

- Over half of the patients diagnosed in 2019 had stage 0-2 colon cancer

Table 2 First planned treatments

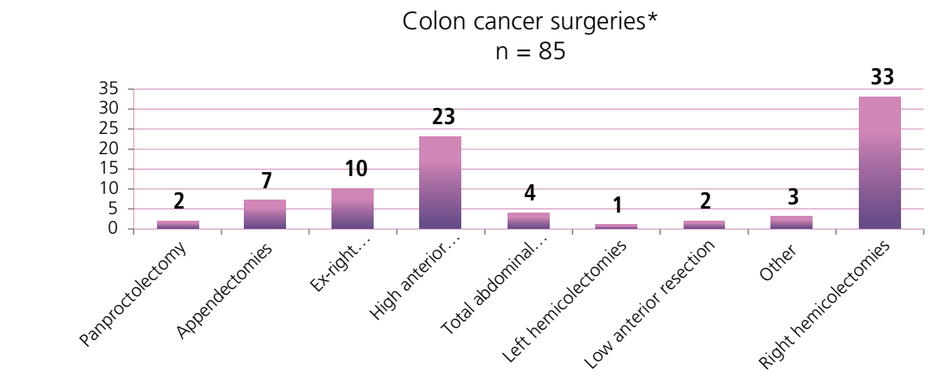
Colon Cancer Patients	
Chemotherapy	10
Neo-adjuvant chemo/RT	10
Surgeries	88
Polypectomies	9
Palliative	9
TOTAL	**126**

- Approximately 70% of colon cancer patients had surgery as their first planned treatment

Key Priorities for 2020

- Numerous clinical and laboratory research projects in colorectal cancer underway
- Surgical trainee undertaking a research MD with Prof Jacintha O'Sullivan and the colorectal department
- Collaborative multicentre rectal cancer clinical study (TENTACLE) in progress
- Development of electronic MDT outcomes on EPR

Figure 5: Colon cancer surgeries



*includes patients diagnosed in 2018 and 2019

3 Gynaecology Service

3 Gynaecology Service

Overview of Service

Gynaecological cancer care at St James's Hospital is accredited by the NCCP as a referral centre for the care of women with all genital tract malignancies, and as a specialist centre for vulval cancer and exenterative surgery. The gynaecological surgical facility at St James's Hospital is now dedicated exclusively to the provision of care for women with cancer, gynaecological disease arising in women with other cancers, and women with complex benign gynaecological diagnoses. This arrangement has been facilitated by our sister Trinity gynaecological units at the Coombe Women's & Infants' University Hospital (CWIUH), Tallaght University Hospital (TUH) where a robust referral mechanism has been developed.

The gynaecological cancer care programme is based around a weekly multidisciplinary conference that is attended by all relevant specialists.

The gynaecological oncology division has four subspecialist trained surgical gynaecological oncologists, Dr Noreen Gleeson, Dr Tom D'Arcy, Dr Waseem Kamran, and Dr Feras Abu Saadeh). Minimal access (laparoscopic) approach to surgery is part of the standard of care for cervical and endometrial cancers. Sentinel node mapping is available. The gynaecological oncology division supports the genetic breast/ovary clinic with a risk reduction surgical service.

The surgical service focuses on pre-habilitation with exercise and nutrition programmes before surgery and enhanced recovery in the surgical pathway. There is a special interest in quality of life outcomes and special attention to prevention and management of long-term adverse sequelae such as lymphoedema.

The Colposcopy service is located at CWIUH and TUH. Dr Tom D'Arcy is director of the colposcopic/pre-invasive cervical cancer programme.

Specialist medical oncologist for gynaecological cancers is Dr Dearbhaile O'Donnell. There is an active clinical trials portfolio with dedicated research nurses. Molecular diagnostics are provided by the Cancer Molecular Diagnostic (CMD) laboratory, enabling personalised and targeted treatment of patients at St James's Hospital.

Specialist radiation oncologist for gynaecological cancers is Dr Charles Gillham.

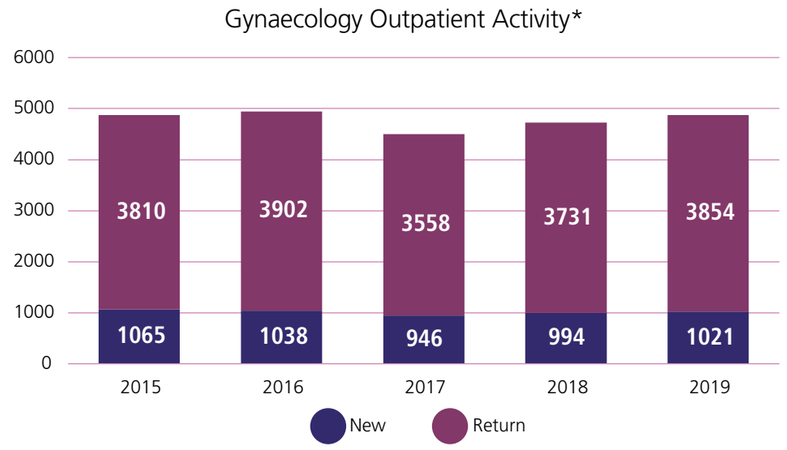
Clinical nurse specialists in gynaecological cancer care are Ms Debra McKnight, Ms Ciara Donohoe, and Ms Elaine Gray. The data manager is Ms Therese Brown.
The gynaecologic oncologists are subspecialist trainers and the training programme is approved by the Royal College of Obstetricians and Gynaecologists (RCOG). St James's Hospital is the only unit in the Republic of Ireland that is RCOG accredited for senior fellowship training.
The large case volume and complex clinical caseload in a multidisciplinary setting provides a high-quality training framework.

Research is undertaken in conjunction with Clinical Trials Ireland/Gynaecologic Cancer Intergroup (GCIG) for clinical trials and Trinity College Dublin for basic science / laboratory projects. The basic science facilities are directed by Professor John O'Leary, Dr Lucy Norris and Dr Sharon O'Toole. The research activity includes gynaecological cancer biology, pathology, coagulation, genomics and oncometabolomics. Basic science research fellowships are available for clinicians in training and undergraduates and postgraduates are encouraged to participate in research.

Gynaecology Service Activity

Figure 1 describes the gynaecology service outpatient activity

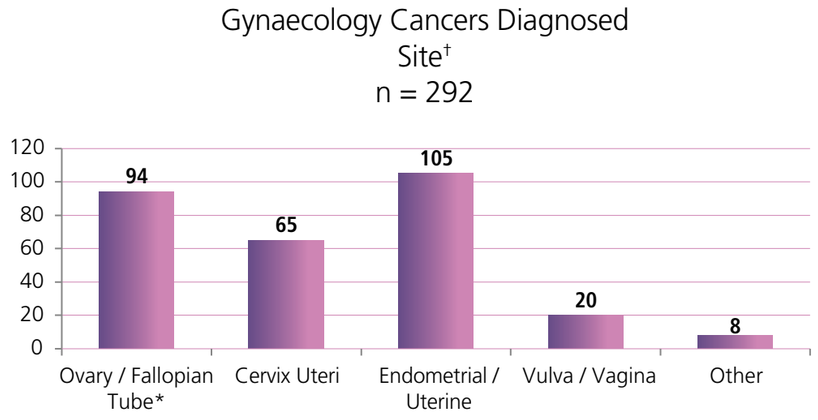
Figure 1 Gynaecology Activity



*Activity includes general and oncology

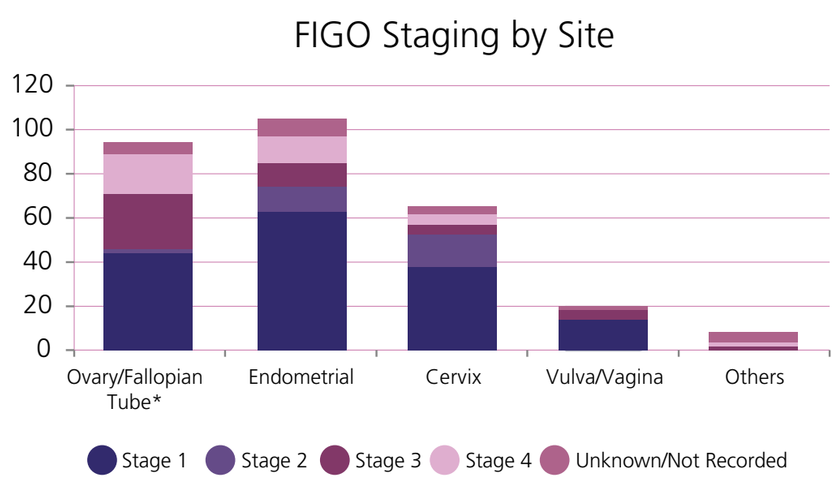
The gynaecology cancer data manager works with the MDT to provide detailed tracking and analysis of gynaecology cancer diagnoses, staging and treatment pathways to enable KPI reporting, clinical audit and survival analysis. Figures, 2, 3 and Table 1 describe some of the clinical data reported from the Cancer Audit Programme registry.

Figure 2: Gynaecology Cancers Diagnosed by Site



*Includes 21 borderline tumours †292 tumour sites in 289 patients

Figure 3: Gynaecology Cancer Staging by Site*



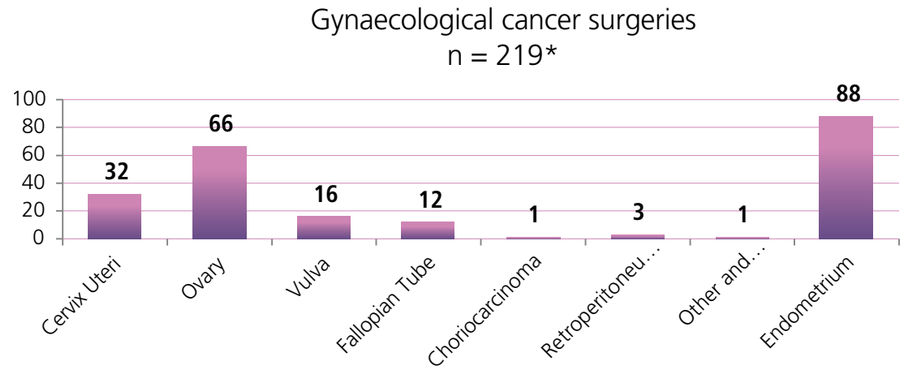
- 55% of patients were stage 1

Table 1 First planned treatment

First Planned Treatment	
No treatment	4
Best Supportive Care	2
Surgery	226
Radiotherapy	7
Chemotherapy	31
Chemo-radiation	17
Hormone therapy	1
2nd opinion only	1
TOTAL	**289**

- Almost 80% of patients had surgery planned as their first treatment

Figure 4: Gynaecology Cancer Surgeries



* includes patients diagnosed in 2018 and 2019

- Endometrial surgery was most common surgery type in 2019

Key Achievements in 2019

Fellowship accreditation for subspecialist training was renewed for 2019-2021 by the Royal College of Obstetricians and Gynaecologists and fellowship in Advanced Pelvic Surgery by RCPI/Institute of Obstetricians and Gynaecologists.

A lymphoedema service was established with support from GynaeCancerCare at the St James's Hospital Foundation, and the Emer Casey Foundation.

Research projects completed by the Gynaecological Oncology Division included a Study of Cachexia (Dr Niamh O'Donoghue); Lymphoedema (Dr Aoife Freyne); Aspects of Venous Thromboembolism (Dr Zibi Marchocki); Comparative trial of less radical surgery in cervix cancer (Professor Noreen Gleeson).

In May, the outreach educational programme included a gynaecological cancer care special event to mark World Ovarian Cancer Day in partnership with the St James's Hospital Foundation and the Emer Casey Foundation. Topics included screening, prevention, treatment, complications and research in gynaecological cancer.

Key Priorities for 2020

- Consolidate lymphoedema service with support from NCCP and the HSE through the provision of a dedicated lymphoedema specialist for gynaecology cancer patients
- Provision of remote review clinics for follow up of lower risk cancers
- Improve assessment / support for quality of life in follow up of gynaecological cancers
- Maintenance of fellowship training programmes in gynaecological oncology
- Maintenance of fellowship training programmes in advanced pelvic surgery
- Maintenance of robust research programme

"Words can't describe how much your kindness compassion and care means to us as patients".

patient feedback

4 Head and Neck Service

4 Head and Neck Service

Overview of Service

Head and neck cancers are a diverse group of cancers that in the main are made up of mucosal malignancies of the upper aero-digestive tract, including the oral cavity, larynx and pharynx. They also include salivary gland malignancies, thyroid malignancies, and many cutaneous malignancies of the head and neck which are treated by our service.

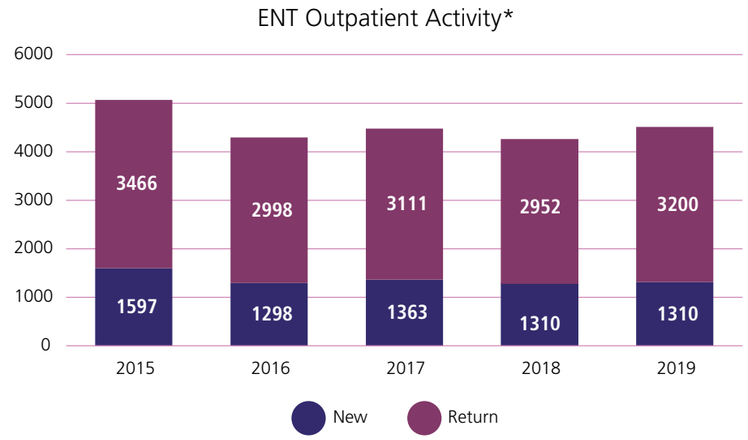
In St James's Hospital, patients are managed by both the Department of Otolaryngology, Head and Neck Surgery, (Professor Conrad Timon, Mr John Kinsella and Mr Paul Lennon) and the Department of Maxillofacial Surgery (Mr Conor Barry and Professor Leo Stassen).

Radiotherapy (Dr Sinead Brennan and Dr Fran Duane) is a mainstay of treatment for our patients, often along with chemotherapy provided by Dr Cliona Grant. The MDT also comprises specialist Endocrinology (Professor Marie Louise Healy), Pathology (Professor Mary Toner and Dr Esther O 'Regan) and input from Radiology. St James's Hospital acts as the hub, with patients often diagnosed and/or treated in spokes such as the Royal Victoria Eye and Ear Hospital (RVEEH), Dublin Dental Hospital, Tallaght University Hospital, Midlands Regional Hospital Tullamore and St. Luke's Hospital in Rathgar (see Table 1 and Figure 4). All complex major cancer surgery is carried out at St James's Hospital. Our patients often require extensive rehabilitation, provided by specialist speech and language therapists and dietitians, and dedicated nursing staff on St John's and Anne Young wards.

Ear, nose and throat (ENT) activity and Maxillo Facial Activity

Figures 1 and 2 describe outpatient activity in 2019 compared with previous years for ENT and Maxillofacial services.

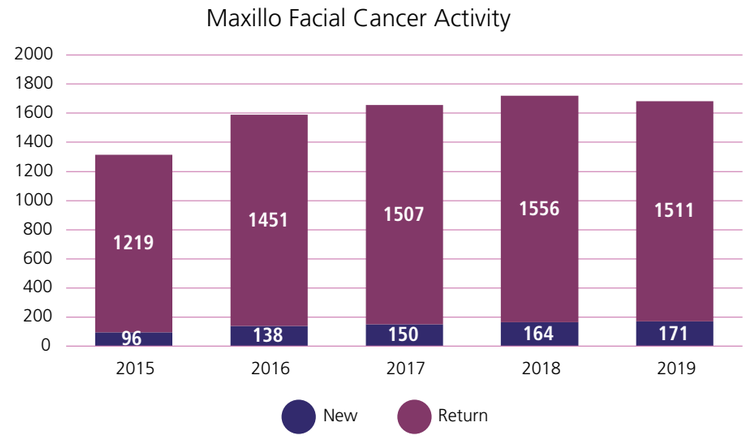
Figure 1 ENT Activity



*Activity includes general and oncology

Figure 2 Maxillo Facial Activity

The below activity will include non-cancer attendances



Clinical Details and Analysis

The data below is a summary in tables and graphs of the patients who were discussed at MDT and managed by the Head and Neck Multidisciplinary team in 2019.

The head and neck cancer data manager provides detailed tracking and analysis of head and neck cancer diagnoses, staging and treatment pathways to enable KPI reporting, clinical audit and survival analysis. Tables 1 and 2 and Figures 3 and 4 describe some of the clinical data reported from the Cancer Audit Programme registry.

Figure 3: New Patients 2019 by Clinical Stage

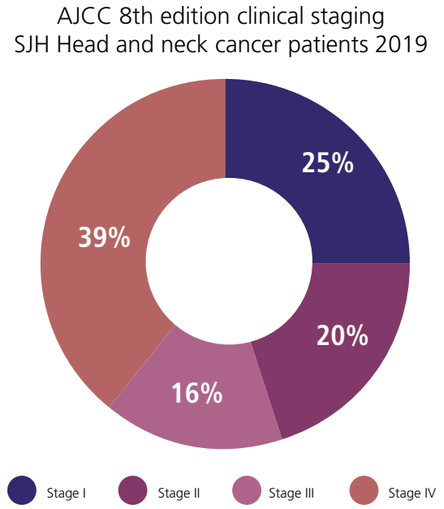


Table 1: New Head and Neck Cancer Patients

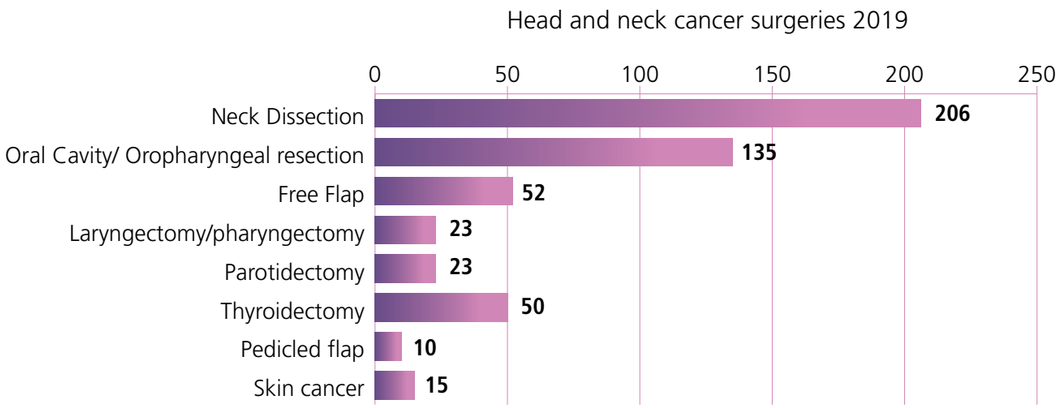
Total New Patients discussed and diagnosed at MDT	461

Table 2: Treatment Planned New Patients

Surgery	261
Laser Surgery	15
Primary Chemo/Radiotherapy	70
Primary Radiotherapy	47
Induction Chemotherapy	9
Palliative Radiotherapy	12
Palliative Chemotherapy	5
Observe/Follow up only	4

Figure 4 refers to surgeries performed by members of the Head and Neck MDT team in 2019. Surgery was performed for primary or recurrence head and neck cancer. Each patient had one or more of these operations.

Figure 4: Operation Type and Activity



Key Achievements in 2019

- Head and Neck Rapid access clinic in RVEEH - the first such clinic in Ireland is now up and running on a two-weekly basis
- A new head and neck cancer referral form for GPs is now available in St James's Hospital to improve patient flow
- Dr Sinead Brennan was the co-author of a major clinical trial in the Lancet- DeEscalate HPV study
- A further 14 peer reviewed papers were published by the Head and Neck Team
- A number of Clinical Trials are on-going in conjunction with Clinical Trials Ireland

Key Priorities for 2020

- A dedicated head and neck ward, with specialist nurses and a High Dependency Unit (HDU). This would concentrate similar patients in the same ward leading to greater nursing expertise, earlier recognition of complications and overall a safer environment for our patients. This configuration will benefit patients with complex care needs, such as tracheostomies and free flaps. A specialised ward would allow more complex cases to return to the ward when appropriate, instead of the current system where an ICU bed is often needed, even for, for example, primary laryngectomies. This would take considerable pressure off the already overburdened Intensive Care Unit (ICU). A specialised ward would attract highly trained and motivated nurses. It would also lead to efficiencies as similar patients would be on the same ward. This would be beneficial for speech and language therapists, nutritionist, tracheostomy nurse specialist and clinical nurse specialists and ultimately improve patient safety.
- Increase data management resource from 0.5 WTE to minimum 1.0 WTE to ensure robust data capture for the growing number of complex head and neck patients managed by the MDT. This resource will support data collection to enable clinical audit, activity and service evaluation which is currently insufficient for the number and complexity of patients.
- Increase number of head and neck clinical nurse specialists. Currently we have 1.1 WTE CNSs
- An additional Tracheostomy CNS position is required. (Current WTE x 1 in position since 2005)
- Develop ANP roles within the multi-disciplinary team(MDT) in particular to support patient and the team in survivorship clinics
- Develop dedicated research team to improve academic output and assist in clinical trial co-ordination in keeping with our goal of becoming an accredited comprehensive cancer institute.
- Improve Speech and Language Therapy(SLT)/dietician numbers to meet the demands of the service and complexity of care required for our patients
- Access to a robot for Tran Oral Robotic Surgery (TORS) to support care pathway for our patients

5 Haematology

5 Haematology

Overview of Service

The Haematology Department at St James's Hospital is the largest in Ireland and includes the National Adult Stem Cell Transplant Centre. There are six consultant haematologists who provide care for patients with general and malignant haematological disorders, including leukaemia, lymphoma and myeloma.

Each of the haematology consultants has had training in all areas of stem cell transplantation but also have areas of special interest as follows:

- Dr L. Bacon: Acute lymphoblastic leukaemia, lymphoma, Adolescent/Young Adult (AYA) haematology
- Professor. P. Browne: myeloma, acute leukaemia
- Dr E. Conneally: acute leukaemia, myeloproliferative neoplasms
- Dr C. Flynn: Acute Leukaemia, Bone Marrow Failure Syndromes
- Dr P. Hayden: Myeloma, Cryobiology/Apheresis
- Professor E. Vandenberghe: Lymphomas, Lymphoproliferative Disorders, molecular diagnostics

There are three components to the Clinical Haematology-Oncology Service:

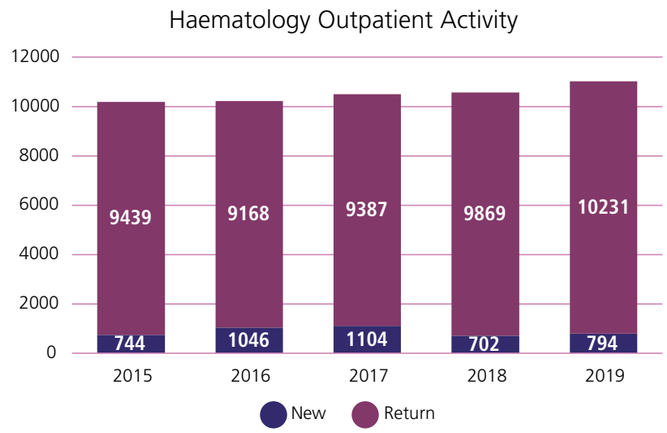
- The Acute Leukaemia/Stem Cell Transplant Service is based in the Denis Burkitt Stem Cell transplantation unit
- Patients requiring less intensive therapy are admitted to a dedicated haematology-oncology ward: the Donal Hollywood Ward
- Patients with blood cancer are increasingly managed in the haematology day-care setting and treatment is delivered by a day centre team which includes a haematology specialist registrar and haematology trained nurses on the Haematology Oncology Day Centre (HODC) ward.

The activity in 2019 will be shown in the report to follow for each specialist area to include general and malignant haematological disorders, leukaemias, lymphoma and myeloma.

Key Activity 2019

Figure 1 and Table 1 describe the increase in the haematology outpatient activity within the Haematology Oncology Day Centre (HODC)

Figure 1 Haematology Outpatient Activity



- Number of individual patients = 2,781

Figure 2 Individual Patients Reviewed

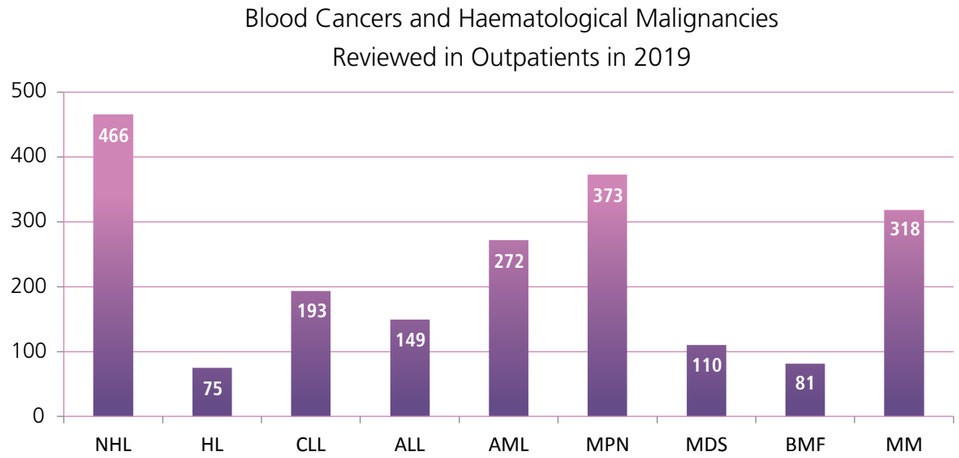


Figure 2 shows a breakdown of individual patients that attended outpatients by cancer/malignancy type. Many patients will have more than a single visit to outpatients. There were a total of 11,025 outpatient attendances in 2019.

The day unit is staffed by clinical nurse managers who ensure delivery of chemotherapy, blood products and assessment of patients undergoing treatment in a dedicated facility with access to isolation features.

Table 1 Inpatient and daycase activity 1

Daycase and Inpatient attendances 2015-2019					
	2015	**2016**	**2017**	**2018**	**2019**
Daycase Discharges	5191	5826	6122	5167	6141
Inpatients Stays	943	936	952	905	895

See description of The Haematology/Oncology Day Centre within the Medical/Oncology section on page 100 of this report.

Figure 3 Daycase and inpatient

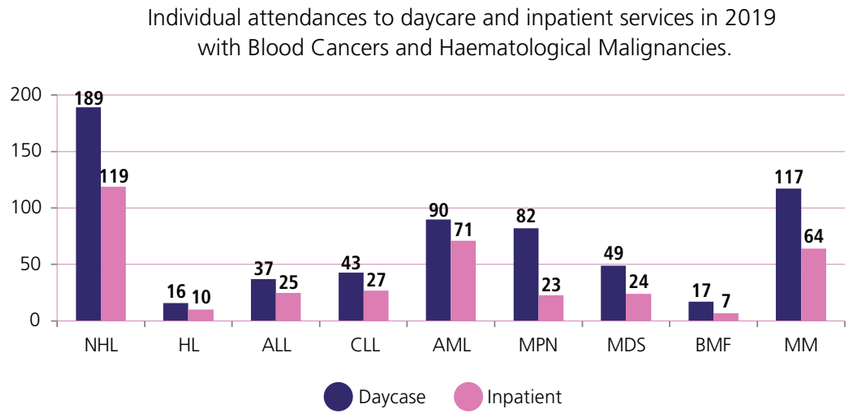


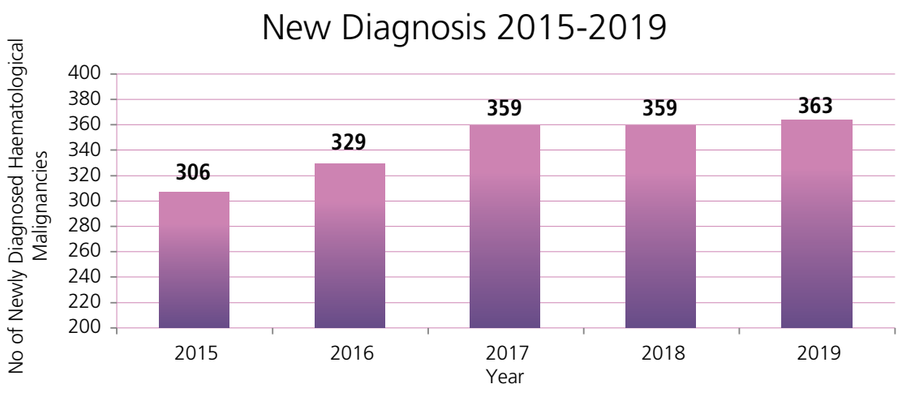
Figure 3 shows a breakdown of subsets of individual patients with blood cancers and haematological malignancies. There were **6,141** daycase discharges in 2019 accounting for **900** individual patients. There were **895** inpatient stays in 2019 accounting for **463** individual patients.

Multidisciplinary working is integral to haematology and includes several weekly MDT meetings. These include a bone marrow transplant planning meeting, a haematology MDT and a Lymphoma MDT.

Blood Cancers

There were 363 individual patients with newly diagnosed haematological malignancies attending St James's' hospital in 2019, either as inpatients or managed through the day care centre.

Figure 4 Newly diagnosed patients



Key Achievements 2019

Chimeric Antigen Receptor-Therapy (CAR-T)

- TSJCI was designated as the National adult CAR-T centre and the clinical service delivery will be introduced in a phased way.
  CAR-T is a novel immunotherapy therapy for the treatment of patients up to 25 years of age with B-cell precursor acute lymphoblastic leukaemia. It is also approved for adult patients with relapsed or refractory large B-cell lymphoma after two or more lines of systemic therapy.
  There is also a CAR-T therapy for adults living with certain types of non-Hodgkin lymphoma.
  Two patients were referred to hospitals in the UK for CAR-T in 2019. This exciting new treatment however is expected to be available to patients in St James's Hospital in 2020.
  Education and training related to CAR-T has been provided to staff throughout the year in preparation for its introduction. Two new staff members have been appointed, a stem cell transplant coordinator and an administrator. They are expected to take up their posts in 2020.
- The second All Ireland Bone Marrow Transplant Conference including the first patient and family day held in John Durkan Lecture Theatre, Trinity Centre for Health Sciences, St James's Hospital over two days in September 2020
- Set- up of an allogeneic transplant patient support group

Key Priorities for 2020

- To develop the National CAR-T Centre, progress requirements to develop a phased service
- To address the issues raised during the JACIE inspection, including increased medical and specialist nursing manpower for the allogeneic transplant service.
- The expansion of JACIE accreditation to include the autologous stem cell transplant service and shared care facilities
- Introduction of a formal MDT for the myeloid service to include all new myeloid diagnoses and marrow failure syndromes to assist in the streamlining of treatment planning and to improve the triage and prioritisation of national transplant referrals
- Launch of myeloid next generation sequencing service to assist in assessment and counseling of patients with myeloid disorders for transplantation.
- To formalise and provide greater structure for patients with bone marrow failure disorders to include a more comprehensive diagnostic work up, improved fertility preservation options and improve the nursing support for these patients.
- To improve the models of care for management of the expanding population of adult allogeneic transplant survivors. This will involve closer and more structured liaison with referring national haematological and oncological services.
- Development of a service (AYA) directed towards young adults with haematological malignancies including marrow failure syndromes to improve communications and data collection between St James's Hospital and referring centres through fully implementing standardised online patient referral forms for stem cell transplantation (SCT) and patient follow-up forms post SCT
- To establish a patient forum group for the development of patient-centred improvements in service delivery

"Thank you, you are amazing and I am grateful you are in my life and I am under your care, words can't describe how much your kindness compassion and care means to us as patients"

patient feedback

5.1 Blood Cancers Leukaemias and Myeloproliferative Neoplasms

Overview of Service

The myeloid malignancy service encompasses the care of patients diagnosed with acute myeloid leukaemia, myelodysplastic syndromes (low and high risk) and myeloproliferative neoplasms. The national incidence of these diseases is not comprehensive and our group is working with the Blood Cancer Network Ireland and the Irish cancer society to collect improved national data. The myeloid service also looks after a group of patients with less common inherited and acquired bone marrow failure syndromes.

Myeloid malignancies are cancers of the bone marrow and arise de-novo or as a result of transformation of an existing myelodysplastic syndrome or myeloproliferative neoplasm. They can also arise in patients who have received immunotherapy, chemotherapy or radiation treatment for a previous solid organ neoplasm or immunodeficiency.

These patients are diagnosed following detection of a cytopenia in general practice or following presentation to St James's Hospital via another speciality including accident and emergency with a cytopenia or related condition. The clinical and laboratory haematology service are linked. Cytopenias are detected in the laboratory and further investigations are arranged with referring clinicians. Where high suspicion of a haematological malignancy is considered, these patients are seen promptly in a haematology clinic. In addition, referrals are frequent from national haematology centres on patients who may request a second opinion or consultation regarding the benefits of an allogeneic stem cell transplant. Transplant referrals are also received from the Northern Ireland health service for unrelated allogeneic transplants in myeloid disorders.

All new diagnoses of myeloid malignancies are reviewed weekly at our haematopathology meeting and plans are underway to establish a formal myeloid MDT.

The myeloid malignancy service can be divided into inpatient and outpatient services.

Inpatients include patients having intensive chemotherapy for acute myeloid leukaemia and high-risk myelodysplastic syndrome diagnosed in St James's Hospital or referred from Tullamore, Limerick or Waterford. In addition, we look after patients who have infective complications following outpatient treatment

Outpatient treatments are more common for older patients or those patients ineligible for an allogeneic transplant. These patients may require venesection or receive a variety of sub-cutaneous and intravenous treatments in the day ward facility including Azacytidine and transfusions of blood and platelets. Self-administered treatments and oral chemotherapy are supervised during regular outpatient visits. Common self-administered treatments include growth factor support, interferon and oral chemotherapy including Hydroxycarbimide, tyrosine kinase inhibitors, Ruxolitinib, Anegrelide and Busulphan.

Key Activity 2019

Figure 5 HaemPath MDT

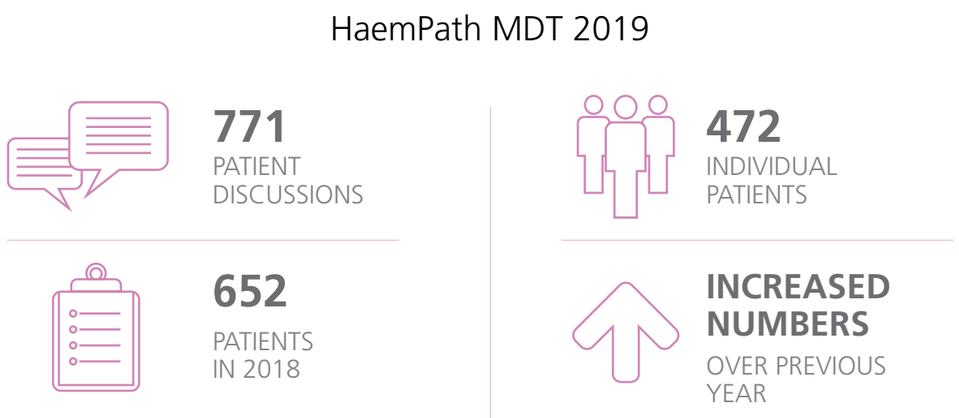
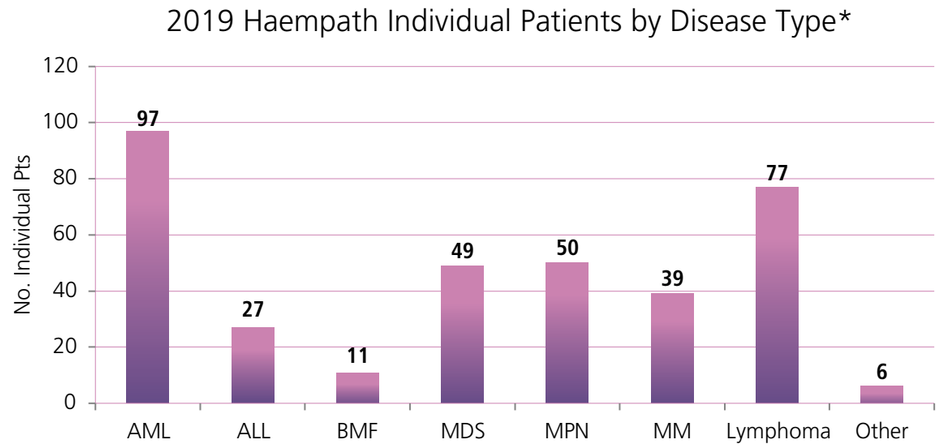
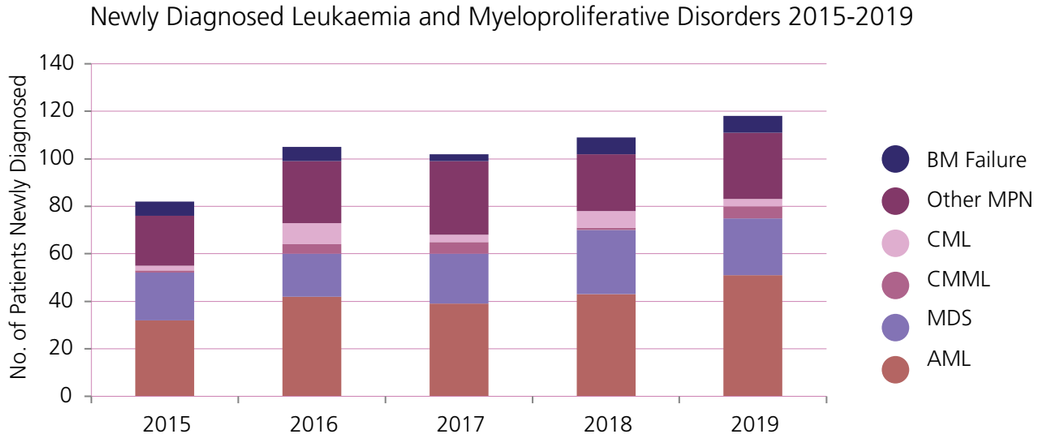


Figure 6 HaemPath by disease type



*Snapshot of numbers of individual patients with blood cancers and haematological malignancies discussed at HaemPath MDT in 2019. Many patients are discussed on more than one occasion.

Figure 7 Newly diagnosed leukaemia and Myeloproliferative disorders



5.2 Blood Cancers Lymphomas and Lymphoproliferative Disorders

Overview of Service

Lymphomas are cancers of the immune system, and approximately 900 new cases are diagnosed in Ireland every year. The diagnosis of lymphomas is complex because more than 50 sub-types of lymphoid malignancies have been identified, each requiring a specific treatment approach based on multi-disciplinary specialist diagnostics including, haematopathology flow cytometry, molecular diagnostics and radiology. Treatment pathways are complex and include surveillance without treatment, chemotherapy, antibody treatment, radiation and stem cell transplantation.

To help to ensure that each patient receives appropriate treatment, all patients with lymphomas are reviewed at a weekly MDT meeting. Over 300 patients are discussed at the MDT meetings annually, including patients from the Midlands Regional Hospital Tullamore, University Hospital Waterford, and University Hospital Limerick.

The accurate and timely treatment of lymphomas is important. They constitute the most common cancer in young people and are often associated with a high cure rate if an accurate and timely diagnosis is made and appropriate treatment is initiated. Many people with low-grade lymphomas survive with intermittent treatment and a relatively normal lifestyle and lifespan; it is estimated that 20% of patients with low grade lymphoid malignancies will eventually die of their disease. This suggests that many thousands of patients are under the care of lymphoma specialists in Ireland, making it one of the most common cancers managed in cancer centres.

Key Activity 2019

Figure 8 Lymphoma MDT

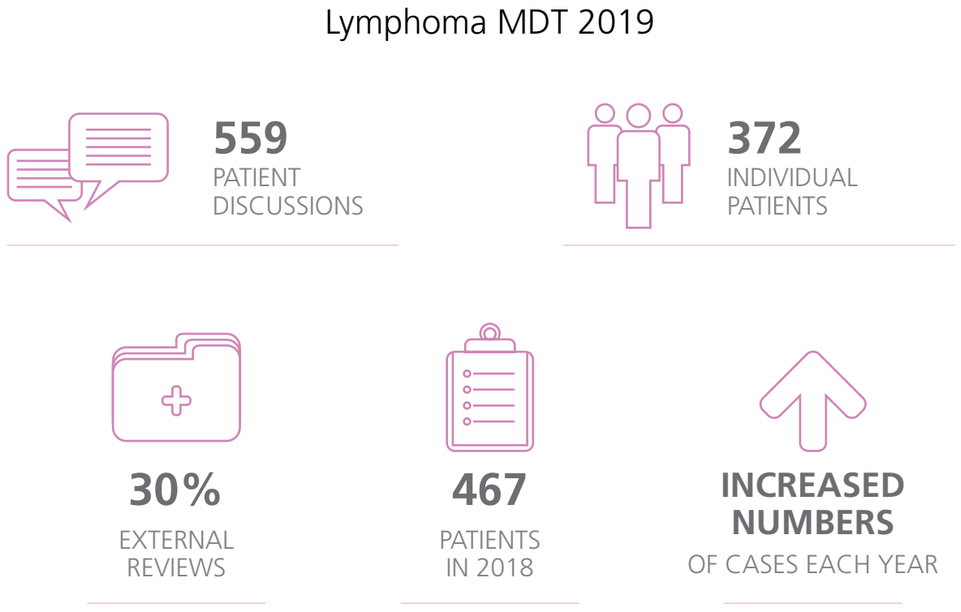
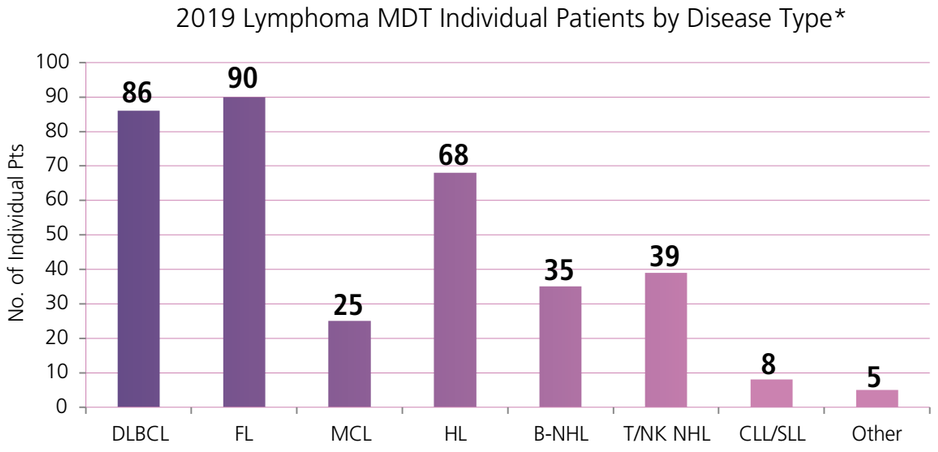
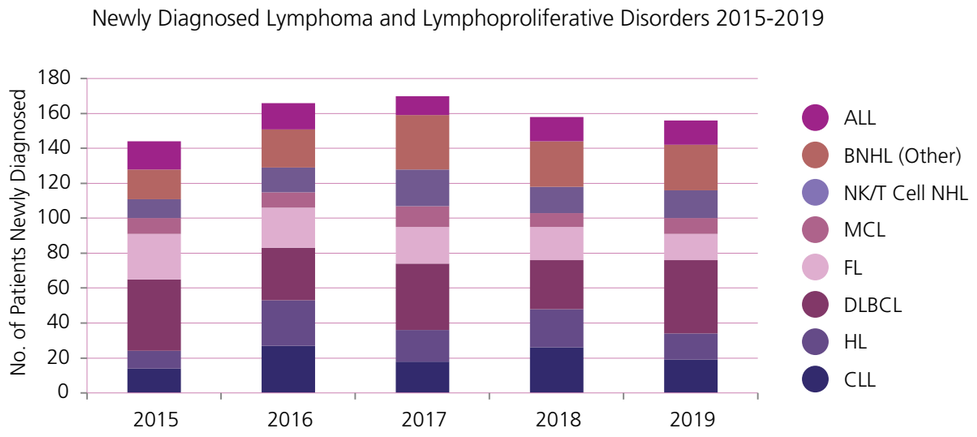


Figure 9 Lymphoma MDT cases individual patients by disease type



* Snapshot of numbers of individual patients with Lymphoma. Many patients are discussed on more than one occasion at MDT meetings.

Figure 10 Newly Diagnosed Lymphoma and Lymphoproliferative Disorders



5.3 Blood Cancers: Myeloma and Plasma Cell Disorders

Overview of Service

Myeloma is a malignancy of plasma cells. These are the cells of the immune system that normally produce antibodies to protect us against infection. Patients with myeloma commonly present to their general practitioners with bone pain and fatigue. Laboratory tests to investigate these symptoms may reveal anaemia and damage to the kidneys. X-rays often show fractures.

Myeloma is commonly diagnosed in older people. The average age at diagnosis is approximately 70 years. The incidence of myeloma in Ireland is approximately 5 per 100,000 each year. There are, therefore, about 240 patients diagnosed with myeloma annually in Ireland.

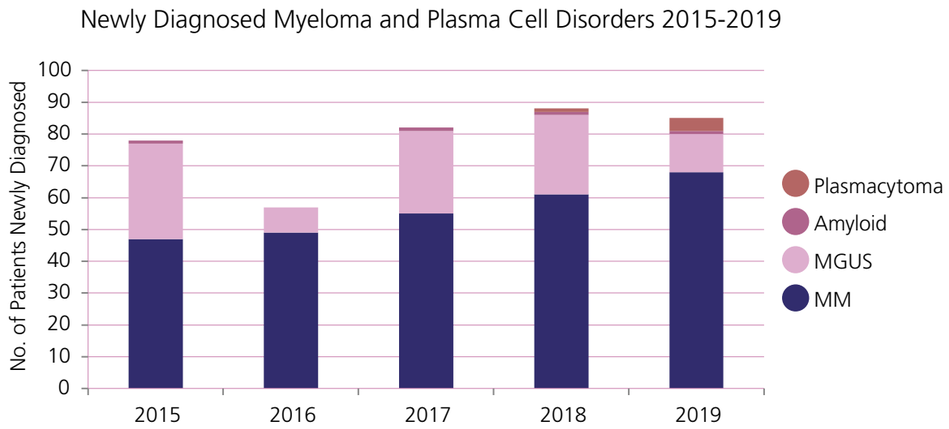
The treatment of myeloma has greatly improved over the last 15 years, and it is considered one of the success stories of modern cancer treatment. New types of drugs have been developed, including proteasome inhibitors such as Bortezomib (Velcade) and immune-modulatory drugs such as Lenalidomide (Revlimid). These are now in widespread use in Ireland, allowing patients to live much longer with the disease. Many patients diagnosed this year can expect to live for a decade, if not longer.

The Haematology Service at St James's Hospital is the largest in Ireland and includes the National Adult Stem Cell Transplant Centre. There is a dedicated myeloma service, which looks after patients with a range of plasma cell disorders, including symptomatic myeloma, solitary plasmacytomas, light chain amyloidosis and monoclonal gammopathy of uncertain significance. There are currently over 130 patients with myeloma and/or amyloidosis attending our clinic.

There is a Myeloma Clinic each week and another for Myeloma Transplantation Counselling.

Key Activity 2019

Figure 11 Breakdown of Myeloma diagnosis



5.4 Stem Cell Transplant Unit

Overview of Service

The Stem Cell Transplantation (SCT) Service in St James's Hospital was founded in 1984 and has since performed more than 2,500 stem cell and bone marrow transplants. The service oversees transplants in about 160 patients each year. The SCT Unit includes the National Adult Allogeneic Transplant Programme, (allogeneic transplant means using stem cells from a family member or an unrelated matching donor), and an Autologous Stem Cell Transplant Program, (autologous transplant means using your own stem cells). The service is currently the third largest SCT unit in Ireland and the United Kingdom. It is affiliated to the European Blood and Marrow Transplantation (EBMT) Registry, and it reports all outcomes to the registry and takes part in EBMT research projects.

In 2018 the BMT unit applied for accreditation under JACIE, the Joint Accreditation Committee of the International Society for Cellular Therapy (ISCT) and the European Group for Blood and Marrow Transplantation (EBMT). (JACIE) and an onsite inspection took place in November 2018*.

Key Activity 2019

The SCT Service is led by six transplant-trained haematology consultants who each have specific sub-specialist interests and sit on the relevant working parties of the EBMT. The service is delivered by a MDT. This consists of a group of doctors, clinical nurse specialists and other health professionals, including pharmacists and laboratory scientists, who specialise in stem cell transplantation. They discuss and manage the patient's care. The SCT Service is supported by the Apheresis Unit, where stem cells are collected, and a Stem Cell Laboratory that has facilities for cryopreservation, or cell storage. (A liquid nitrogen facility is used for the long-term storage of patients' stem cells).

Stem cell transplantation is carried out in a specialist 21-bed HEPA-filtered unit on Denis Burkitt Ward. The unit is managed by a clinical nurse manager, with a staff of SCT-trained nurses. Specialist support is provided by a team that includes dieticians, physiotherapists, a medical social worker and other medical/surgical teams, as required. Post-transplant care is delivered through the Haematology Oncology Day Care (HODC) Unit, supervised by a clinical nurse manager and specialist haematology nurses.

*Footnote: JACIE accreditation awarded February 2020

Figure 12 Transplant survivorship

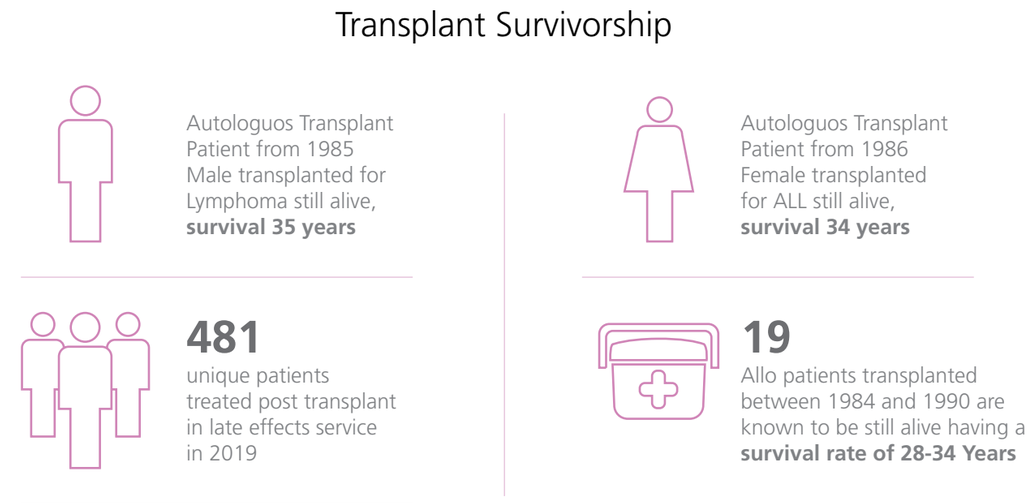
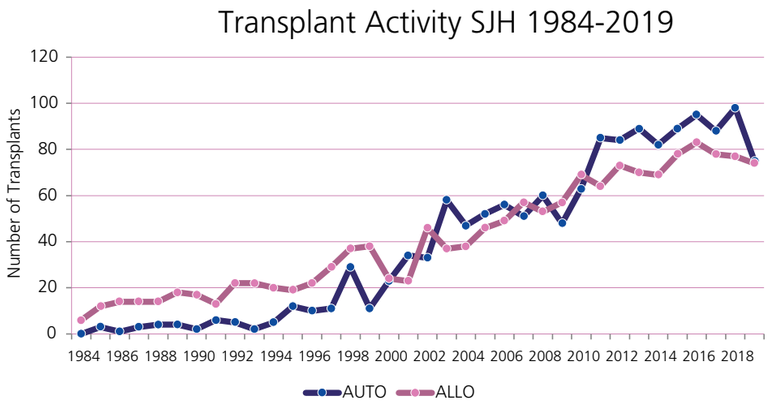


Figure 13 Transplant Activity Trends

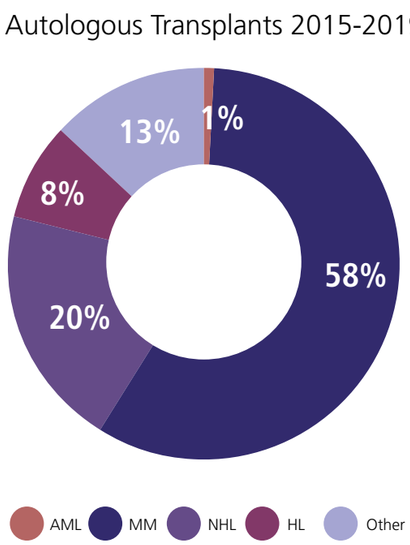


Transplant activity is increasing overall over time. Since 2003, activity transplant activity had increased by approx. **75% by** 2019.

Autologous Transplants 2015-2019

There were 445 autologous transplants performed in the BMT unit between 2015 and 2019. Of these, transplantation for Multiple Myeloma (MM) accounted for 58%. Other main transplant groups were Non-Hodgkin Lymphoma (NHL), Hodgkin Lymphoma (HL) and Germ Cell tumours.

Figure 14 Autologous Transplants

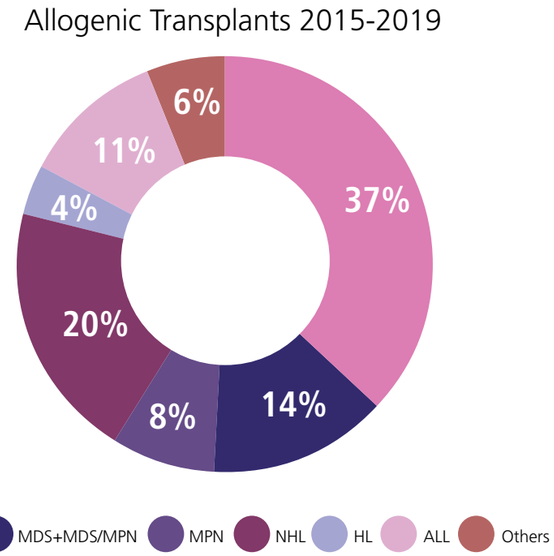


Population = **445**

Allogeneic Transplants 2015-2019

There were 390 allogeneic transplants performed between 2015 and 2019. There were 161 myeloablative and 229 reduced intensity transplants completed.

Figure 15 Allogenic transplants



Population = **390**

Figure 16 Referral Centres by Transplant Type in the last 5 years

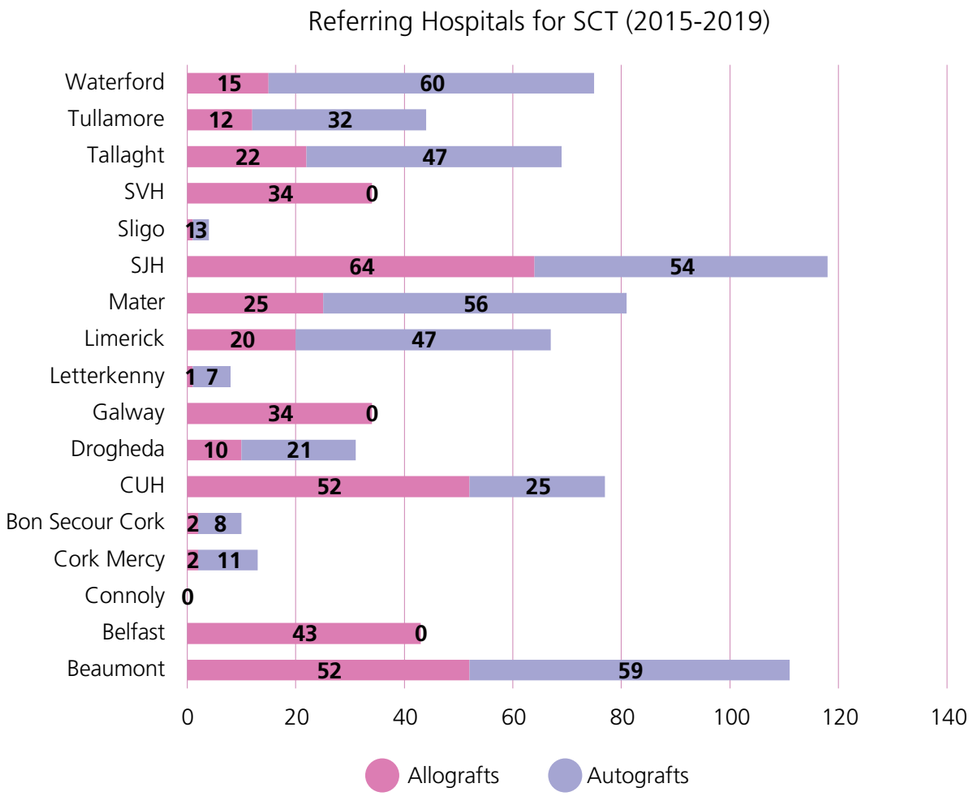
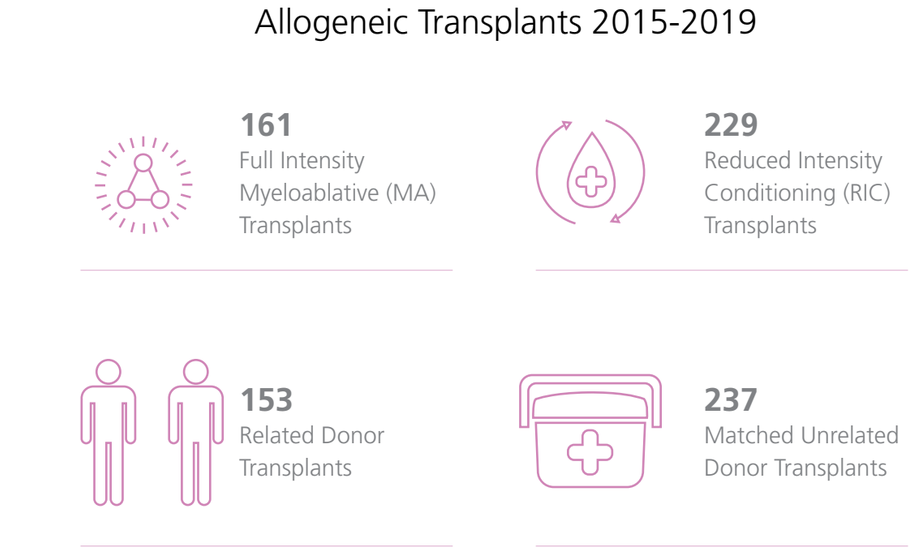


Figure 17 Allogenic transplants



Acronyms

B-NHL	B-cell non-Hodgkin lymphoma
CLL	Chronic lymphocytic leukaemia
CML	Chronic myelogenous leukaemia
CMML	Chronic myelomonocytic leukaemia
DLBCL	Diffuse large B-cell lymphoma
FL	Follicular lymphoma
HL	Hodgkin lymphoma
MCL	Mantle cell lymphoma
MDS	Myelodysplastic syndrome
MGUS	Monoclonal gammopathy of undetermined significance
MM	Multiple myeloma
MPN	Myeloproliferative neoplasms
SLL	Small lymphocytic lymphoma
T/NK	NHL T-cell/Natural killer cell non-Hodgkin lymphoma

6 Lung Cancer Service

Overview of Service

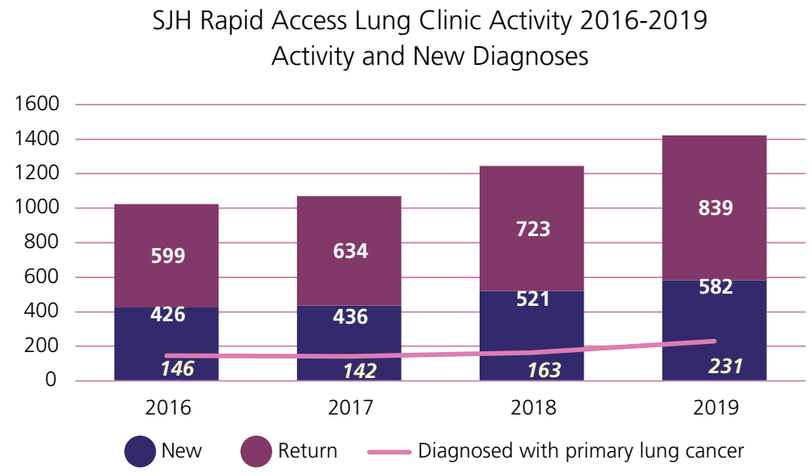
St James's Hospital is the largest comprehensive centre for the diagnosis and treatment of lung cancer in Ireland, both in terms of the number of patients and the complexity of disease treated. The lung cancer service aims to provide best care for all lung cancer patients based on safety, clinical excellence and the patient experience.

Rapid Access Lung Clinic

St James's Hospital is one of eight nationwide Rapid Access Lung Centres (RALC), providing diagnostics and staging for patients with lung cancer and suspected lung cancer. The respiratory physicians oversee the diagnostic pathway, in liaison with radiology and pathology colleagues. The full suite of diagnostic procedures is available, including bronchoscopy, fluoroscopy-guided trans-bronchial biopsy, endobronchial ultrasound (EBUS), pleural procedures, and radiology-guided biopsies. The full range of imaging modalities is also available, including CT, MR and PET scanning. There is subspecialised reporting of pulmonary surgical pathology and cytology plus review of patients' pathology from other rapid access clinics and centres.

There were 1421 RALC attendances in 2019, 582 of which were new referrals and 839 were return visits. A total of 231 primary lung cancers were diagnosed at the rapid access lung clinic in 2019. The pattern of activity in the St James's Hospital RALC over the past four years is summarised in Figure 1.

Figure 1: St James's Hospital Rapid Access Lung Clinic Activity 2016-2019



Multidisciplinary Team (MDT)

The St James's Hospital Lung MDT is long established, and includes a tele-link with referring hospitals in Letterkenny, Limerick, Mullingar, Tullamore and Waterford. The weekly MDT meeting is attended by respiratory physicians, radiologists, cytohistopathologists, cardiothoracic surgeons, medical oncologists, radiation oncologists, palliative care, oncology nurse coordinators, clinical nurse specialists, data manager and MDT coordinator. In 2019, a total of 1,774 patients were discussed at 45 weekly MDT meetings.

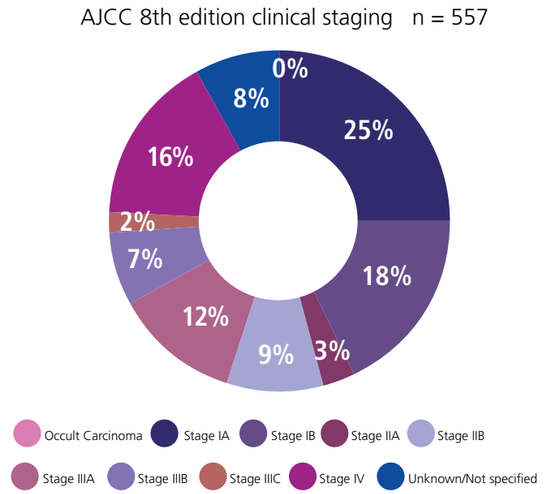
Surgery

St James's Hospital is a national referral centre for lung resections, performing approximately 50% of the country's lung resections. Thoracic surgeons in St James's Hospital accept referrals from the three Irish Rapid Access centres which do not have thoracic surgery locally on site; Beaumont, Waterford and Limerick. St James's Hospital surgeons attend the MDT meeting at Beaumont Hospital, and a satellite MDT meeting at Tallaght University Hospital. Waterford and Limerick Hospitals link directly with the St James's Hospital MDT by telelink. Other satellite hospitals also link with the St James's Hospital MDT, including Mullingar, Tullamore and Letterkenny. The number of lung resections performed in St James's Hospital has increased significantly since the service was established. In 2019, 283 lung resections were carried out. There are two nurse-led services within the Thoracic Surgery service, a Pre-Admission Clinic and a Surveillance and Survivorship Clinic.

Pre-Admission Clinic

Prior to their surgery patients are seen in the Cardiothoracic Pre-Admission Clinic, run by the ANP. In 2019, 129 patients were seen in this clinic. A number of suitable patients are seen by the physiotherapists for a pre-habilitation programme prior to surgery which aims to increase a patient's aerobic capacity.

Figure 2: Non-small cell lung cancer staging



Surveillance and Survivorship Clinic

Following their lung resection, patients are initially seen by the medical team in the Outpatient Department. Following this, the patients are referred to the ANP-led lung cancer surveillance and survivorship clinic which was established in June 2018. This service has its own suite of KPIs that are recorded and reported by the lung cancer data manager. In 2019, the Surveillance and Survivorship Clinic reviewed 539 patients, 238 of whom were new to the Surveillance and Survivorship Clinic and 301 were return patients.

Radiation and Medical Oncology

The Radiation Oncology Department provides a referral and review service for St James's Hospital patients who may require radiotherapy treatment. In 2019, 149 patients were referred to the Radiation Oncology Department by the lung cancer MDT. St James's Hospital has a dedicated medical oncologist for lung cancer, together with in-patient and outpatient chemotherapy, non-surgical treatment of cancer and supportive and palliative care. In 2019, the lung cancer MDT referred 200 patients to the Medical Oncology Department.

Key Activity 2019

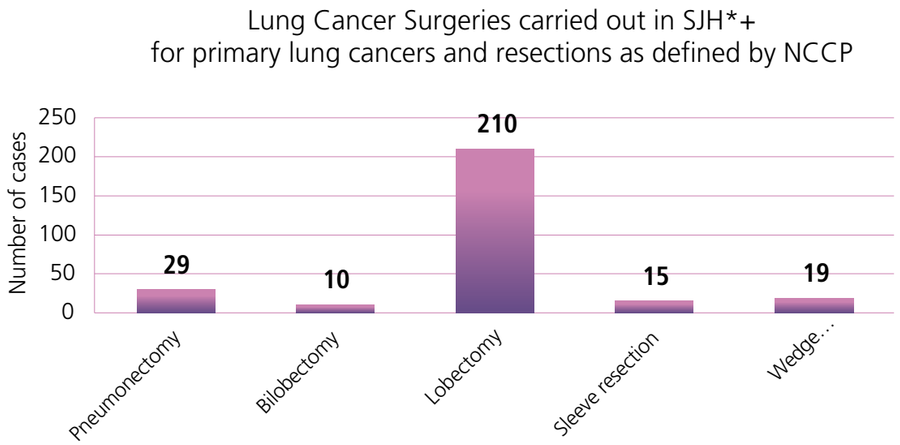
The lung cancer data manager works with the MDT to provide detailed tracking and analysis of head and neck cancer diagnoses, staging and treatment pathways to enable KPI reporting, clinical audit and survival analysis. Figures 1, 2, 3 and Table 1 describe some of the clinical data reported from the Cancer Audit Programme registry. In 2019, a total of 651 patients, representing 662 tumour sites, were diagnosed and/or treated at St James's Hospital. A summary of the clinical stage of 557 patients diagnosed with non-small cell lung cancer is provided in Figure 2. 43% of patients were Stage 1 at diagnosis and 16% were Stage 4. Of the 94 patients who did not have non-small cell lung cancer, 15 patients were diagnosed with mesothelioma, 67 with small cell lung cancer and 12 did not have a tissue diagnosis prior to commencing treatment.

Table 1 First planned treatment

Surgical Assessment	351
Surgical Procedure	8
Medical Oncology Referral	109
Neo Adjuvant Chemotherapy	4
Chemotherapy	18
Palliative Chemotherapy	13
Radiation Oncology Referral	43
Neo Adjuvant Radiotherapy	2
Radiotherapy	31
Palliative Radiotherapy	16
Chemotherapy/ Radiotherapy	56
Radio Frequency Ablation (RFA)	1
Best Supportive Care/Palliative Care	28
Follow up with referring hospital	41
Surveillance	1
MDT Discussion only	1
Patient RIP before MDT discussion	6

Surgical assessment is the most common first planned treatment.

Figure 3: Lung Cancer Surgeries



*276 patients had 283 procedures
+ includes patients diagnosed in 2018 and 2019

- A total of 276 patients underwent 283 lung resections during 2019, compared to 251 patients who had 274 lung resections in 2018.

Key Achievements in 2019

The St James's Hospital lung cancer service was selected by the NCCP as the pilot site for the drafting and testing of a new Quality and Safety Framework for lung cancer services.

Rapid Access Lung (RAL) Clinic attendances continue to increase, and with a high level of compliance with access metrics.

MDT discussion is standard for all patients diagnosed with lung cancer. Tumour, node and metastasis (TNM) stage is recorded for all patients, and pathological diagnosis is available for >98%.

Surgical resections continue to increase steadily. Lung preserving surgery is standard where appropriate, and pneumonectomy rate is low.

In Autumn 2019, the Cardiothoracic Surgery Department developed formal links with the European Society of Thoracic Surgeons (ESTS) in order to facilitate internationally comparable clinical audit through involvement in the ESTS database. This is a European registry of thoracic surgery dominated by thoracic malignancies, primarily lung cancer, for the purpose of internal quality control and performance monitoring.

The Thoracic Oncology Research Group continued to publish in peer-reviewed journals in the areas of biomarker discovery and immunotherapies, drug resistance and novel therapeutics, cancer stem cells, molecular pathology, drug repurposing, liquid biopsy, and biobanking. The group has published in 67 peer reviewed publications between 2015 and 2019.

The cardiothoracic team successfully raised funds (40,000 euros) from the Liberties Fun Run (2019). Equipment was purchased for minimal invasive thoracic surgery (VATS equipment) with the funds raised from the St James's Hospital Foundation Fun Run. In addition to this, a patient exercise bike was purchased from funds raised via the St James's Hospital Foundation's small grants competition. An additional Medela drain was purchased from funds donated by a family. We currently have five Medela drains in circulation. These drains have inbuilt suction which facilitates early ambulation. This promotes our ethos of early mobilisation.

The chest drain study day was successfully held in the Trinity Centre for Health Sciences building, St James's Hospital. Thirty people attended from St James's Hospital. It is a national study day accredited by the Nursing and Midwifery Board of Ireland (NMBI) and the Royal College of Surgeons in Ireland (RCSI).

One of the greatest achievements of 2019 was to facilitate one of our patients to get married in Doolin, Co. Clare. This young patient had end-stage lung cancer. This was a challenging, emotional and highly rewarding experience for the team. This patient got married in Doolin surrounded by her friends and family.

Key Priorities for 2020

- Optimisation of the Lung Cancer Diagnostic pathway, aligned with the objectives of The Medicine and Emergency Department (MED) Directorate and the Trinity St James's Cancer Institute. This should involve better integration with the hospital's electronic patient record (EPR) to enable generation of run charts for pathway metrics around access, flow and outcomes, and monthly data-driven meetings to review variation
- Optimisation of the surveillance pathway for lung nodules. Ideally, this would involve the appointment of a pathway coordinator
- Managing the volume of cases accessing the service form rapid access, to surgery, to oncology and port-operative surveillance
- To improve pre-diagnostic and post-operative surveillance services – facilities and supports
- To improve participation in research studies
- Achieve compliance with new NCCP metrics/standards being introduced for 2020:
  - » 90% of patients diagnosed via RALC shall have final MDM treatment decision within 20 working days of receipt of referral to RALC
  - » Patients with primary lung cancer where surgery is the first treatment shall be offered an appointment for surgery within 25 working days of MDM decision for surgery
  - » 90% of patients diagnosed with primary lung cancer at any rapid access lung clinic in the country and where surgery at St James's Hospital is the first treatment will be offered an appointment for surgery within 45 working days of receipt of referral to their RALC
- Expansion of the ANP-led Pre-Assessment Clinic, which currently assesses three thoracic cases per week, to six cases
- It is envisaged that in 2020 the CTS pre-assessment clinic will be on EPR. The assessment template that is used for the pre-assessment clinic is currently been reviewed for EPR
- Review and adapt the Thoracic Integrated care pathway for EPR
- Facilitate the 2020 Cardiac Advanced Life Support (CALS) study day in St James's Hospital. This is a national study day provided by the cardiothoracic service and is accredited by the NMBI and the RCSI

7 Oesophageal and Gastric Service

7 Oesophageal and Gastric Service

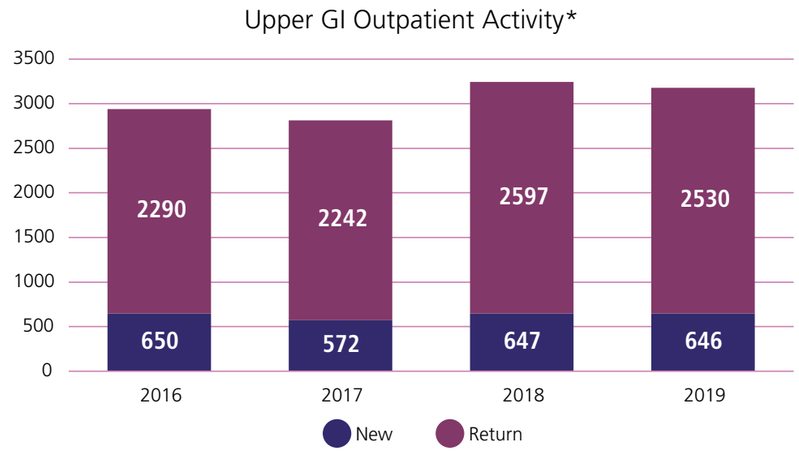
Overview of Service

St James's Hospital is the National Centre for oesophageal and gastric cancer, and also the national centre for early mucosal neoplasia. It has well defined MDT structures and pathways. SJH is the lead site, and Professor Reynolds the Principal Investigator, for international randomised clinical trial, and publishes numerous clinical and scientific papers, approximately 30 per year.

The team includes Professor John Reynolds and Professor Narayamasamy Ravi, Ms Claire Donohoe (surgeons); Professor Dermot O'Toole and Dr Finbar Mc Carthy (specialist gastroenterology); Dr Moya Cunningham (radiation oncology); Professor Maeve Lowery, Dr Sinead Cuffe, and Dr Michael Mc Carthy (medical oncology), Ms Jennifer Moore and Ms Catherine O'Farrell, (CNS) and Ms Sinead King, (data manager).

Key Activity

Figure 1 Outpatients Department Activity



*activity includes general and oncology

Clinical Detail and Analysis

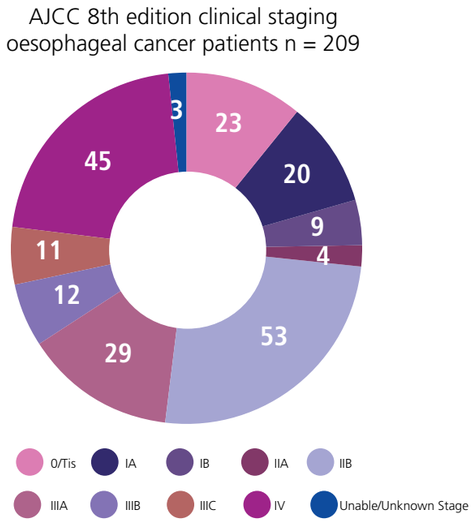
The upper GI (UGI) cancer data manager works with the MDT to provide detailed tracking and analysis of UGI cancer diagnoses, staging and treatment pathways to enable KPI reporting, clinical audit and survival analysis. Figures 2-5 and Tables 1 and 2 describe some of the clinical data reported from the Cancer Audit Programme registry.

"Míle Buíochas, Thank you all so much for your kindness beyond compare".

patient feedback

7.1 Oesophageal Cancer

Figure 2 Oesophageal Cancer Staging



- 52% of patients were stages 0-2.
- HGD/Tis = high grade dysplasia/in-situ cancer

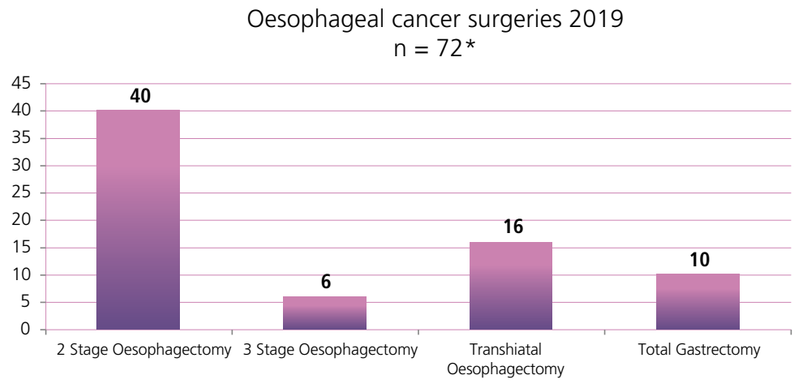
Table 1 First planned treatment Oesophageal

Radical	
Endotherapy	39
Surgery first	12
Neo-adjuvant therapy	57
-Neo-ad/Perioperative Chemo	28
-Neo-ad ChemoRadiation	29
Radical ChemoRadiation	16
Unimodal chemo	2
Unknown	1

Palliative	
Endotherapy	1
Surgery	1
Chemotherapy	24
Radiotherapy	21
Stent/Peg/Dilo	15
Palliative Care	9
Treated elsewhere	8

- 61% of patients were treated with curative intent.

Figure 3 Oesophageal cancer surgeries

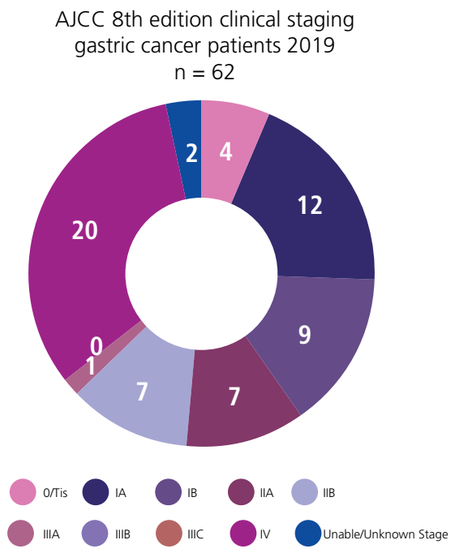


* includes patients diagnosed in 2018 & 2019

- En bloc radical 2 stage oesophagectomy was the most common type of surgery, involving laparotomy and thoracotomy

7.2 Gastric Cancer

Figure 4 Gastric cancer staging



- Nearly 60% of patients were stages 0-2.
- HGD/Tis = high grade dysplasia/in-situ cancer

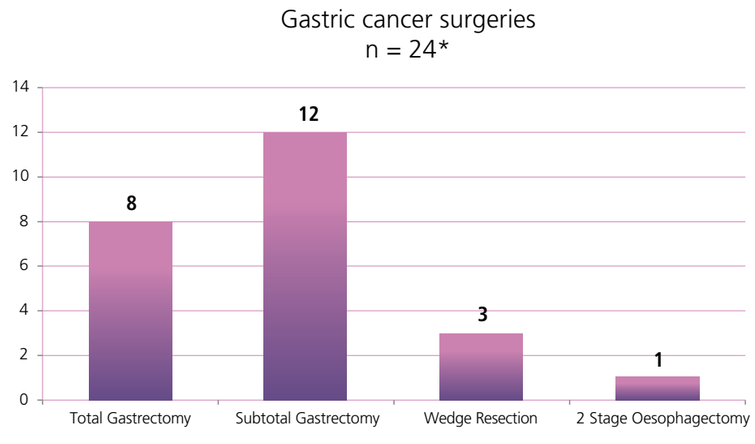
Table 2 Gastric: First Planned Treatment

Radical	
Endotherapy	10
Surgery first	17
Neo-adjuvant therapy	8
-Neo-ad Chemo	8
-Neo-ad ChemoRadiation	0
Radical ChemoRadiation	0
Unimodal chemo	0
Unknown	1

Palliative	
Endotherapy	0
Surgery	0
Chemotherapy	11
Radiotherapy	0
Stent/Peg/Dilo	2
Palliative Care	7
Treated elsewhere	4

- 58% of patients were treated with curative intent.

Figure 5 Gastric cancer surgeries



* includes patients diagnosed in 2018 and 2019

Key Achievements in 2019

Ms Claire Donohoe was appointed as a third upper gastrointestinal surgeon within the Team. Over 90 complex major cancer resections were performed, which marks a steady increase. There was also a major increase in the endotherapy programme for early mucosal oesophageal cancer at the TSJCI, under the leadership and clinical care of Professors D. O'Toole and N. Ravi.

In clinical research, patients are linked in to the RESTORE trial of multimodal rehabilitation following major cancer surgery, and all patients are pre-habilitated in collaboration with the Department of Physiotherapy and Ms Sarah Moore, in particular.

The Nutrition Survivorship Clinic, led by a senior dietician, Ms Michelle Fanning, provides follow up on all patients who have had oesophageal cancer surgery, as well as detailed management of patients who are diagnosed with malnutrition or malabsorption. Of the many publications, the article in Nature Reviews of Gastroenterology and Hepatology on "Obesity and Gastrointestinal Cancer" was the most high-impact.

Numerous publications submitted or for submission including (a) An audit of operative outcomes from the National Centre at St James's Hospital compared with best international benchmarks; (b) A study of visceral obesity and metabolic syndrome and impact on operative and oncological outcomes in oesophageal cancer; (c) A study of liver function before and after oesophageal cancer surgery; (d) Prospective analysis of pneumonia and surgical site infection in oesophageal cancer; (e) A 10 year audit of operative and oncologic outcomes after oesophageal cancer surgery; and (f) Biology vs Anatomy across the spectrum of oesophago-gastric junction adenocarcinoma.

National Clinical Guidelines for oesophageal cancer were developed with the NCCP, Professor Reynolds chaired this group which had significant input from Professor Dermot O'Toole (gastroenterology), Professor Ravi and Ms Donohoe (surgery), Professor Ciaran Johnson (radiology), and Dr Cian Muldoon (pathology).

Key Priorities for 2020

- Continued recruitment on the NeoAEGIS international randomised clinical trial, led by St James's Hospital, which has enrolled 366 of a planned 540 patients with oesophageal cancer, in association with centres in the UK, Denmark, and France
- Scientific research, including publications on (a) a microRNA signature predicting response or resistance to chemoradiation; (b) the prognostic significance of the immunoscore in oesophageal cancer; and (c) visceral obesity and the tumour microenvironment.
- Creating a national network, already approved, for reporting of all oesophageal cancer cases within an international data base (Esodata.org)
- Increase participation in new clinical and translational trials, particularly in metastatic disease, under the Lead of Professor Maeve Lowery
- Collaborating in international trials, including TIGER, TENTACLE, and CARDIA
- Develop new posts as ANP in specialist nursing, in dietetics, and speech and language therapy
- Increase molecular testing within pathology for both oesophageal and gastric tumours to support personalised treatment and enable clinical research
- Standardisation of MDT process and data capture on EPR
- Standardisation of the patient pathway

"Thank you all for everything over the last for months. Your empathy and caring natures made a horrible period much more bearable and for that I can't thank you enough".

patient feedback

8 Skin Cancer

Overview of Service

The demand for the care of skin cancers of all forms continued to increase throughout 2019, in keeping with national and worldwide trends.

The service in St James's Hospital is uniquely placed to provide for the multidisciplinary requirements of patients, with the wide range of specialists needed in diagnosis, treatment and continuing care.

Dermatology, Mohs surgery, plastic surgery, radiation oncology, medical oncology, dermatopathology, maxillofacial surgery, and head and neck surgery are all on site and work closely within the skin programme. Nurse-led diagnosis, surgery and ongoing surveillance continue to develop as vital parts of the service.

The hospital provides the local secondary care service in addition to tertiary and quaternary care for the region and country. This Cancer Centre provides skin cancer care for our sister hospitals within the Dublin Midlands Hospital Group. St James's Hospital is also the de facto national Mohs micrographic surgery service for difficult, high-risk and rare skin cancers.

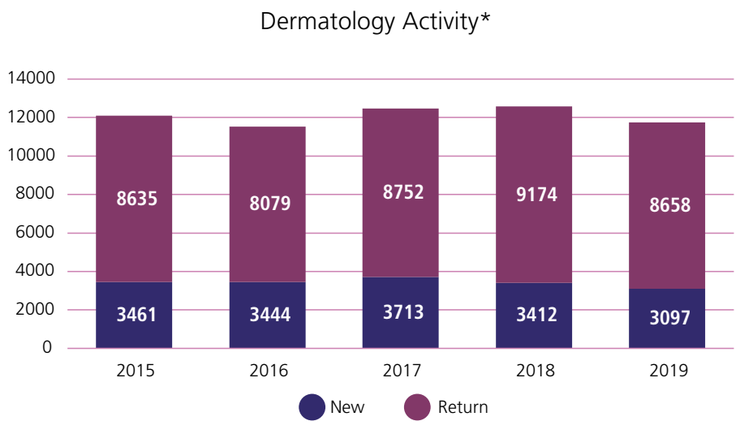
The skin cancer service provides ongoing care of patients with other forms of cancer, and those long-term survivors at higher risk of skin cancers as a result of their primary cancer or their treatment of same.

This long-term focus of developing "a critical mass" of patients, healthcare professionals, facilities and processes continues to improve the care and safety of patients attending the service.

The team consists of:
Dermatology, Mohs surgery, plastic surgery, radiation oncology, medical oncology, dermatopathology, maxillofacial surgery, and head and neck surgery are all on site and work closely on daily basis. Nurse lead diagnosis, surgery and ongoing surveillance continue to develop as vital parts of the service. A dedicated Malignant Melanoma CNS commenced post in May 2019.

Key Activity

Figure 1 Dermatology outpatient activity



*Activity includes benign and oncology

Figure 2 Dermatology pigmented lesion activity

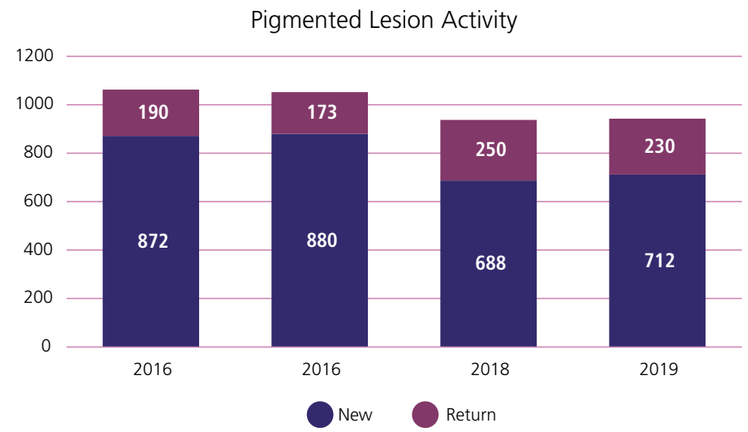
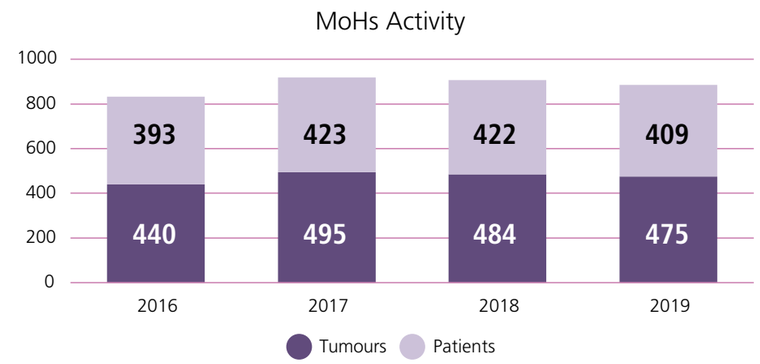


Figure 3 Dermatology MoHs Activity

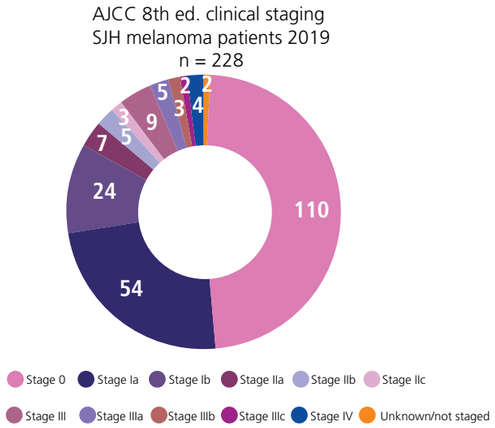


*An individual patient can have more than one MoHs procedure site.

Clinical Detail and Analysis

The dermatology data manager works with the MDT to provide detailed tracking and analysis of melanoma and non-melanoma skin cancer diagnoses, staging and treatment pathways to enable KPI reporting, clinical audit and survival analysis. Figures 4, 5, 6 and Table 1 describe some of the clinical data reported from the Cancer Audit Programme registry.

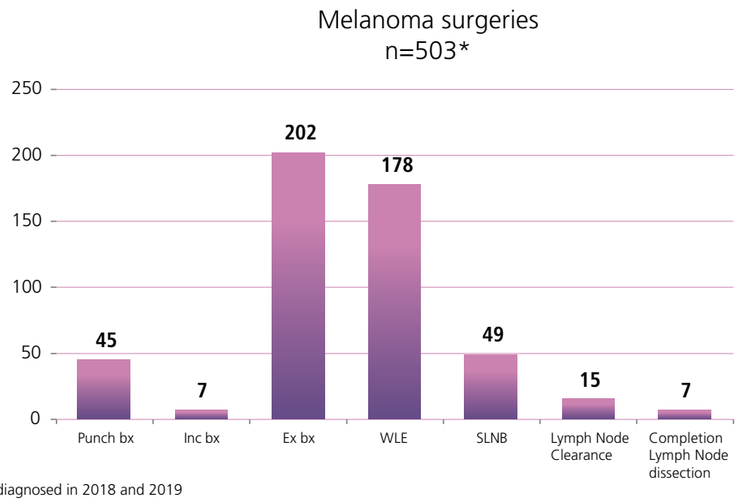
Figure 4 Total Number of Patients Diagnosed with Melanoma



*Eight patients had two sites and one patient had three sites of disease

49% of patients had stage 0 disease at presentation that is melanoma in situ

Figure 5 Melanoma surgeries



* includes patients diagnosed in 2018 and 2019

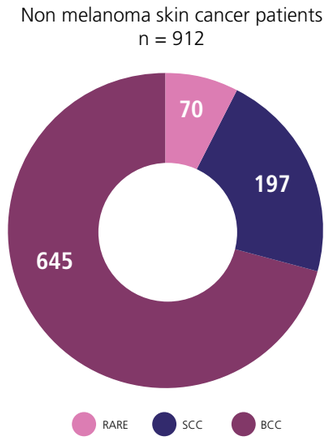
- Diagnostic and therapeutic procedures were performed predominantly as day cases
- SNB/Lymph node dissections were admitted.

Table 1 First planned treatment

Melanoma	
Surgery	223
Radiotherapy	1
Medical Oncology	2
Opted for observation punch biopsy	1
Refused Treatment	1
TOTAL	**228**

- Surgery was the first planned treatment for most patients.

Figure 6 Total Number of Patients Diagnosed with Non Melanoma Skin Cancer



- Mohs Procedures = 475

Key Achievements in 2019

- The focus of 2019 was on the processes involved in delivery of care. Central to this was the MDT and the collection of reliable and accurate data
- Adherence to the NCCPs Standard Operating Procedure (SOP) on melanoma MDT continues and is reviewed quarterly. The skin cancer service in St James's Hospital has for many years discussed complex non-melanoma skin cancers at the MDT and we follow the same SOP for these patients
- Pathways and standardisation of care protocols have been agreed between the MDT members. This involves diagnosis, investigations, treatment and surveillance. All relevant information is now entered live at the MDT and electronically stored on the patient medical record
- The appointment of a melanoma specialist nurse and a data manager in May 2019 hugely enhanced patient safety and quality of care, tracking and supporting each patient from the start to finish of their care journey. A nurse-led Melanoma Clinic was established in September 2019 by the appointed CNS. This role coordinates the patient with a pigmented lesion through the appropriate pathway of care; with follow up review preformed in an established a nurse-led day procedure clinic. This clinic was established to reduce the waiting time for removal of skin lesions which are suspicious for melanoma and improve the quality of care being provided to patients diagnosed and being treated for malignant melanoma. Patient education and development of health promotion of area focused on and resulted in the publication of the following patient information
  - » *The Role of the CNS in Melanoma*
  - » *Wide Local Excision for Malignant Melanoma*
  - » *Sentinel Lymph Node Biopsy for Malignant Melanoma*
- A Health Promotion initiative was launched in August 2019 with a sun awareness stand in the main hospital concourse. The team worked in collaboration with the Irish Cancer Society (ICS) Daffodil Centre
- A large number of patients diagnosed elsewhere link into the Cancer Centre for treatment and advice. The processes to ensure complete and accurate information is available to guide clinical decisions have been strengthened
- The real-time capture of data has allowed subsets of melanoma patients to be identified, such as melanoma of pregnancy, incidental diagnoses, familial melanoma, and rare melanoma subtypes. This will allow improvements in service planning into the future
- Initiated continuing medical education as part of the MDT to inform the members of advancements and changes in each of their specialist areas

Key Priorities for 2020

- Centralisation of referrals for skin cancer for the entire hospital group is an urgent priority and one to be welcomed. It will allow for adherence to the principle of "the right treatment, by the right person, at the right time, the first time".
- Enhance resources through the appointment of a third dermatopathologist and a third Mohs surgeon, laboratory scientists skilled at skin cancer processes.
- Invest in new antibodies for immunohistochemistry are necessary such as BAP1 to help identify BAP1 mutated melanomas and BAP1 tumour predisposition syndrome, as well as PRAME which can help distinguish melanoma from benign melanocytes.
- Endeavor to support academic/fellowship positions in skin cancer (dermatology, dermatopathology, plastic surgery, oncology and radiation oncology)
- Development of nurse-led surgery and diagnosis continues with two dermatology CNS's. The development of ANP as part of the service is the crucial next step in 2020
- Centralisation of the MDT into the Cancer Centre for the entire Dublin Midlands Hospital group
- Build on the work done on non-melanoma skin cancer data bases and non-melanoma MDTs continues
- Enhance psychological support for patients impacted by skin cancer

9 Urology Service

9 Urology Service

Overview of Service

The urology service in St James's Hospital provides general and oncological surgery for prostate, renal, bladder, testicular and penile cancers. The service is supported by four consultants; Professor T. Lynch, Professor R. Manecksha, Mr I. Ahmed and Ms L. Smyth (2.6 WTE) and five CNS's; Ms Tanya Conroy, Marion O'Brien, Grainne Kelly, Anna Loughlin and Siobhan Ni Chinneide (4 WTE). The team provides a renal calculi service, Haematuria clinic and a Rapid Access Prostate Clinic (RAPC).

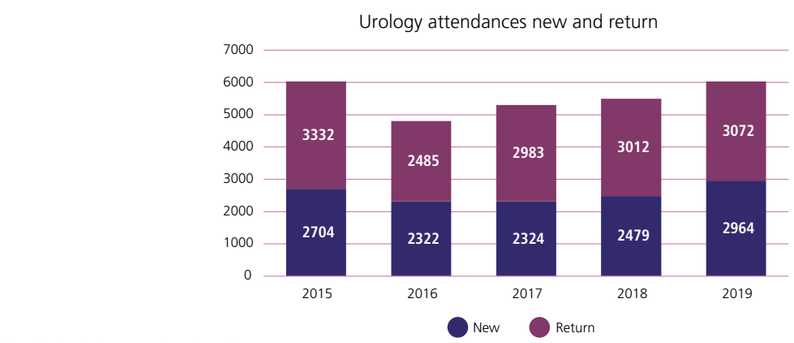
Prostate cancer is the leading cause of cancer in men (excluding non-melanoma skin cancer NMSC) and accounts for 11% of all invasive cancers in Ireland. The RAPC provides GPs with direct access to consultant-led assessment and diagnostic services for men with suspected prostate cancer with the majority of referrals coming from within our own Dublin Midlands Hospital Group (DMHG) hospital group catchment area.

The urological oncology service has a multidisciplinary approach to care and is supported by histopathology, radiology, medical oncology and radiation oncology. All patients are referred for discussion at the weekly MDT meeting where treatment plans are decided.
St James's Hospital is a recognised training site for the National Urology Training Programme for Higher Specialist Training in urology surgery and provides undergraduate training for Trinity College School of Medicine. Urology is aligned to the National Clinical Programme and to the National Cancer Control Programme (NCCP).

Key Activity 2019

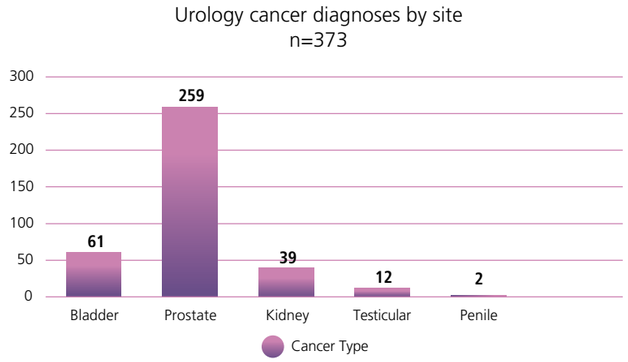
The urology cancer data manager works with the MDT to provide detailed tracking and analysis of urological cancer diagnoses, staging and treatment pathways to enable KPI reporting, clinical audit and survival analysis. Figures 2, 3, 4, 5 and Tables 1, 2, 3, 4 describe some of the clinical data reported from the Cancer Audit Programme registry.

Figure 1 Urology attendance and return



*activity includes general and oncology

Figure 2 Urology Cancers Diagnosed by Site



9.1 Prostate Cancer

Figure 3 Rapid access prostate attendances and diagnosis

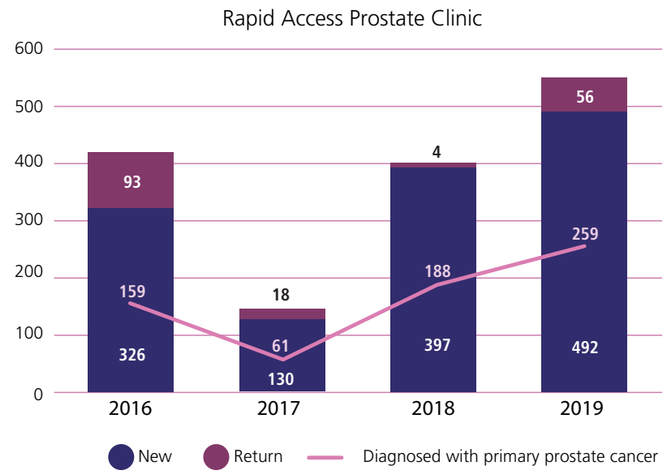
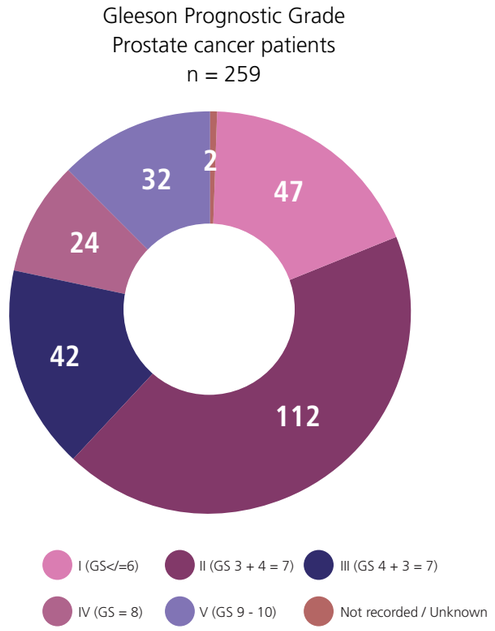


Figure 4: Total Number of Patients Diagnosed with Prostate cancer



- 78% of patients were Gleeson Grades I-III.

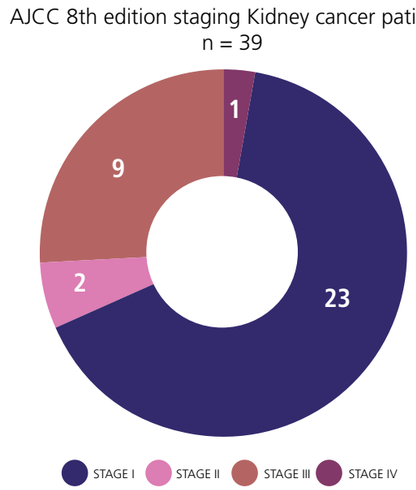
Table 1 Planned Treatment Prostate Cancer

Planned Treatment Prostate Cancer	
Active Treatment*[1]	46
Active Surveillance / Active Monitoring	24
Further Imaging / Investigation Required	20
Hormone therapy alone	7
Radiotherapy alone	17
Radiotherapy and hormone therapy	40
Surgery Only*[2]	55
Medical Oncology	3
Hormone therapy and Medical Oncology	7
Awaiting MDT Treatment Discussion	22
Awaiting OPD Treatment Discussion	18
TOTAL	**259**

*[1] Surgery Vs Radiotherapy
[2] Robotic surgery is carried out off site

9.2 Kidney Cancer

Figure 5: Total Number of Patients Diagnosed with Kidney cancer



- Two thirds of patients were diagnosed with Stage I disease

Table 2 Planned Treatment Kidney Cancer

Planned Treatment Options Kidney (n=39)	
Active Surveillance / Active Monitoring	2
Surgery Only	35
Further Imaging Required	1
Radiation Oncology Referral	1
TOTAL	**39**

9.3 Bladder Cancer

There were 61 patients diagnosed with bladder cancers

Table 3 Planned Treatment Bladder Cancer

Planned Treatment Options - Bladder (N=61)	
Surgery TURBT	53
Surveillance	2
Surgery Cystoprostatectomy & Nephroureterectomy	1
Surgery Cystoprostatectomy	1
Surgery Radical Cystectomy	1
Surgery Ureterectomy & Nephroureterectomy	1
Palliative Chemotherapy	1
Surgery TURP	1
TOTAL	**61**

9.4 Testicular and Penile Cancer

There were 12 patients diagnosed with testicular cancer

Table 4 Planned treatment testicular cancer

Planned Treatment Options At St James's Hospital - Testis (N=12)	
Surgery & Close Surveillance	6
Surgery & Adjuvant Chemotherapy	5
Neoadjuvant Chemotherapy & Surgery	1
TOTAL	**12**

There were 2 patients diagnosed with penile cancer

Key Priorities for 2020

The service is planning some key developments in 2020 and 2021. These include:

- To improve the pathways of care for the management and provision of high quality, patient-centred urology cancer service
- The confirmed appointment of a urology consultant specialising in onco-urology who will take up post in 2021
- The appointment of an additional consultant post is being progressed for 2020
- Increase diagnostic capacity for ambulatory procedures to improve access and intervention timelines
- The hospital is embarking on the implementation of a robotic surgical program
- The specialty plans to develop an Advanced Nurse Practitioner role within the service

10 Cancer Clinical Trials

10 Cancer Clinical Trials

Overview of Service

The Cancer Clinical Trials Office is a well-established team of Principal Investigators (medical oncologists, haematologists and surgeons), research nurses, data managers, a senior pharmacist and a programme manager. The aim is to provide cancer patients with access to the latest cutting edge treatments and to conduct research to the highest standard, ensuring compliance with Good Clinical Practice (GCP) and General Data Protection Regulation (GDPR).

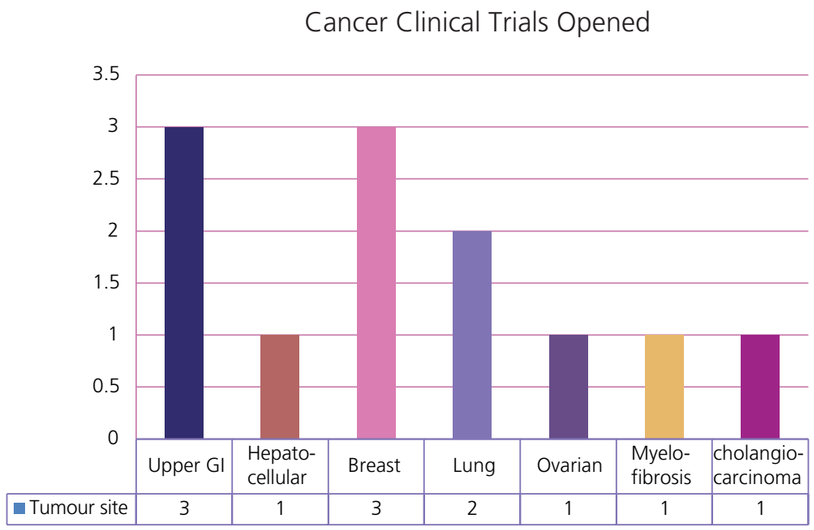
The Cancer Clinical Trials Office conduct many different types of research; clinical drug trials, surgical trials, quality of life studies and biomarker studies. The majority of the research projects are industry sponsored large international phase III clinical drug trials. The Cancer Clinical Trials Office works closely with Cancer Trials Ireland and the network of cancer specialists across the country and accept referrals from other hospitals for patients who are interested in enrolling in one of the open trials.

Clinical Trials Leads include Professor Elisabeth Vandenberghe, Consultant Haematologist and Director of Cancer Clinical Trials, Professor Maeve Lowery, Consultant Oncologist, Professor Translational Medicine and Ms Ingrid Kiernan, Manager, Cancer Clinical Trials Office

Key Activity 2019

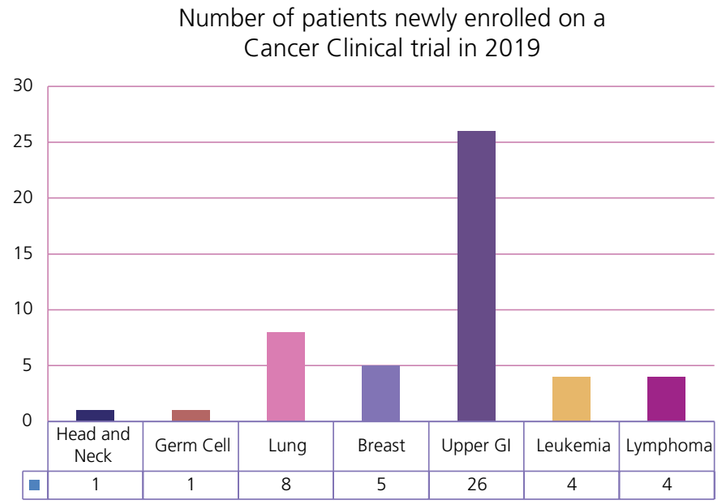
The unit had 67 active cancer clinical trials, including 20 open to recruitment and 12 newly opened clinical trials in 2019. The newly opened trials were across the following subtypes; breast, lung, upper GI, gynaecology and haematology (see graph below). All of these trials were industry sponsored and are listed in Appendix 1.

Figure 1 Cancer clinical trials opened



In 2019, 49 patients were newly enrolled in 13 different trials as per the table below. Further details listed in Appendix 2.

Figure 2 Number of patients newly enrolled



Key Achievements in 2019

Designed and implemented an online planner for the clinical trial patients attending the Haematology/Oncology Day Centre (HODC) ward for treatment. This allows activity to be tracked.

Successfully passed a sponsor audit with only minor findings.

Key Priorities in 2020

- To increase enrollment onto clinical trials and to increase the number of trials opened. At the time of writing, there are 20 clinical trials in the pipeline for 2020, however, the Covid-19 pandemic could potentially have an impact on the unit in 2020 as trials can only be opened when it is safe to do so
- Shorten the length of time is takes to open trials, also working with IMS to develop an online form and associated database to record our metrics
- Create a new post of Clinical Trial Start Up Specialist, with responsibility for overseeing and facilitating study opening timelines (ethical approval, site initiation visits (SIVs), preparation of study documentation) and for streamlining our start up process to facilitate increase in the clinical trial portfolio
- Increase Clinical Trials public profile and have an up to date list of all trials on the St James's Hospital website so patients can search for suitable trials and then contact the research team in the Cancer Clinical Trials Office
- Establish closer links with the CRF (Clinical Research Facility) by conducting clinical trials there
- Widen our PI (Principal Investigator) base and broaden our portfolio of clinical trials by conducting phase1 and phase 2 trials with support from start-up investment with the aim of achieving 8 % enrolment by 2024

"I'm delighted to be part of a clinical trial. The nurses and doctors really look after me, and I feel like the trial gives me an additional layer of protection and helps to advance medical knowledge. I'd highly recommend it to anyone who has the opportunity to participate!".

patient feedback

11 Cancer Genetics

11 Cancer Genetics

Summary of Service

The Cancer Genetics service at St James's Hospital was established in 2011 and remains the only consultant-run cancer genetics service in a cancer centre in Ireland. The service is led by Professor David Gallagher, Consultant Medical Oncologist and Geneticist, with a clinical team consisting of three WTE registered genetic counsellors, three 0.5 WTE clinical nurse specialist genetic counsellors, one family history nurse coordinator, and operational and administrative support (one WTE business manager, 0.5 WTE data manager, two WTE administrators).

The Cancer Genetics Service provides risk assessment, counselling and genetic testing for individuals and families at increased risk of cancer.

The service aims to provide:

- Risk assessment and screening recommendations
- Counselling and education for patients and families
- Diagnostic testing (screening test for alterations within a gene where a familial mutation has not yet been identified)
- Predictive testing (test for a mutation that is known to exist in a family)
- Specific pre and post-test counselling
- Data collation and tracking
- Collaborative participation in relevant basic/ translational/clinical research.

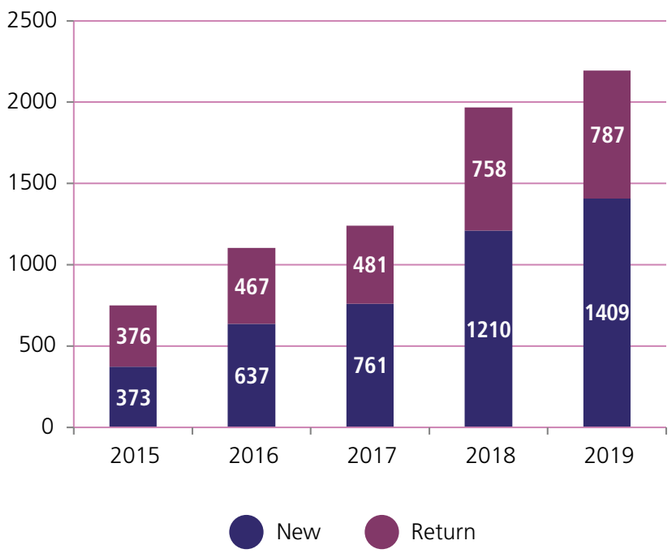
Referrals are received from all cancer centres in Ireland and from the community. Activity has increased exponentially year-on-year, commensurate with the increasing clinical relevance of cancer genetics in caring for patients with cancer.

Technological advances have made it possible to genetically profile not only tumours, but also the individuals who develop them. This information can be used to select a more tailored therapeutic approach for patients with cancer. We can additionally identify healthy individuals who carry certain genes that genetically predispose them to cancer, and intervene to prevent the disease or diagnose it early at a curable stage. This preventive capability of cancer genetics is particularly powerful, and if harnessed will contribute meaningfully to the future wellness of the Irish population.

Key Activity 2019

The cancer genetics service activity and patient consultations continues to rise.

Figure 1 New and return activity



Structural Symmetries sculpture by artist Chris Wilson installed in the hospital concourse. This artwork celebrates the work of staff at St James's Hospital and Trinity College Dublin, notably Prof. Peter A. Daly, Nurse Wilma J. Ormiston and Dr O. Ross McManus, who contributed to the discovery of the BRCA2 gene in 1994. It also pays tribute to the generosity of families, particularly the extended Woods family, who participated in cancer genetics research leading to improved care for many worldwide.

Key Achievements in 2019

A 25-year tribute to the lifesaving BRCA2 gene
The Trinity St James's Cancer Institute unveiled a sculpture of 'Structural Symmetries' in the hospital concourse, to mark the 25th year since the discovery of the lifesaving BRCA2 gene. The sculpture was created by artist Chris Wilson.

An Irish family played a central role in the discovery of the BRCA2 gene by participating in cancer genetics research. Professor Peter Daly, Ms Wilma Ormiston and Dr Ross McManus were among the authors of the paper published in "Science" in 1994 to announce that BRCA2 had been discovered.

The artwork pays homage to the contributions of participating families, St James's Hospital and Trinity College Dublin staff to the international effort in the search for BRCA2, led by Professor Sir Michael Stratton, then working at the Institute of Cancer Research, Sutton, Surrey and now Head of the Sanger Institute.

The discovery of the BRCA2 gene has led to improved care for many people worldwide. Non-carriers, too, have benefitted from this knowledge.

Gathering Around Cancer 2019

The 7th annual 'Gathering Around Cancer' conference had a central genetics component with talks from international expert speakers. The conference offered the opportunity for Irish people involved in many aspects of cancer care, at home and abroad, to gather in Croke Park, Dublin. Multidisciplinary clinical teams were joined by colleagues from basic science, healthcare management, and industry, along with international experts with an ancestral connection to Ireland and friends who have meaningfully contributed to Irish cancer caner through training and research.

The conference was led by Professor David Gallagher and Professor John McCaffrey, Consultant Medical Oncologist, Mater Misericordiae University Hospital. Attendees gained an up-to-date and clinically relevant education across cancer sub-types, and the opportunity to renew old friendships, to exchange research ideas and to develop new collaborations.

International expert speakers included Dr Karen Cadoo and Dr Mark Robson, Memorial Sloan Kettering Cancer Center New York, Professor Peter Daly, (retired) St James's Hospital and Professor Sir Michael Stratton, Sanger Institute, among many others.

Cancer Genetics Service

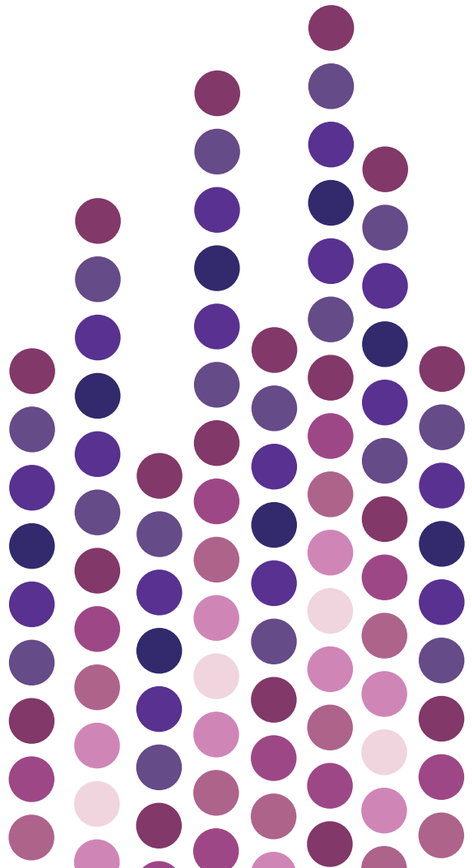
- The Cancer Genetics service welcomed two new registered genetic counsellors to the team in 2019, and for the first time a new role of Family History Nurse Coordinator was appointed
- Talk entitled 'Cancer and Genetics' at the Irish Cancer Society Living Well Beyond Cancer conference, September 2019
- Talk entitled 'BRCA and Beyond' at the 2nd Annual BRCA Seminar for Women at High Risk of Breast & Ovarian Cancer and their Families
- Foundation Course in Oncology/Haematology Nursing
- Poster Presentation at The Association of Genetic Nurses and Counsellors Annual Conference, London, April 2019 entitled: Irish Association of Genetic Counsellors (IAGC) Setting up a Professional Body and Working Towards Regulation. C Giffney, T Clark, D Lambert, C Peyton, J Turner, N White, E Whitmore, A Ward
- In-house teaching for gynaecology, oncology and haematology senior house officers (SHOs) on cancer genetics, pedigree drawing
- MSc student placement (Cardiff University)
- Medical student placement (RCSI)
- A novel programme for MRI screening in Li-Fraumeni Syndrome patients was started this year, with funding support from the Bobbie Bastow Genetic Foundation. Li-Fraumeni syndrome is an inherited familial predisposition that increases the risk of developing several types of cancer

Key Priorities for 2020

- New consultant Oncologist and Geneticist, Dr Karen Cadoo, Consultant will commence in June 2020 to lead the service with Prof David Gallagher
- The growing waiting list is a major challenge for the cancer genetics service. Given the expanding indications for genetic testing, expanding the cancer genetics team in 2020/2021 is necessary in order to meet service demands and reduce the waiting list
- The service goal for 2020 is to optimize efficiencies by improving testing turn-around-time, improving electronic processes and reducing paper-based practice, maximising resources and developing a business model that facilitates remote testing via telemedicine consultations for patients where appropriate
- To integrate and implement Progeny software. Progeny is a risk modeling and pedigree software that will improve the quality of family based records and safe patient care. The Progeny initiative is funded by the Bobbie Bastow Genetic Foundation
- The service intends to continue to develop internal and external research collaborations

"The discovery of the Brca Gene was a great breakthrough in medical history not alone for Science but mostly for to help families like ours. it was in our case the brainchild of people like Prof., Peter Daly. He was brave enough to take on the task of starting the research in St James Hospital when our family became patients of his. as it was of great concern when more than three members of our family got cancer and he began to look into the how, why, he was driven with full commitment. It is so important to the families with the abnormal gene to be able to identify how and where it came from and to get the chance to participate in the journey. The discovery and findings of the Brca Gene has made a great contribution to cancer research and has proved the importance of continuing funding and the effects and ongoing support to humanity. As a member of one of the largest family I have to say the research has helped to change us and our outlook to cancer and we have all received the benefit of the journey through this research and may your research continue for many more years to come."

The extended Woods family



12 Intensive Care Unit

12 Intensive Care Unit

Overview of Service

St James's Hospital has a 31-bedded Intensive Care Unit (ICU) staffed by eight consultants, 34 Anaesthetic / ICU trainees, alongside 139 staff nurses, in addition to one practice development staff, four nurse educators and 11 nurse managers in the general 21 bedded ICU. Additionally, there are 50 nurses, two educators and four managers in the eight bedded cardiothoracic ICU. There are 18 nurses and one nurse manger in the Burns Unit.

SJH has the highest and most complex clinical activity (measured by number of level 3 ICU admissions) of all ICUs in Ireland. It provides critical care and outreach service to medical/surgical oncology and haematology patients throughout the hospital. The ICU is staffed with a multidisciplinary team experienced in the management of cancer patients. The department submits audit data to NOCA (National Office of Clinical Audit), and is benchmarked with data from ICNARC (UK). All patients receive multidisciplinary care incorporating a team comprising ICU nurses, nurse educators, pharmacists, physiotherapists, dieticians and speech/language therapists.

The department has strong affiliations with Trinity College Dublin (Trinity) with active research (led by Dr Ignacio Martin-Loeches) and undergraduate education activities (led by Dr Enda O'Connor). Furthermore, multiple post-graduate masters level courses are run each year for the nursing cohort (18 nurses graduated in 2019). Local education and training for all staff is central to the ICU. Educational themed months are part of the fabric of the ICU, with "Haematology and Oncology" themes part of the 2019 programme.

Key Activity 2019

In 2019, 301 admissions to the general ICU were directly related to cancer (36% of total admissions). Of these 301 patients, 69% were surgical and 31% were medical admissions.

- 45% had mechanical ventilation
- 70% had vasopressor use
- 8% had dialysis
- Mean APACHE scores were 15.8 – 22.8 for surgical and medical patients respectively, demonstrating a moderate to high severity of illness in the first 24 hours in the ICU
- Average duration of mechanical ventilation varied from 1d (surgical patients) to 5d (medical patients).
- Average duration of ICU stay was 4.1 days (surgical patients) to 8.1 days (medical patients)
- ICU mortality was 1% (surgical patients) and 8.6% (medical patients) and overall ICU standardised mortality rate was ~1 throughout 2019

An additional 58 patients were admitted with a cancer diagnosis to the cardiothoracic ICU. 67% required mechanical ventilation and had an average length of stay of 5.3 days (surgical patients) to 17.9 days (medical patients).

Expansion:

- An additional four beds to the intensive care unit were commissioned to facilitate the rapid admission of acutely unwell patients and to maintain the throughput of patients undergoing major cancer surgery
- There was an increase in staffing to support the ICU bed expansion, targeting an increase in both consultant and trainee numbers

Nursing activity:

With the increase in bed capacity, the nursing team expanded in 2019, with 11 additional nurses and two nurse educators, who provide a range of supports to a large number of nurses.

These clinical facilitators have enhanced individual and team professional development, enabling a culture of innovation practice, which has optimised the efficacy of critical care and quality of the patients' individual experience. The education and support extends beyond ICU, for example, ICU staff ran workshops with wider hospital staff on safe management of central venous access devices and updated this hospital protocol in 2019.

An additional Health Care Assistant (HCA) was employed in ICU, increasing the team to four HCAs. This role is integral to effectiveness of ICU. They ensure areas are safely stocked, equipment and bed spaces prepared and are involved in patient mobility and manoeuvres such as proning patients, all to assist the patient, nurses and doctors.

Key Achievements in 2019

- Introduction of ICU checklist to enhance the care of cancer patients in the ICU
- Improvements in discharge documentation and planning to improve cancer patient safety and medicine reconciliation during the transition from ICU to the general ward
- Development of written protocols for (i) tracheostomy care and (ii) peri-operative management of patients after major head and neck cancer surgery with ENT, plastic surgery and oral and maxillofacial surgery teams
- Escalation pathway and audit to monitor and improve patient flow peri-op major cancer surgery
- Improved standard of equipment. All critical care beds and ICU bedside storage carts were upgraded
- As part of Ventilator Associated Pneumonia (VAP) prevention bundle, subglottic port tracheostomy tubes were introduced to reduce the incidence of VAP
- The ICU Clinical Information System (CIS) enables accurate data collection and audit of all documentation, including bundle compliance with subsequent targeted improvements Introduction of new central venous access device (CVAD) to reduce infection for all ICU patients
- To optimise access and storage, ICU pharmacy stores and supplies were reviewed.

Research published and underway:

- EPIC III (the Extended Prevalence of Infection in Intensive Care III) study; international observational study of healthcare infections in intensive care patients, with subgroup analysis of cancer patients. St James's Hospital ICU was involved in all stages of study including patient recruitment, and publication is due in the Journal of the American Medical Association (JAMA), (Dr Ignacio Martin-Loeches)
- Current database analysis of all patients admitted to our ICU with known cancer and acute respiratory failure, (Dr Ignacio Martin-Loeches)
- Research published regarding the communication with patients' GPs when they were admitted, discharge or died in the ICU, (PLoS One, February 2019, Dr Enda O'Connor)
- 18-month audit of cancer patient care in St James's Hospital's ICU, demonstrating excellent mortality outcomes in the setting of high patient complexity and severity of illness.

Education

- Acquired financial support from Trinity College Dublin to fund an ICU/Anaesthesia Lecturer position, which will support undergraduate education. The expanded learning curriculum will include critical care oncology and haematology.

Key Priorities for 2020

- Expansion of the services provided to the ICU by pharmacy, physiotherapy, dietetics and speech and language therapy
- Acquire funding for an additional audit nurse to ensure data entry to the national audit remains up to date
- Further develop additional capacity within the critical care area with structural expansion and development of single ICU rooms to reduce the clinical risk posed to cancer patients being cared for in open ICU areas
- Improve the timely delivery of care to ICU patients. St James's Hospital ICU is piloting a Bed Information System; a National Office of Clinical Audit (NOCA) tool to monitor national ICU bed availability as well as clinical activity provided outside the intensive care unit. This aims to enhance patient flow, both within our hospital, and from regional hospitals
- On-going education for all ICU staff to maintain high-level of knowledge and care for cancer patients
- Realisation of Critical Care ANP positions to advance nursing practice and provide safe, timely evidenced-based nurse-led care to patients
- Strategic planning with the Haematology Department for upcoming delivery of CAR-T therapy in our hospital
- Develop a garden for ICU patients (Trinity Med Day raised €20,000 towards this patient-centred innovation)
- On-going audit of ICU processes and outcomes, which demonstrate a further need for bed expansion to prevent cancer surgery cancellations and delayed admissions to the ICU
- Complete SJH ICU study entitled "Neutropenia as a risk factor for mortality in immunosuppressed patients with solid organ and haematological malignancies" (Dr Ignacio Martin-Loeches)

13 Laboratory Medicine Department

13 Laboratory Medicine Department

13.1 Cancer Molecular Diagnostics

Overview of Service

Cancer molecular diagnosis (CMD) provides a molecular testing service for the identification of genetic abnormalities and the assessment of minimal residual disease (MRD) in cancer patients.

The development of new, targeted drugs means that knowing the exact genetic changes in any given patient is increasingly important in determining the right treatments for that individual.

The CMD laboratory analyses a variety of samples from blood and bone marrow to tissue to assist in the diagnosis, prognosis, treatment selection and monitoring of a range of cancers. The laboratory also provides a service to screen patients for inclusion in clinical trials using molecular diagnostics.

Professor Elisabeth Vandenberghe, Consultant Haematologist, is the clinical lead of the CMD laboratory, the co-lead is Dr Stephen Finn, Histopathologist.

Achievements in 2019

Expansion of CMD laboratory infrastructure to facilitate a greater number of tests being performed using a technology known as Next Generation Sequencing (NGS). NGS allows the simultaneous analysis of multiple diagnostic and predictive biomarkers from a single sample. In addition to improving the diagnostic yield for some patient groups, the use of NGS allows the laboratory to add a growing range of diagnostic and clinical trial selection biomarkers to the testing repertoire. This in turn allows expedited access to newly approved therapies and identification of clinical trials that may benefit our patients.

Completion of the plans laying the groundwork for expansion of NGS-based testing through the acquisition of a robotics platform to facilitate testing, the appointment of two staff members to enhance local development of the technology, and the formal agreement to proceed to tender for a larger sequencing platform.

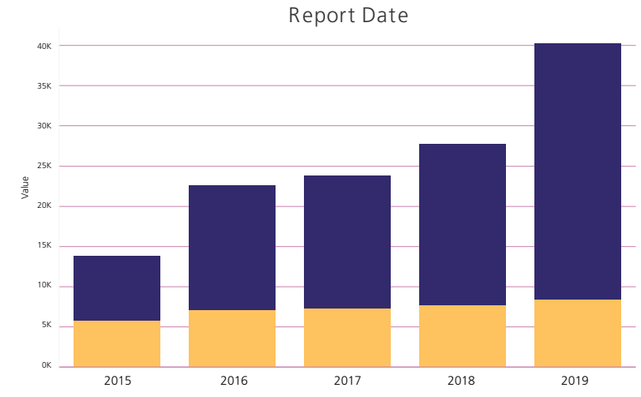
Migration of the laboratory from its previous location in the LabMed building to laboratories in the Trinity Translational Medicine Institute (TTMI) to ensure that there is adequate space and facilities for existing and new infrastructure. As the laboratory and service progresses through 2020, we should see this investment bear fruit in the form of an increased test repertoire and a broader range of options for cancer analyses.

The launch of accredited NGS-based methods for the diagnosis of myeloproliferative neoplasms and cell free DNA analysis in non-small cell lung cancer. The laboratory has also provided testing in support of the BRCA clinical trial.

Key Activity 2019

- 9% increase in the number of reports issued
  - » 8,330 reports issued in 2019.
- 9% increase in the number of patients referred for testing.
  - » 4,882 patients across 42 referring hospitals
- 58% increase in the overall number of results reported
  - » 31,848 tests reported
- 88% increase in clinical trials testing
  - » 378 clinical trial samples analysed

Figure 1 Number of reports (orange) and results (blue) issued by the CMD laboratory

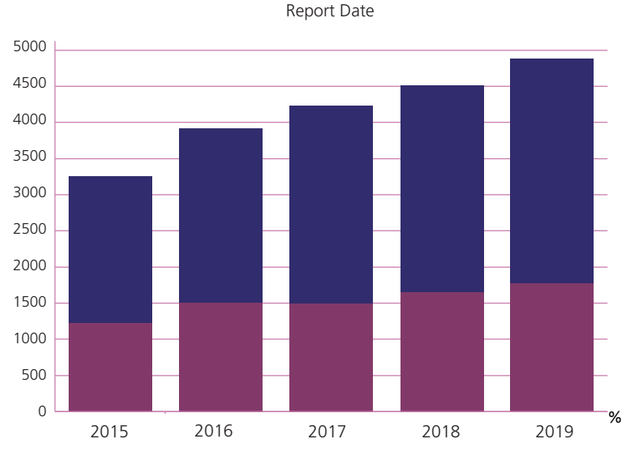


The details below show the yearly increasing number of test reports issued for patients from CMD from 2016 to 2019.
2015: Baseline
2016: 111%
2017: 7%
2018: 23%
2019: 60%

Key Priorities for 2020

- Launching of Next Generation Sequencing (NGS) based testing for haematological malignancies
- Increase in laboratory automation and sequencing capacity to handle larger NGS panels
- Development of a 500-gene pan-cancer panel for comprehensive cancer profiling

Figure 2 The number of patients tested by the CMD laboratory per annum*



*Referrals from designated cancer centres are coloured blue.

13.2 Cryobiology Laboratory Stem Cell Facility

Overview of Service

The Cryobiology Laboratory Stem Cell Facility supports the National Adult Stem Cell Transplant programme at St. James's Hospital and the Irish Unrelated Donor Bone Marrow Programme. It is situated within the Irish Blood Transfusion Service National Blood Centre on the St James Hospital campus. The Cryobiology Laboratory as part of the Tissue Establishment holds a Tissue License from the Health Products Regulatory Authority (HPRA) to collect process and store haemopoietic stem cells from bone marrow, mobilised peripheral blood stem cells and donor lymphocytes.

Stem cell products from patients (autologous) and from donors (allogeneic) are processed in the cryobiology laboratory. Allogeneic products are generally issued for immediate transplant and autologous products cryopreserved and stored in vapour phase liquid nitrogen for later directed usage.

The Cryobiology Laboratory Stem Cell Facility is the National Collection centre for Irish Unrelated Bone Marrow Registry (IUBMR) part of the Irish Blood Transfusion Service. The facility has specialist logistics knowledge with regard to International transport of stem cells, with vast experience importing and exporting fresh and cryopreserved cells.

The Laboratory provides specialised stem cell processing, cryopreservation, liquid nitrogen storage and bedside stem cell infusion service. The Laboratory has specialist flow cytometry analysis for CD34 (stem cell) and CD3 (T cells), in vitro progenitor culture and established stem cell viability and potency testing for clinical product Quality Control (QC & release) and process Quality Assurance (QA).

The provision of service includes the daily enumeration of CD34 stem cells in the peripheral blood prior to collection to identify the most effective day for patient stem cell collection and day of collection analysis to predict the collection requirements and duration.

The stem cell facility has a very large cryogenic storage facility with vapour phase liquid nitrogen storage for >4,500 stem cell units both on the St James campus and off site at Biostor Ireland.

The Laboratory is a HPRA licenced Tissue Establishment for the collection, processing, storage and distribution of haemopoietic stem cells and has internationally recognised JACIE accreditation.
The Laboratory is active in undergraduate and translational research projects in haematology and transplantation science.

The Laboratory participate weekly multi-disciplinary team meetings where all Transplant cases are discussed.

New Developments in 2019

JACIE Accreditation
Following submission of an application for JACIE accreditation in May 2018 an inspection of the Stem Cell Transplant Service, by the Joint Accreditation Committee International Society for Cellular Therapy and European Blood and Marrow Transplantation, (JACIE) was carried out in November 2018. The close out of the inspection was completed in 2019 and JACIE accreditation was granted in early 2020.

Single European Code (SEC) Labelling
In September 2019, ISBT 128 compliant Single European Code Labelling went live within the transplant programme. This project was the fulfilment of JACIE and EU requirements for stem cell product labelling and was accomplished following a yearlong project which included the Installation and validation of StemSoft Laboratory software and training of Laboratory and nursing staff of the labelling changes.

Chimeric Antigen Receptor (CAR) –T cell Therapy
The Laboratory along with the clinical team started the process of 'On boarding' with 2 commercial companies for the development of a CAR T therapy programme. The Laboratory will be involved in the collection, cryopreservation and shipment of stem cells for ATMP (Advanced Therapy Medicinal Product) Manufacture. The initiation of the project involved training, inspection and preparation of procedures to apply for TE licence authorisation change.

Cryobiology Workload Statistics 2019
74 Allogeneic transplants were performed in St James hospital in 2019. As the National Adult programme referral from all regional areas occurs, including Northern Ireland for unrelated donor transplant. 29/74 (39%) patients had sibling/related donor transplants and 45/74 (61%) matched unrelated donor transplants were performed. All sibling donor products were collected by the SJH TE. The TE bone marrow harvest team performed 13 Bone marrow harvests. The TE apheresis team collected 126 (27 allogeneic & 99 Autologous) peripheral blood stem cell products and 7 donor lymphocyte collections. 43 unrelated donor stem cell products and 2 DLI products were imported into the TE from International collection centers. The Laboratory processed a total of 198 bone marrow and apheresis products units which were harvested, labelled and processed in 2019. A total of 89 fresh Allogeneic products and 383 cryopreserved product bags were infused in 2019.

Peripheral blood stem cell (PBSC) mobilisation therapy was given to 83 patients in 2019. 81 patients had successful PBSC collections. The timing of PBSC collection is crucial and the analysis of circulating CD34 stem cells in the peripheral blood (PB CD34) has become a proven indicator of the stem cell yield in the apheresis product. Peripheral blood CD34 counts were performed on all patients who received mobilisation therapy. The total number of patient PB CD34 analyses was 242, with a median of 3 analyses per patient (range 1-5). A total of 621 product bags were cryopreserved, a net increase in storage requirement of 246 cryopreserved product bags occurred in 2019.

Autologous stem cell infusion at the patient bedside was performed by the Laboratory scientists for 90 infusion procedures, following 75 high dose conditioning regimens in 2019. 54 autologous transplants (54/75 infusions, 72%) were performed as an in-patient procedure and 36 (21/75, 28%) as a day case in HODC/the day ward in St James's Hospital and the patient transferred back to the referring hospital.

Key Priorities for 2020

- Ensure the effective delivery of high quality products for the stem cell transplant service.
- Maintain HPRA Tissue Establishment Authorisation compliance (Biennial Audit in 2020).
- CAR T vessel installation and validation. Completion of authorisation change requirements to the quality system (including developing Policy documents, service level agreements and staff training) to include the collection, processing and transport of cells for ATMP Manufacture (CAR T).
- Obtain 'Known Consignor' status with the Irish Aviation Authority for the export of cryopreserved cells for ATMP manufacture.
- Scientific Staff Restructuring plan to be put in place to enhance staff retention and Development.

13.3 Histopathology

Overview of Service

The Histopathology Laboratory is part of the LabMed Directorate at St James's Hospital and is one of the largest histology laboratories in the Republic of Ireland, providing a comprehensive cancer service to the hospital itself as well as to many outside institutions, general practitioners and other hospitals nationwide.

The department offers several excellent diagnostic facilities including automated immunohistochemistry, FISH, flow cytometry and molecular diagnostics.

The department offers sub-specialised cancer diagnostic reporting and is active in many undergraduate and postgraduate clinical and translational research projects in gynaecological, genitourinary, breast, lung, gastrointestinal, head and neck, dental, skin, soft tissue, haemato-lymphoid pathology and cytopathology.

Cancer cases are discussed weekly at MDT meetings.

The department is currently accredited by INAB ISO15189. The department is actively participating in the Faculty of Pathology NQAIS Programme. The histology workload is consistently higher than the other seven cancer centres throughout the year.

Key Activity 2019

- In 2019, 32,956 patients had specimens processed through the Histopathology Department and 5,561 patients had specimens processed through the Cytology Department. 228,380 routine stains and a further 27,991 specialised ancillary stains were performed to assist with diagnosis, prognosis and in some cases therapeutic decisions.
- The total workload in (Table 1) included 1,972 cancer resections reported across all sub-specialties (an increase of 7% from 2018). 94.2% of cancer resections in 2019 were reported within a ten day Turn Around Time (TAT).

Table 1 Total workload analysis

Histopathology	Requests:	29,217
	Specimens:	77,607
	Number of blocks:	113,642
	Sections	208, 753
	Referred cases	3,264
Cytopathology	Requests	5,561
	Specimens	7,213
	Procedures	15,089
	Referred cases	41
Cytology Procedures	Cell block	1,964
	Requested Cell Block	417
	Flow cytometry	118
	MGG	3,218
	PAP	6,987
	Specials and immunos TP	113
	Specials and Immunos CB	2,074
Immunohistochemistry	IHC	24,476
	HER2 IHC	748
	Kappa / Lambda ISH	406
Specials Stains		4,538
Mohs surgery cases		475
FISH/ISH	HER2 FISH Breast/Gastric	270
	ALK FISH	21
	ALK IHC	458
	EBV ISH	412
	HPV ISH	61
	Lymphoma FISH	1,124
	ROS1	15

Key Achievements in 2019

- Enhanced laboratory infrastructure through introduction of a Sakura Paraform auto-embedder and VIP 6 processor
- Pioneering reconfiguration of histopathology laboratory staffing, with the upskilling of Medical Aide to Medical Technologist position, improving recruitment and staff retention issues
- Appointment of new Chief Medical Scientist
- Further integration into service of medical scientist histo-dissection
- Maintenance of Irish National Accreditation Board (INAB) accreditation status
- 43 departmental research publications.

Key Priorities for 2020

- Increasing Laboratory Automation
- Scientific and consultant staff recruitment and development
- Reconfiguration of laboratory space and infrastructure
- Introduction of digital pathology into laboratory/ reporting workflow
- Enhancing seamless integration of predictive molecular and histopathological assays (shared staffing and service planning between histopathology and CMD)
- Expand staff training in Mohs and histo-dissection.

13.4 Histopathology Biobank Report

Overview of Service

A Biobank is a large collection of human biological samples (tissue) and healthcare data, donated by people, for health research. Our aim is to provide samples and data to researchers both within St. James's Hospital and to external entities in the hope that we learn about cancer; growth, prevention, early detection, diagnosis, tests, treatments, and drugs.

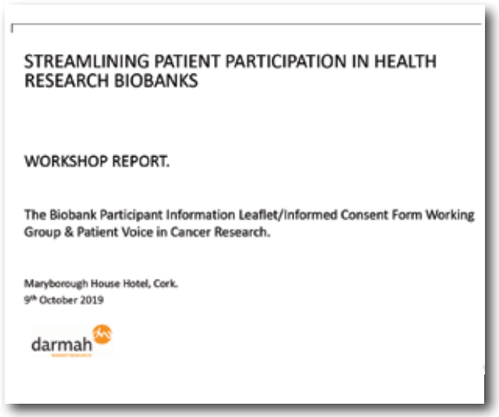
The principle objective of the St. James's Hospital Histopathology Biobank is to facilitate research while simultaneously safeguarding the integrity of the diagnostic archive. To date the Biobank has collected over 5000 samples donated by patients who have been diagnosed with breast or colon cancer. The Biobank also acts as a centralised storage facility for the storage of samples collected during the course of certain clinical trials which are co-ordinated by Cancer Trials Ireland.

Key Achievements

- The Biobank facilitated several cancer-related studies including: Breast Predict, lung cancer, HPV related cancers.
- Biobank is involved with St. James's Hospital, Trinity College Dublin / TTMI and Biobank Ireland Trust in the development of an on-campus centralised Freezer Farm. This will be a new building where valuable research materials can be stored medium- long-term.
- Biobank staff joined Clinical Research Development Ireland's (CRDI) Biobank Working Group and contributed to development of National Health Research Biobank Participant Information Leaflet (PIL) & Consent Form templates.
- The PIL and consent form templates were adjusted to complement the activities of the St. James's Hospital Histopathology Biobank (SJHHB). This PIL & consent form was reviewed by patients and patient representatives at a Patient Voice in Cancer Research (PVCR) workshop in Cork (October 9th, 2019).
- The Biobank configured the Modul Bio BIMS (Biobank Information Management System) to complement its requirements.
- Biobank Staff presented the Modul Bio BIMS and the potential solutions offered by its campus wide application to the St. James's Hospital Research & Innovation Committee.
- National Health Research Biobank PIL & Conform Form Templates – both of which are at the late stage of development.

- PVCR workshop in Cork:

- PVCR workshop report (funded by Biobank Ireland Trust):



- Progress in the development of a St. James's Hospital / TTMI Freezer Farm
- The Biobank fostered greater interactions with the Research and Innovation Office, the Data Protection Officer and the Department of Legal & Insurance.
- Biobank Manager (Blanaid Mee) was an invited speaker at the Irish Academy of Medical Sciences meeting on "Implementing Health Research Regulations to ensure compliance with GDPR" at the Royal College of Surgeons in Ireland (November 25th, 2019). The objective of the meeting being to highlight the difficulties posed by the recently introduced Health Research Regulations.

Key Priorities for 2020

- Develop robust quality system to facilitate research while also safeguarding diagnostic archive. This includes the development of a Biobank process flow, sample and data access policy, Biobank application form, and cost recovery model.
- Incorporation of BIMS into Biobank activities.
- Continue progress with the Freezer Farm.
- Increase patient engagement via workshops and engagement with patient advocate bodies including the Irish Health Research Forum (https://www.ihrf.ie/) and the Irish Platform for Patient Organisations, Science and Industry (https://www.ipposi.ie/).

14 Medical Oncology

14 Medical Oncology

Overview of Service

The Medical Oncology Service in St James's Hospital provides a comprehensive service for patients with a suspected or confirmed diagnosis of cancer. All patients suspected of having cancer are discussed in a multidisciplinary team meeting, where individual treatment plans are agreed. The service strives to improve quality of life for patients and reduce cancer-related deaths by providing advancing cancer therapies. The service is closely integrated and aligned with surgical and radiation oncology, cancer clinical trials, radiology, histopathology and molecular diagnostics.

The oncology service provides treatment to patients on an inpatient and outpatient basis. The service is consultant-led and includes an associate specialist medical oncologist, a team of specialist nurses, pharmacists, allied health care professionals who provide care to patients with cancers, with support from a team of administration staff.
The Donal Hollywood Ward is the specialist oncology ward for patients admitted to St James's Hospital.

Each medical consultant has their own area of speciality as described below:

Prof John Kennedy, Consultant Medical Oncologist, breast, colorectal
Dr Cliona Grant, Consultant Medical Oncologist, head and neck, sarcoma, lymphoma
Dr Dearbhaile O'DonnellConsultant Medical Oncologist, urology and gynaecology
Dr Sinead Cuffe, Consultant Medical Oncologist, lung, gastric, oesophageal, melanoma
Professor David Gallagher, Consultant Geneticist/Medical Oncologist, colorectal
Professor Maeve Lowery, Consultant Medical Oncologist, gastric, oesophageal, pancreatic
Dr Fergal Kelleher, Consultant Medical Oncologist, Melanoma, sarcoma
Dr Sue Sukor, Associate Specialist Medical Oncology.

The majority of patients within the medical oncology service receive care on an outpatient basis within the Haematology and Oncology Day Centre (HODC) and the Outpatient Department.

Haematology Oncology Day Centre (HODC)
The HODC operates from 8.00am to 7.00pm Monday to Friday including public holidays. Care is provided to patients with cancer who are attending the oncology and haematology service.

Patients attend HODC for medical review, nursing review, blood tests, procedures and treatments, such as systemic anticancer treatments (SACT), blood transfusions, haemopoeitic stem cell transplant (HSCT) support and stem cell harvesting.

The HODC includes two treatment bays with 18 couches for patients receiving intravenous chemotherapy. The apheresis service is also provided to patients within St James's Hospital and patients from referring centres. Apheresis involves the separation and removal of blood components and constituents for direct or indirect treatment of conditions spanning a wide range of clinical specialties. The Stem Cell Transplant Service in St James's Hospital is supported by the Apheresis Unit, where stem cells are collected for autologous and allogeneic stem cell transplant.

There are a range of services and treatments provided in the HODC and these services are continually expanding. Patient attendances to the HODC can vary from 110 to 130 attendances daily.

"To all the nurses and doctors involved in the chemotherapy unit I would like to say a huge Thank You for all your diligence and patience during my treatment in your unit also your professionalism. You are all my hero's".

patient feedback

Figure 1 Medical Oncology Activity

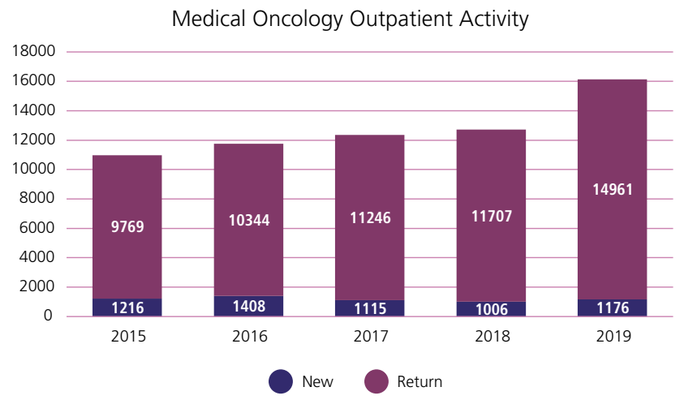


Table 1 Outpatient and Daycase activity 2015 -2019

	2014	2015	2016	2017	2018	2019
Oncology OPD	11994	10985	11756	12361	12713	16137*
Oncology Day case	6638	8986	9823	10609	10246	11095

* Note: As of July 2019, patients attending for consultation on the same day as treatment are registered separately. This change in practice accounts for some of the rapid surge in OPD figures in 2019. Daycase numbers are not affected by this change.
Oncology day case activity shows an increase of 67% from 2014

Key achievements in 2019

- Active involvement in OECI inspection in April 2019 leading to achieving OECI Cancer Centre accreditation
- Significant contribution by the medical oncology team into research activity and healthcare policy development at local, national and international levels
- The introduction of the Swift Queue Phlebotomy Service to HODC, a pilot project to reduce waiting times in HODC at registration and phlebotomy, which resulted in patients reporting improved satisfaction with the service

Key Priorities for 2020

- To expand capacity in HODC by increasing the number of treatment couches for medical oncology patients and to increase the staffing at medical and nursing levels to meet growing patient demand and improve patient experience
- To support OECI Accreditation Standards and quality improvements
- Prepare for the introduction of a National Cancer Information System (NCIS) in 2020 in collaboration with the NCCP
- Engage with key stakeholder to increase the number of cancer clinical trials available to patients and patients enrolled onto a cancer clinical trial in 2020
- Continue to expand collaborative participation in translational clinical research
- Improve patient satisfaction and wait times through the introduction of tele-health consultations for patients deemed appropriate for this service
- Expand the use of the Swift Queue Phlebotomy Service for patients attending HODC in collaboration with Laboratory Medicine Directorate
- Expansion and implementation of locally developed and NCCP key performance indicators related to improved safety and patient experience
- Introduction of a new digital dictation system to improve the capture and sharing of clinical patient information
- Introduce a more efficient appointment scheduling system to improve patient flow and efficiencies

15 Multidisciplinary Team Meetings

15 Multidisciplinary Team Meetings

Overview of Service

Multidisciplinary Team (MDT) meetings are an integral part of planning quality cancer care at the Trinity St James's Cancer Institute (TSJCI). The MDT meeting provides a forum in which the relevant multidisciplinary specialists discuss each patient's clinical presentation, radiological, histopathological and other relevant findings in order to establish consensus diagnosis and generate an appropriate individual treatment plan that is based on current best practices. MDT meetings bring together expertise from surgery, pathology, radiology, medical and radiation oncology, nursing, data management, clinical trial managers, and in some cases scientific researchers.

External hospitals participate in MDT conferences where the external treating consultant joins by teleconference to discuss external patient cases. Each conference is supported by an MDT coordinator.

The development of MDT meetings has been a key feature of cancer services and TSJCI over the last number of years.

There are currently eight cancer MDT conferences occurring weekly in St James's Hospital.

Table 1 Total workload analysis

MDT	Participating External Hospitals*
Head and Neck	Tullamore, Royal Victoria Eye and Ear, Tallaght
Gynaecology	External patient referrals to St James's Hospital. No external MDT attendance
Lung	Weekly: Mullingar, Letterkenny, Limerick, Waterford, Tullamore
Breast	External patient referrals to St James's Hospital. No external MDT attendance
Upper Gastrointestinal & Colorectal	Weekly: Tullamore
Lymphoma	Weekly: Tullamore, Waterford, Tallaght, Limerick
Skin	Tallaght
Urology	External patient referrals to St James's Hospital. No external MDT attendance

*External patients who are discussed by external participating hospitals at MDT continue treatment at that external hospital; alternatively, they may be referred to St James's Hospital or elsewhere for further specialised treatment. Patients who have been referred to St James's Hospital prior to MDT continue their patient journey under the care of their St James's Hospital consultant.

The MDT coordination team consists of one WTE Grade 5 manager and three WTE Grade IV clinical coordinators, with support from HOPe Grade 6 manager. Each MDT coordinator works with their clinical team and external hospitals to ensure all information required is available for diagnosis, staging and treatment discussion at the meeting. All MDT outcomes are recorded in the electronic patient record.

Key Activity for 2019

The 2019 oncology and haematology MDT activity is shown in the figures below. The number of patients discussed at MDT meetings continues to grow.

MDT Activity

Figure 1 Oncology MDT Activity

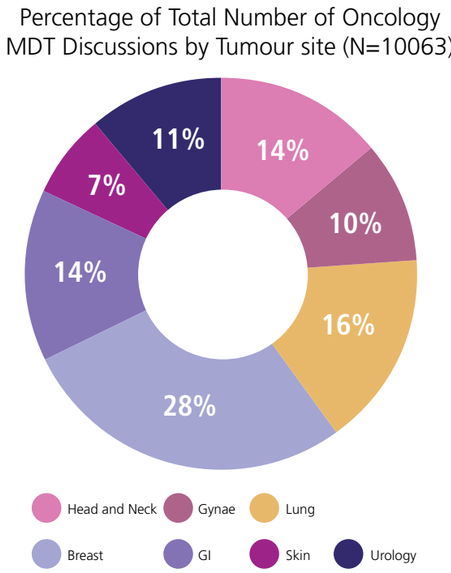


Figure 2 Oncology MDT Monthly Activity

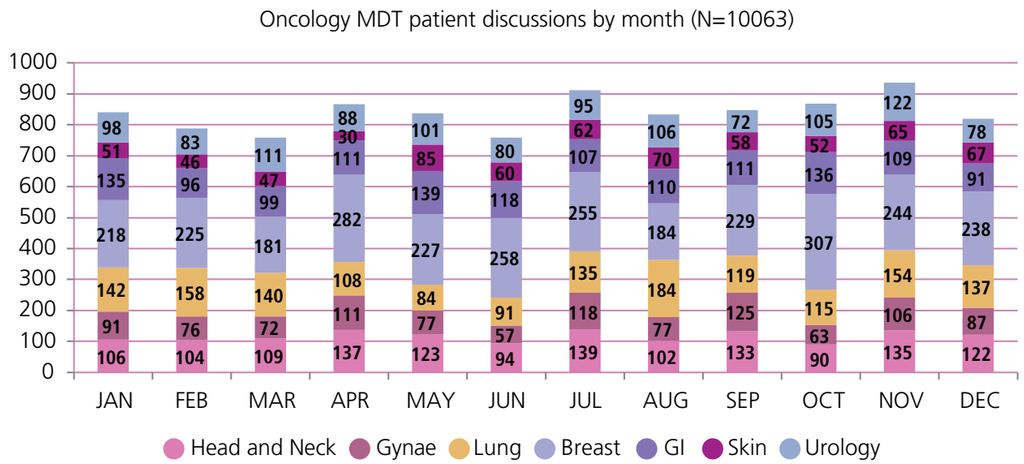


Figure 3 Haematology MDT Activity

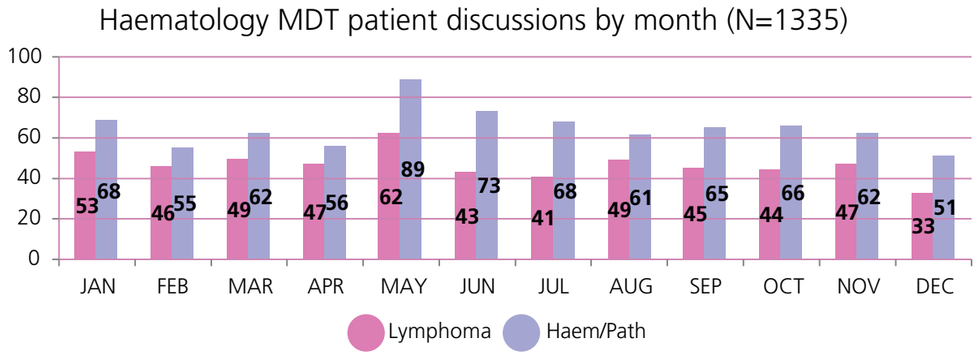
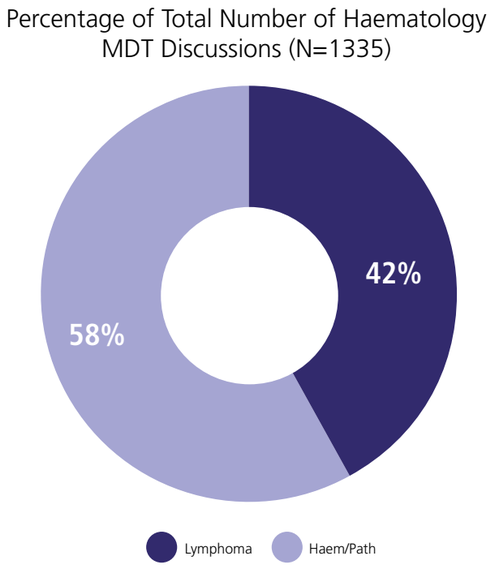


Figure 4 Lymphoma and HaemPath MDT analysis



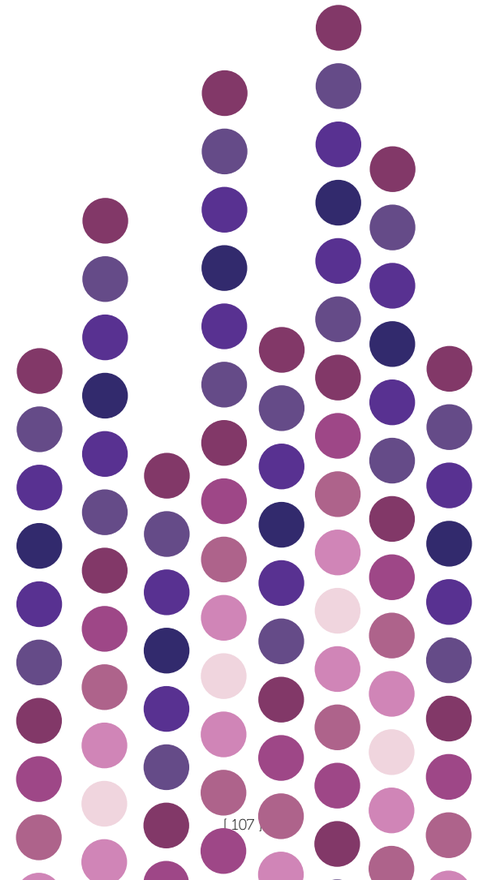
Key Achievements in 2019

- Standardisation of external hospital referral forms for lung cancer MDT
- Development of upper GI (gastrointestinal) MDT discussion and outcome forms in EPR began. This is a collaborative project with input from Upper GI MDT, IMS, HOPe Directorate and the Cancer Institute Programme Office.
- Standardisation of external hospital referral forms
- On-going service and process assessment for each MDT

Key Priorities for 2020

MDT service development is a key priority for 2020 and going forward. Quality improvement projects involve all stakeholders to understand the complexity of processes and hospital pathways and ensure all clinical needs are met. Not all MDT meetings are on EPR yet. This has an impact on how the MDT meeting is coordinated, the resources required to prepare for the meeting and on the capture of data. We plan to have all MDT's captured on EPR using a standardised format as this is a critical juncture in the patient pathway for decision making and data capture.

- Quality improvement plans for 2020 and onwards include;
  - » To define core data set for all MDTs
  - » Develop KPIs for MDTs and patient treatment pathways
  - » To establish an SOP for MDT governance, oversight and review



16 Nursing

16 Nursing

Overview of Service

Nurses caring for patients with a cancer engage with them along a trajectory that includes diagnoses, surgery, radiation, chemotherapy, survivorship and if required, specialist palliative care. The care of these patients is provided by dynamic, educated, competent and caring nurses working across all clinical directorates within St James's Hospital. Nursing Leads include Ms Sharon Slattery Director of Nursing, Ms Amy Nolan, Lead Cancer Nurse and Ms Maria Boyle, Interim Cancer Nursing Education Coordinator.

Nursing teams caring for patients with a cancer diagnosis span all clinical directorates within the organisation and include both inpatient and ambulatory care services. This ensures that high-quality and safe patient care is provided throughout the patient's journey.

Recent OECI accreditation has brought St James's Hospital closer to becoming a Comprehensive Cancer Centre, integrating medicine and science in cancer prevention, treatment and survivorship.

The OECI recognised the excellent nursing care exhibited across the cancer trajectory in St James's Hospital. We continue to work towards the integration of care and foster innovation, leadership and education amongst our nursing team. Nurses working in cancer care continue to represent their speciality and St James's Hospital at both national and international cancer conferences, adding to the body of cancer nursing knowledge, keeping abreast of advances in care and participating in the development of current standards of cancer care.

For many cancer patients, their journey includes radiation and we are proud of the strong nursing relationship with the St Luke's Hospital Radiation Oncology Centre on the grounds of the hospital.

Advancing Nursing Practice

The *National Cancer Strategy 2017-2026* recognises the role that nurses working in advanced nursing posts have in ensuring safe, efficient and effective cancer care. Nurses in advanced practice positions ensure that the cancer patient's healthcare needs are met though impeccable assessment, planning, implementing, coordinating, monitoring, and evaluation of care, all of which are underpinned by appropriate expert knowledge, autonomy, expertise of practice and professional and clinical leadership.

The Registered Advanced Nurse Practitioner (RANP) in Cancer Survivorship provides a nurse-led service which is safe, timely, and evidenced based to patients at an advanced nursing level in dedicated cancer survivorship clinics. The RANP acts as the identified key contact linking and signposting patients to services, resources and supports at different stages along the survivorship trajectory targeted to the individual's needs. Information, encouragement and support are provided in a timely and efficient manner to help patients navigate each phase of the journey with self-management and empowerment as the central focus. The RANP is actively involved in the delivery of self-management programmes for cancer survivors and is currently working with the National Cancer Control Programme (NCCP) to develop a national programme for patients which will provide support, education and advice in the post-treatment period to enhance wellbeing and ease the patient's transition to the surveillance phase. A Treatment Summary and Care Plan is also being developed in conjunction with the NCCP and will be rolled out at national level.

In April 2019, a Thyroid Disease Clinical Nurse Specialist (CNS) post came into being with Ms Claire Scallan appointed to the position. This is a twelve-month post aimed to streamline the pathway of care for patients with thyroid cancer requiring treatment with radio iodine. This is a nurse-led service under the pathway of the hospital and the National Cancer Strategy, providing patient education pre-admission for radio iodine treatment in an out-patient setting, admission for treatment, discharge care, patient support and surveillance.

Bed capacity in ICU increased significantly in 2019 and nursing seized the opportunity to complete a number of quality initiatives:

- Introduction of ICU checklist to enhance the care of cancer patients in the ICU
- Improvements in discharge documentation and planning to improve cancer patient safety and medicine reconciliation during the transition from ICU to the general ward
- Protocols written for (i) tracheostomy care and (ii) peri-operative management of patients after major head and neck cancer surgery with the ear, nose and throat (ENT), plastic surgery and oral facial maxilla surgery (OFMS) teams
- Escalation pathway and audit to monitor and improve patient flow peri-operatively in major cancer surgery.

Patient engagement is paramount in cancer nursing. Ms Amy Nolan, Lead Cancer Nurse, launched a patient focus group during 2019. This focus group is tasked with reviewing the operation of the Haematology and Oncology Day Center (HODC) and identifying opportunities for service improvement. October saw a very successful "Patient and Family Day" for patients and families who have been through the St James's Hospital Bone Marrow Transplant Programme with over 150 people attending.

A nurse-led Melanoma Clinic was established in September 2019 with Ms Karen Delaney appointed as CNS. This role coordinates the patient with a pigmented lesion through the appropriate pathway of care, and in recent times Ms Delaney established a nurse-led day procedure clinic. This clinic was established to reduce the waiting time for removal of skin lesions which are suspicious for melanoma.

Many quality improvement initiatives have been developed since the creation of this exciting role:

- Establishment and maintenance of a melanoma database.
- Patient information booklet developed by the CNS on the following topics July and November 2019
  - » The Role of the CNS in Melanoma
  - » Wide Local Excision for Malignant Melanoma
  - » Sentinel Lymph Node Biopsy for Malignant Melanoma
- Health Promotion initiative, August 2019, sun awareness stand in the main hospital concourse. The team worked in collaboration with the Irish Cancer Society (ICS) Daffodil Centre.
- Melanoma assessment pathway established September 2019 with CNS in melanoma and dermatology team in collaboration with the NCCP with the final document available in 2020.

2019 saw the development of an exciting new advanced nursing post in breast diagnostics. The post was established in the breast radiology service with the support of the NCCP. On completion of training, the Candidate Advanced Nurse Practitioner (cANP), Ms Maeve Stenson, will be proficient in the following ultrasound guided breast care interventional procedures: breast core biopsy, breast cyst aspiration, breast clip insertion and breast/axillary fine needle aspiration. As this is a new role, competency documents were devised in conjunction with the consultant breast radiologists and protocols were written for each procedure. The protocols include key performance indicators to ensure quality practice and to guide clinical audit.

The cANP in breast diagnostics is also involved in undertaking complete episodes of patient care in the Breast Triple Assessment Clinics, including comprehensive assessment, diagnosis, planning, treatment, health promotion advice and discharge of symptomatic breast patients under the supervision of a clinical mentor. The aim of the RANP breast radiology service is to improve patient waiting times for breast interventional procedures and provide safe, evidence-based nurse-led care to patients attending the breast radiology department.

Audit and Research

Audit and research activities are of paramount importance to the nursing team in St James's Hospital and evidence of it are apparent at different levels throughout the hospital.

The St James's Hospital Cancer Nursing Research Group supported by the Trinity Centre for Practice and Healthcare Innovation are working together to increase the hospital's nursing research and audit capacity.

The Breast Care Unit were delighted to have been awarded a Cancer Nursing Research Award from The Irish Cancer Society, in collaboration with the Department of Nursing at Trinity College Dublin (Trinity). This is a nurse-led research project entitled "Development of a Risk Reduction Aid Toolkit for Women with a BRCA Gene Mutation". The Advanced Nurse Practitioner in Breast Care, Ms Yvonne Hanhauser, is the clinical lead for the project with a joint academic lead researcher from the School of Nursing and Midwifery, Trinity College Dublin.

In March, Project Development CNS, Ms Maria Boyle, commenced a number of projects, mainly to examine the current practices and management of the acutely unwell oncology, haematology, radiation oncology and palliative aare patient, who comes through the Emergency Department or Haematology Oncology Day Centre (HODC). A large audit was undertaken across these areas providing invaluable baseline data, the results of which will be available in quarter one, 2020.

The project was supported by funding from the Nursing and Midwifery Practice Development Unit. Collaboration is also ongoing between the HODC, Community Intervention Teams (CIT), Trinity College Dublinand Tallaght University Hospital in examining the impact of CIT support to ambulatory cancer services. This progressive project is led by Ms Eilish Duignan, Clinical Nurse Manager (CNM3) in the HOPe Directorate and Ms Norma O 'Riordan, Assistant Director of Nursing (ADON) in the HOPe Directorate.

The RANP in Cancer Survivorship, Ms Catherine O' Brien, continues to contribute to nursing research that shapes and advances nursing practice, education and healthcare policy at local, national and international levels. A number of research projects have been carried out and/or are on-going in Cancer Survivorship:

- Examination of the role of leadership in promoting a research culture and research capacity amongst cancer nurses in Ireland
- Audit of surveillance programme after orchidectomy for Stage I seminoma testicular cancer in St James's Hospital
- Feasibility study to examine the effects of an eight-week supervised exercise class on a heterogeneous cancer survivor population

An evaluation of the Cancer Survivorship service is needed to ensure the needs of the patients are being met. This will be carried out with the results of the NCCP National Cancer Survivorship Needs Assessment report in mind and in conjunction with the lung surveillance and survivorship service.

In June, focus groups were held in collaboration with University College Dublin (UCD) to explore positive nurse engagement in nursing research following successful participation in the Electronic Symptom Management using the Advanced Symptom Management System (ASyMS) Remote Technology for patients with cancer (eSMART) study. Publication of the findings is pending.

One of the main focuses of the establishment of the RANP in Specialist Palliative Care post was to provide safe, timely, evidenced-based nurse-led care to the ambulatory palliative care population at an advanced nursing practice level. During 2019, RANP in Palliative Care, Mr Rory Wilkinson, started working with colleagues from the Trinity Centre for Practice in Healthcare and Innovation and they are currently undertaking a study in the "Exploration of a Palliative Care Registered Advanced Nurse Practitioner (RANP) outpatient service in an Oncology Day Centre (ODC) in an acute general hospital."

In 2019, the cANP in Breast Diagnostics has undertaken a service evaluation of a radiology database of patients requiring annual mammogram following discharge from breast cancer clinical review. The NCCP mandated that each previous breast cancer patient should have annual mammograms until the age of 70. The purpose of this evaluation is to establish whether the existing database is fit for purpose. The cANP in Breast Diagnostics has also undertaken a patient satisfaction survey in breast radiology in conjunction with the mammography vlinical specialist radiographer.

Education

The personal and professional development of nurses working in cancer care within the hospital is maintained as they achieve competence in their area of expertise on a continuous basis. The provision of Nursing and Midwifery Board of Ireland (NMBI) certified courses help to nurture and retain nursing staff within the hospital. These accredited post-graduate courses are run in conjunction with Trinity College Dublin and examples are listed below:

- Fundamentals of Oncology Programme
- Fundamentals of Haematology Programme
- Introduction to Specialist Palliative Care
- Psych-Oncology Programme
- Foundation in Stoma Care
- Postgraduate Diploma in Cancer Care & Haematology
- MSc in Cancer Care & Haematology
- Weekly Journal Clubs (both medical andnursing facilitated)
- Learning curriculum for critical care oncology and haematology.

The foundation course in Cancer Care and Haematology ran successfully in early 2019 and generated interest both within the hospital and nationally.

A wealth of other educational programmes and workshops are available for staff working in cancer care to assist with professional and personal development.

November saw the first ever Cancer Education Essentials for non-clinical staff. This was held in collaboration with the Trinity St Jaes's Cancer Institute, the Daffodil Centre and psycho-oncology medicine team. Attendees included administrative staff from the oncology and haematology departments, health care assistants, ward receptionists and clinic coordinators. The pilot project was facilitated by Ms Amy Nolan, Cancer Lead Nurse in the HOPe Directorate and Ms. Elaine Connery, Learning and Development Facilitator in The Centre for Learning and Development (CLD). Collaboration also continues between the nurses working in cancer care and the ICS Daffodil Centre to provide on-going patient education and support.

In 2019, Nursing Grand Rounds (NGR) was launched in St James's Hospital to provide nurses with a dedicated forum to share clinical expertise, experiences and best practices in nursing. The CLD ran seven seminars with 14 speakers presenting on a range of topics and drew a total attendance of in excess of 500 nurses. Ms Catherine O'Brien, RANP in Cancer Survivorship, presented her participation in the eSMART project. This was a European-wide nursing study monitoring chemotherapy toxicities and their effect on a patient's quality of life during chemotherapy treatment.

Key Achievements 2019

- Posters presented by Ms. Mairead Ni Chonghaile (Bone Marrow Transplant Coordinator) and Ms. Aileen Smith (CNS Late Effects) were awarded first and second prize respectively at the Haematology Association of Ireland Conference.
- The European Society of Thoracic Surgery (ESTS) held their annual conference in Dublin in June 2019. Ms. Niamh Kiely, Lung Cancer Surveillance and Survivorship RANP presented the finding of a study carried out within the service on 'The psychosocial issues of patients who have had lung resection for primary lung cancer'.
- Ms. Maria Boyle, Project Development Clinical Nurse Specialist, in collaboration with Ms. Elizabeth Breen, HOPe Clinical Pharmacist, presented the findings of an audit exploring dermatological toxicities with Paclitaxel administration in the treatment of Breast Cancer at the Trinity Health and Education International Research Conference Integrated Healthcare: Developing Person-Centred Health Systems. At the conference, Maria also presented a poster entitled "Coordinating care over the telephone: a hidden aspect of care provided by Clinical Nurse Specialists".

Key Priorities 2020

- Development of a new acute oncology haematology CNS role. This role will involve implementation of the planned non-emergency department direct access route for oncology/haematology patients who are experiencing disease or treatment related complications. Cancer services in St James's Hospital continue to support the development of RANP roles in areas such as acute oncology and haematology, cancer survivorship and ambulatory care.
- Continued to collaboration with Trinity College Dublin School of Nursing and Midwifery and St James's Hospital who are building their capacity within nursing to make a more substantial contribution to leading the cancer nursing research agenda in Ireland. Key to this in 2020 is the appointment of a Nursing Professor in Cancer Care as a joint appointment between the two organisations. The Nursing Professor in Cancer Care will have a dual role of facilitating and leading on establishing and progressing a strong nursing research base within the hospital and being proactive in the strategic planning and implementation of cancer nursing. It is foreseen that as part of this strategy, cancer nurses will be encouraged and facilitated to undertake masters and doctoral programs to further strengthen the nursing research agenda within the hospital.
- The first Fundamentals in Oncology Education Course is planned to take place in quarter 1 of 2020. This course will provide insight into advanced cancer management for all multi-disciplinary colleagues. Already this course has generated interest nationally from large acute general hospitals and the pharma industry.
- A qualitative research study, in collaboration with TCD, exploring the experience of patients on cancer treatment attending for unscheduled care and the experience of staff who care for these patients, is due to commence in 2020. It is hoped the study will inform the development of a new acute oncology haematology service.
- Planning has also commenced from a nursing perspective for the roll out of a Chimeric Antigen Receptor (CAR) T-cell therapy programme in the hospital. This is another exciting development in the treatment of patients with haematological malignancies.
- St James's Hospital is dynamic and exciting healthcare campus with a large complement of highly competent and skilled nurses working in cancer care. This care spans across all of our Clinical Directorates with nurses engaging and working collaboratively alongside other MDT professionals. The focus of nursing care is and will continue to be on quality, research, education and clinical competence.

17 Pharmacy

17 Pharmacy

Overview of Service

Introduction
Cancer activity represents approximately 30% of the clinical activity of the hospital on a daily basis, and this is increasing. The hospital is a tertiary referral centre for lung, breast, oesophageal, gastric, urology, colorectal, head and neck, gynaecological, melanoma, radiation oncology and haematological cancers. The Stem Cell Transplant (SCT) Unit consists of the National Adult Allogeneic Transplant Programme, including matched unrelated donor transplants for Northern Irish patients, and an Adult Autologous Transplant Programme.

The pharmacy department provides a full suite of pharmaceutical services to the hospital. These include Pharmacy Procurement, Medicines Management, Clinical Pharmacy Services including specialist areas such as infectious diseases, intensive care, psychiatry and antimicrobial stewardship. Together with aseptic compounding and a team of pharmacists and technicians, pharmacy clinical cancer services and aseptic compounding is provided for cancer patients attending the hospital.

Clinical Service

Day care unit
The cancer pharmacy team are located on the haematology/oncology day ward.

Pharmacists clinically verify Systemic Anti-Cancer Therapy (SACT) prescriptions in accordance with national and international best practice standards. The hospital will implement the National Cancer Information System (NCIS) in 2021. This system includes e–prescribing, verification and compounding programmes for SACT.

We provide a medicines information service for our nursing and medical colleagues to support staff in caring for our patients.

Cancer pharmacists liaise closely with colleagues in aseptic compounding around planning and confirming SACT and we endeavour to provide same day treatment for patients who require dose modifications on the day of clinical review.

Regular operations meetings with nursing, pharmacy and administration staff arescheduled to ensure continuous review and improvement to the patient flow within the day care unit.

Inpatient service
The inpatient clinical pharmacy service is shared between the Donal Hollywood ward and the Denis Burktitt ward. Pharmacists are responsible for:

- Clinical verification and coordination in the planning of SACT for elective and emergency patients
- Pharmaceutical review of inpatient drug charts on the electronic patient record (EPR)
- Education and training to support our medical and nursing colleagues on the inpatient service.

Transplant activity

Transplant pharmacists attend the SCT weekly planning meeting where upcoming patients and their conditioning regimens are discussed. We also attend weekly multidisciplinary team meetings where current patients undergoing SCT and other haematology inpatients are reviewed.

Transplant pharmacists co-ordinate discharge planning and provide medicines education to all SCT patients prior to their discharge. It is important patients understand why they are taking particular medications and this education helps to ensure safe and appropriate use of medications in the post-transplant recovery.

Transplant pharmacists coordinate the production and review of SCT conditioning protocols, pre-populated drug charts and other guidelines as appropriate in accordance with Joint Accreditation Committee (JACIE) accreditation standards. This helps to support medical and nursing staff in safe prescribing and administration of conditioning and supportive care regimens.

Clinical Trials

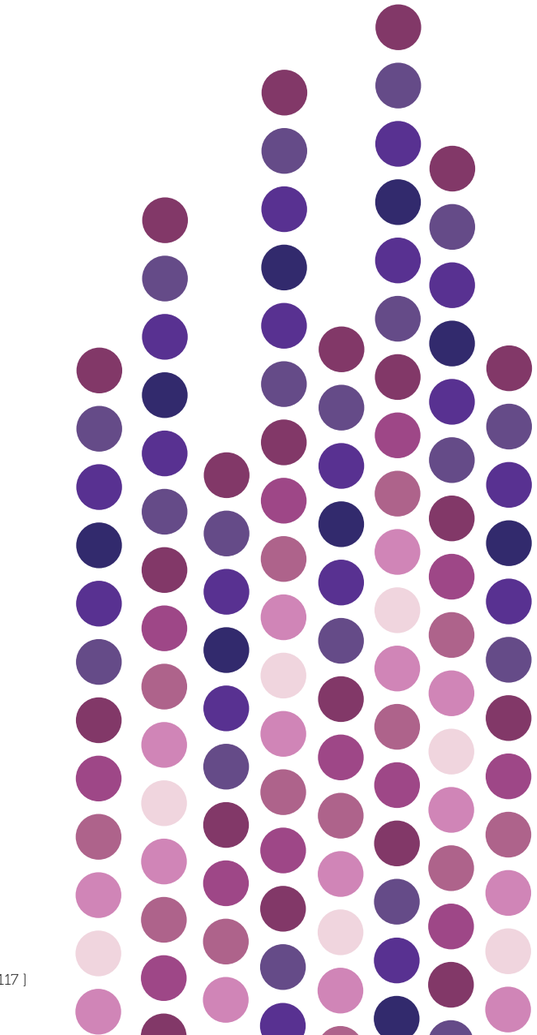
Each cancer pharmacist is responsible for the pharmacy elements of a number of cancer clinical trials. We also have dedicated pharmacy staff who co-ordinate the initiation, day-to-day management and record keeping, aseptic compounding and close-out of cancer clinical trials.

Achievements 2019

- Commencement of work on NCIS project
- Commencement of engagement in CAR-T (Chimeric Antigen Receptor (CAR) T-Cell Therapy) project
- On-going pharmaceutical management of over thirty clinical trials
- Aseptic compounding unit released over 27,000 items
- Pharmacist completed an MSc in Hospital Pharmacy with Trinity College Dublin

Objectives for 2020

- Prepare for the implementation of NCIS
- Prepare from a pharmacy perspective for the introduction of a CAR-T program in St James's Hospital
- Maintain all key activities despite the potential disruption and challenges posed by the COVID-19 pandemic



18 Psychological Medicine

18 Psychological Medicine

Overview of Service

Patients with cancer seeking care at St James's Hospital benefit from the presence at St James's Hospital of a Psychological Medicine Service that is fully integrated with medical and surgical teams. Furthermore, it is a true MDT, providing expertise from psychiatry and clinical psychology as well as senior clinical nurse specialists trained in both physical and mental health.

While the core team includes a consultant psychiatrist, CNS and clinical psychologist, the wider psychological medicine service also provides input and expertise as needed. The wider team includes three consultant psychiatrists, three clinical psychologists (operating at principal level), four clinical nurse specialists, four psychiatry trainees and two dedicated administration staff. The service has retained staff over the past 20 years with a resultant accumulation in expertise and a network of working relationships both within the service and across the hospital. The model of psycho-oncology care developed at St James's Hospital has been incorporated into the national strategy for cancer care delivery.

The psycho-oncology service is based on the main hospital campus. The team is available both for acute, emergency consultations and elective reviews. The team provides care for inpatients, outpatients, the Emergency Department and the Day-Ward. Training, education and consultation are also provided to oncology, haematology and cancer surgery staff.

Some patients require only a single assessment, for example review prior to surgery. Others, with more complex psychological needs, may require longer-term follow-up and intervention. Because of the wide range of clinical expertise, both psychological treatments and psychotropic medications can be provided as needed, so that patients benefit from seamless, combined care.

Key Activity in 2019

The Psychological Medicine service provides care for all cancers – haematology, oncology, medical and surgical cancer patients. The list below highlights some of the services provided:

Inpatients:

- Head and neck cancer patients – post-operative assessments
- Bone marrow transplant patients – pre, peri and post-transplant assessments and treatments
- Gynaecological cancer patients – post-op care
- Colo-rectal cancer – post-op care
- Upper GI cancers – post-op care
- Medical Oncology – pre, peri, and post care
- Radiotherapy peri-treatment care

Day-Ward

- Integrated care on-site in the HODC. Particular issues include:
  - » steroid-induced hypomania
  - » acute distress/adjustment disorders

Outpatients

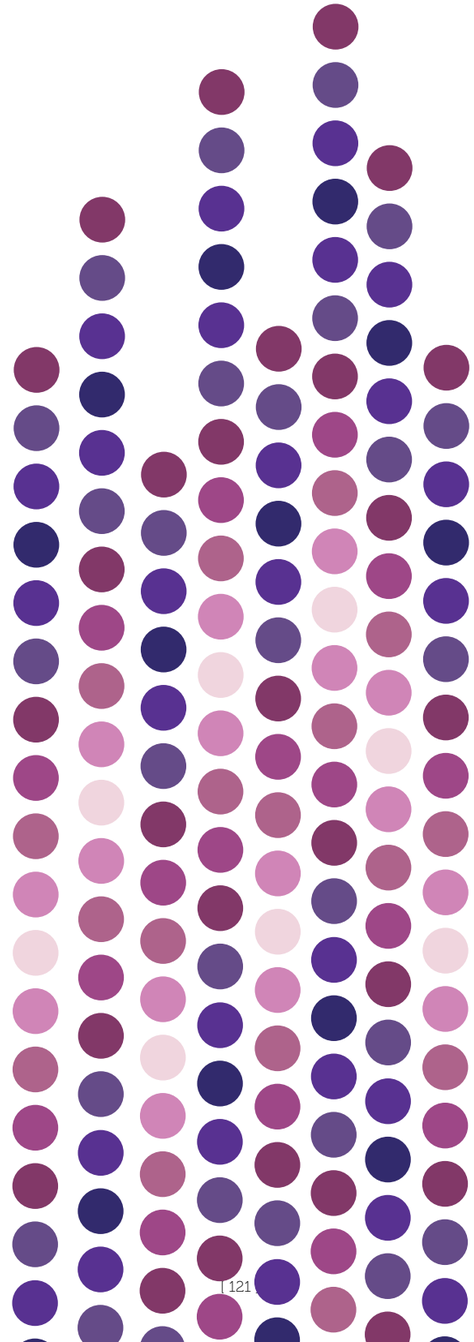
- Cancer genetics – assessment for BRCA positive patients pre–op
- Persistent mood disorder post-cancer surgery or chemotherapy
- Radiation Oncology OPD liaison

Key Achievements in 2019

- Integration of the St James's Hospital Psycho-Oncology service delivery model by the NCCP for the development of psycho-oncology services nationally
- Input of staff from the St James's Hospital service in implementing the national psycho-oncology strategy
- Further development of the radiation oncology specialist service
- Development of management expertise within the service and the appointment from within the psychological medicine service of the lead for service delivery within the HOPe Directorate.

Key Priorities for 2020

- To improve the environment for the provision of clinical services.
- There is a need for a senior psychiatry trainee (Senior Registrar) within the service to ensure the continued development of psychiatric expertise for cancer patient care
- The development of methods to capture service activity. One of the strengths of the service 'on the ground' has been its flexibility in responding to patient need, for example seeing patients on the HODC while they attend their haematology-oncology appointment rather than requiring them to attend a separate Psycho- Oncology OPD. This approach, while promoting a flexible clinical approach, has meant that much of the service activity is not measured. With the activation of the EPR, there is now the possibility of capturing activity in a more practical manner and this will be a focus over the next year.



19 Radiation Oncology

Overview of Service

The St James's Hospital campus houses the St Luke's Radiation Oncology Centre for Radiation therapy, which is part of the St Luke's Radiation Oncology Network (SLRON). The network operates from three locations; St Luke's Hospital (SLH), Rathgar, St Luke's Radiation Oncology Centre (SLROC) at St James's Hospital (SJC) and SLROC at Beaumont Hospital in Dublin. The center at St James's and Beaumont Hospital opened in March 2011 following an investment of 60 million euros by the National Cancer Control Programme (NCCP).

Since 2011, there has been a steady increase in both the number of patients attending the SLRON SJC and in the complexity of the treatments delivered. The centre houses four state of the art treatment linear accelerators (LA), two CT scanners and one MRI unit. It provides total body irradiation (TBI) for haematology patients attending the National Stem Cell Transplantation Centre. In addition, the national stereotactic ablative radiotherapy (SABR) programme, treating patients with early stage (usually medically in-operable) lung cancer has been operational in SJC since March 2014. In 2016, the service was awarded a Certificate of Compliance with the Novalis Standard for Stereotactic Radiosurgery (SRS) and Stereoablative Body Radiotherapy (SABR) Programmes.

There are seven consultant radiation oncologists who work within the SLRON St James's entre providing a radiotherapy service for St James's Hospital (Dr Charles Gillham, Dr Moya Cunningham, Dr Sinéad Brennan, Dr Pierre Thirion, Dr Patricia Daly, Dr Naomi Lavan and Dr Fran Duane). All consultants provide a comprehensive in-patient consultation and out-patient department (OPD) service, and collectively attend all the hospital's oncology MDT meetings. Nursing support from St James's Hospital is provided by Ms. Anne O'Hara. There are 12 designated radiation oncology in-patient beds in St James's Hospital which first opened in February 2014.

Clinical Leads are Dr Clare Faul, Clinical Director, St. Luke's Radiation Oncology Network
Margaret Keaveney, Acting RTSM, St Luke's Radiation Oncology Network
Laoise Ryan, Interim General Manager, St Luke's Radiation Oncology Network

Patients referred to SLRON SJC also have access to specialist treatments across the network, such as pelvic brachytherapy, prostate seeds brachytherapy and ocular brachytherapy in SLRON Rathgar and SRS intra-cranial and SABR prostate and spine in SLRON Beaumont.
The SLRON Clinical Trials Unit oversaw nine clinical trials in SJC in 2019. 29 SJC radiotherapy patients were recruited during this period.

Key Activity

Table 1 Radiation oncology activity analysis

Year	Number of New Treatment Starts	Number of Fractions Delivered	% of Treatments that are VMAT*	SABR Treatment (No of Patients)	SABR Treatment (No. of Fractions)	TBI Treatment (No of Patients)	TBI Treatment (No. of Fractions)
2012	823	19,303	10%	N/A	N/A	Not available	Not available
2013	1160	23,127	27%	N/A	N/A	Not available	Not available
2014	1450	26,322	30%	35	156	Not available	Not available
2015	1407	24,887	50.8%	56	259	18	103
2016	1395	26,036	73.3%	75	360	24	128
2017	1377	23,463	74.3%	139	754	17	89
2018	1445	21,676	76.6%	128	669	20	124
2019	1427	21,910	79.2%	171	880	12	67

*VMAT: Volumetric Modulated Arc Therapy: Focuses the radiation on the tumour while protecting healthy tissues. Faster treatments improve the accuracy of radiation delivery, in addition to improving patient convenience and quality of life.

Key Achievements in 2019

RapidPlan

- First Irish radiotherapy centre to develop and implement RapidPlan treatment planning for Stereotactic ablative radiotherapy (SABR) lung patients
- RapidPlan significantly reduces planning times, improves consistency in planning and streamlines staff training

HSE Quality Excellence Awards

- 36 posters were entered in 2019 to the HSE Quality Excellence Awards, six awards were received for poster presentations and four awards were received for staff champions
- Awards allow for learning and sharing of expertise among the different disciplines involved in the patient's care

Stereotactic ablative radiotherapy (SABR) programme (only public hospital in Republic of Ireland to provide this critical service).

- Completion and review of a motion management study involving SABR lung patients.
- Results showed that effective motion management in this cohort of patients reduces imaging needs and improves treatment efficiencies.

Deep-Inspiration Breath Hold

- 2019 saw the continued use of deep inspiration breath-hold treatment planning and delivery for breast (introduced in May 2016) and lymphoma patients which aims to reduce the heart toxicities and lung doses received from the treatment.

Internal Mammary Node irradiation

- Further developed the planning, treatment delivery and imaging procedures for this patient cohort. Improving conformity and reducing toxicities.

UV tattoo pilot project

- The rationale of the trial was to seek out a new tattooing system that improves cosmetic outcome for patients while maintaining treatment set-up accuracy and treatment time is desirable
- Trial investigated the efficacy of UV tattoo ink as an alternative to black Indian ink tattoo for the application of patient positioning marks for radiotherapy

Patient Feedback

SLRON is committed to ensuring feedback in the form of comments and compliments, and complaints are acknowledged, reviewed and acted upon. SLRON have an open door approach to feedback and actively encourage patient feedback. Learning from this feedback is shared with relevant staff and recommendations resulting from such feedback are followed up on. This helps us to direct our future quality improvement projects/initiatives.

Patient Safety

Patient safety is the cornerstone of high-quality health care and we must do all that we can to ensure patient and staff safety when providing or receiving care. This is consistent with our ethos of "patient-centred care". Patient and staff safety continues to improve in our hospital through a robust electronic reporting system, clear governance for the management and escalation of incidents, and clear governance of patient safety via the Quality, Patient Safety & Risk Department.
SLRON has a long history of an active multi-disciplinary approach to the reporting and management of incidents, near misses, concessions and non- conformances.
Serious incidents are managed in line with HSE Incident Management Framework which includes triggering urgent escalation and action for serious incidents.

The radiotherapy incident learning system at SLRON borrows from incident learning approaches successfully implemented in the aviation and nuclear power industries. The purpose of the radiotherapy incident learning system is to propagate a learning culture within SLRON, where identification and investigation of past incidents and incident trends can be used to take corrective action to prevent the occurrence of future errors. The radiotherapy incident learning system can be considered a cyclical process, aimed at continual strengthening of the risk management matrix, through the promotion of a culture of active learning and continuous quality improvement.

Radiotherapy incident learning takes the form of 'Departmental Incidents' as a standing item on staff meeting agendas, regular local and network incident learning meetings, a quarterly radiotherapy incident newsletter and presentations to relevant disciplines.

Through the radiotherapy incident learning system, SLRON complies with:

- Legislative requirements in relation to mandatory reporting under EU Basic Safety Standards for protection against dangers arising from medical exposure to ionising radiation Regulations 2018 (S.I. No. 256 of 2018) and Radiological Protection Act, 1991 (Ionising Radiation) Regulations 2019 (S.I. No 30 of 2019)
- Standards for safe care and support as laid out in the report National Standards for Safer Better Healthcare (HIQA, 2012).

Risk Management

The purpose of risk management is to improve safety and quality by proactively identifying risks and reducing their potential impact to the greatest extent possible. In SLRON, staff are encouraged and trained to identify, manage and where appropriate, notify risks to senior management.

The management and monitoring of a risk register is an on-going process undertaken by the Quality Patient Safety & Risk Management (QPSRM) subcommittee and individual departments.

The QPSRM subcommittees are responsible for the management of incidents, risk assessment and audits (internal & external) for the areas under their remit. In addition, these committees are responsible for compliance with:

- HIPCAD: Hand Hygiene, Infection Prevention & Control, decontamination, Healthcare acquired Infections and flu vaccine
- Health and Safety: Mandatory health and safety training, occupational health and wellbeing
- Corporate: GDPR, Data Protection, Children First (National Guidance for the Protection and Welfare of Children (2017), document management, ICT
- Clinical Risk: medication safety, open disclosure, national clinical guidelines
- Radiation safety: HIQA, Environmental Protection Agency

The introduction of new/upgraded equipment, software or treatment techniques is managed to best national and, where applicable, international standards. In radiotherapy, prospective multidisciplinary failure mode and effect analyses are undertaken for all new technologies or techniques introduced.

Each is Quality Assurance in Radiotherapy (QART) approved. This comprehensive review ensures that every step of implementation is identified and that development or review of relevant policies and procedures is completed before the introduction of the new service, technique and so on.

Despite a continuous increase in demand for radiotherapy services, SLRON is committed to providing safe, high-quality care and continues to ensure that this is central to everything that we do.

At times, the care provided in SLRON can fall below the accepted standard and also the standards we set for ourselves. However, the robust structures and processes we have in place to identify when this happens ensure we can respond quickly and transparently and can implement appropriate corrective measures, minimising the risk to our patients. Our fundamental core is a transparent, high-quality learning organisation which focuses on patient-centred care.

Key Priorities for 2020

Over the next 12 months, SLRON SJC will be focusing on the following projects:

- Continued development of our motion management techniques for our SABR lung patients
- Further expansion of our SABR service to oligo-metastatic sites
- Purchase of surface guided radiotherapy technology for use with motion management breast, thoracic and SABR patients
- Planning for replacement of our linacs and CTs
- Consider additional hypo-fractionated treatment regimens to improve linac capacity
- Further use of RapidPlan for other patient groups
- Increased recruitment of SJC patients to SLRON clinical trials
- Continue to offer Total Lymphoid Irradiation treatment service
- Improve data integration with St James's Hospital through engagement in the development of a streamlined system for the capture and sharing of patient feedback, clinical incidents, risks and quality issues for patients attending SLRON within the TSJCI
- Facilitation and implementation of OECI recommendations related to continuous improvement in patient care within SLRON as a member of the TSJCI.

20 Radiology

Summary Overview

The DiagIm Directorate (Department of Diagnostic Imaging) provides a diagnostic imaging service to the patients and clinicians of St. James's Hospital. Imaging services provided includes CT, MRI, ultrasound, breast imaging, nuclear medicine, PET/CT, interventional radiology and general X-ray.

The Department of Diagnostic Imaging provides all imaging modalities and has expanded considerably in recent years. Staffing includes 15 consultant radiologists, 76 radiographers, 13 nurses and 12 specialist registrars. The department performs approximately 180,000 examinations per annum and a significant amount of the complex departmental activity relates to oncology.

Over the last decade, the department has expanded with the opening of a PET/CT service, expansion of clinical MRI from one to three units, CT from two to three units and mammography from two to three units. Other developments have included the opening of a research facility with a high strength MRI, installation of two SPECT/CT units and a new interventional room. There have also been 3 new consultant radiologist appointments.

The department provides both an urgent and routine oncology imaging service and all turnaround times are within HSE and NCCP guidelines. The department provides full support to all cancer MDTs, which now represent a substantial workload. The centralization by the NCCP of oncology care has led to a significant increase in workload for the radiology department. A service is also provided to GP's in the catchment area as well as tertiary care to hospitals outside the catchment area.

The department has very well-developed academic structures with established links to TCD and the Faculty of Radiology. A training programme for specialist radiology registrars is delivered in addition to on-going clinical training of undergraduate and postgraduate radiography students.

Key activity

Key achievements 2019
PET/CT using Ga-68 based radiopharmaceuticals:
In 2019, the PET/CT Department introduced PET/CT using Ga-68 based radiopharmaceuticals (PSMA and Somatostatin receptor imaging). The PET/CT unit at St. James's is now the only national centre offering PET/CT using Ga-68 based radiopharmaceuticals. Previously, prostate cancer patients had to travel overseas for PET/CT PSMA imaging. It is planned to develop this service further over the next few years by introducing new radiopharmaceuticals and further integrating PET/CT into radiation oncology planning.

Breast Imaging:
The demand for routine breast imaging (mammography and ultrasound) has risen significantly in recent years. During 2018, expansion of the Breast Imaging Department was undertaken to provide additional mammography capacity. A 3rd mammography unit was installed and an existing mammography unit was replaced. The completion of these works by the end of 2018 provided increased mammography capacity in 2019.

Expansion of CT services:
The demand for CT services for oncology continues to increase per annum. During 2018, a 3rd CT scanner was installed and an existing CT scanner was replaced. CT activity increased by 18% in 2018 and by a further projected 21% in 2019. Overall, CT activity in 2019 will have increased by approximately 42% since 2017.

Radiography Education:
In 2019, a graduate entry MSc in Diagnostic Radiography programme commenced at TCD. This new programme was developed and is primarily managed by radiography staff at St. James's Hospital. A key driver for setting up this programme is the national shortage of diagnostic radiographers and the requirement to train more radiographers to deliver diagnostic imaging services. Students on this programme attend clinical placements at St. James's.

Figure 1: CT Demand and Activity

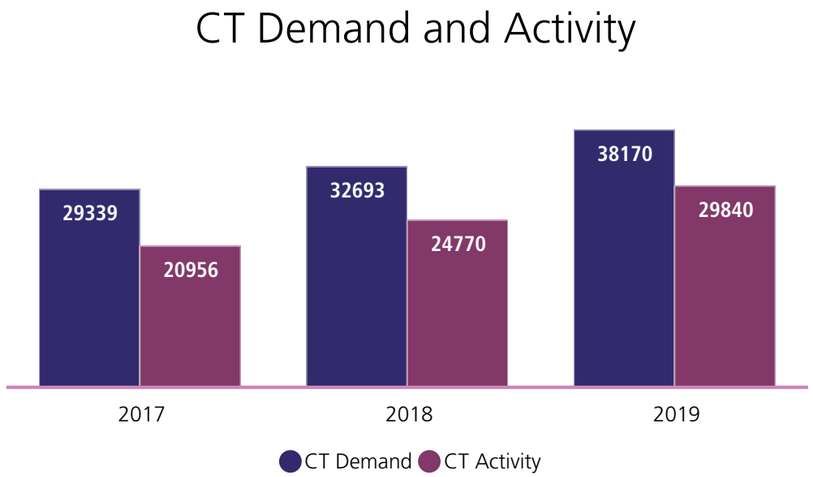


Figure 2: MR Demand and Activity

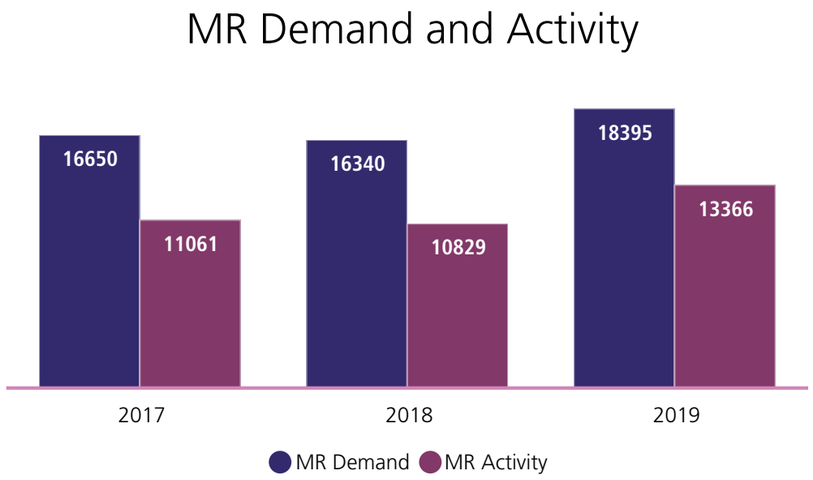


Figure 3: Ultrasound Demand and Activity

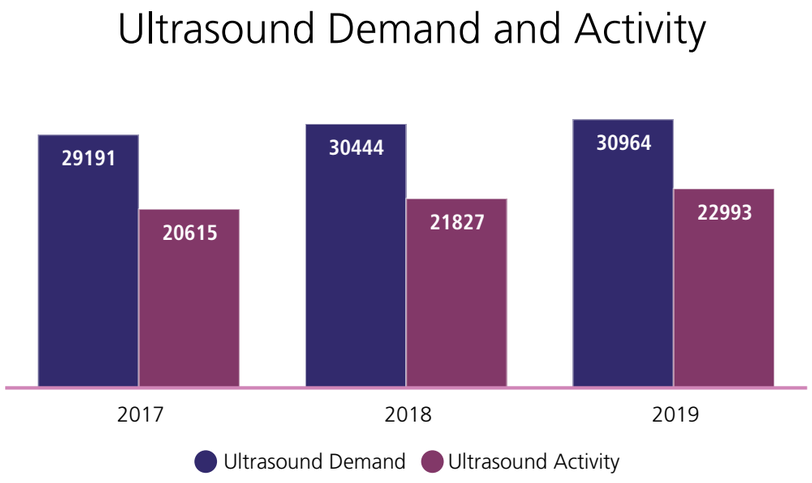


Figure 4: Mammography Demand and Activity

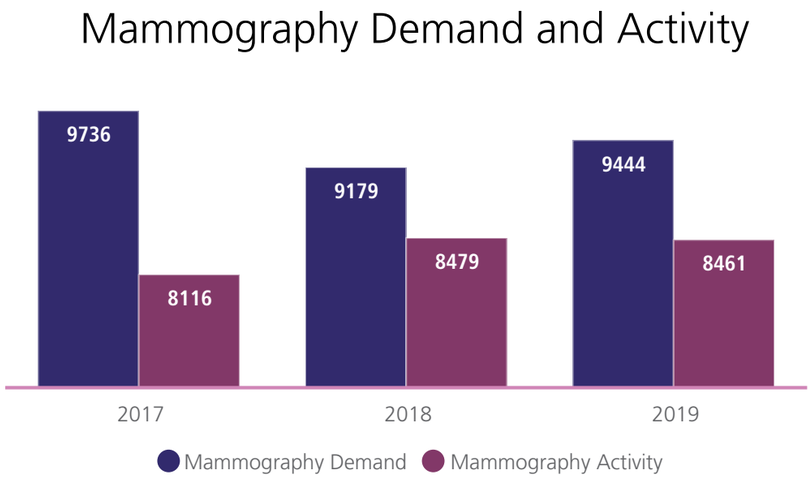
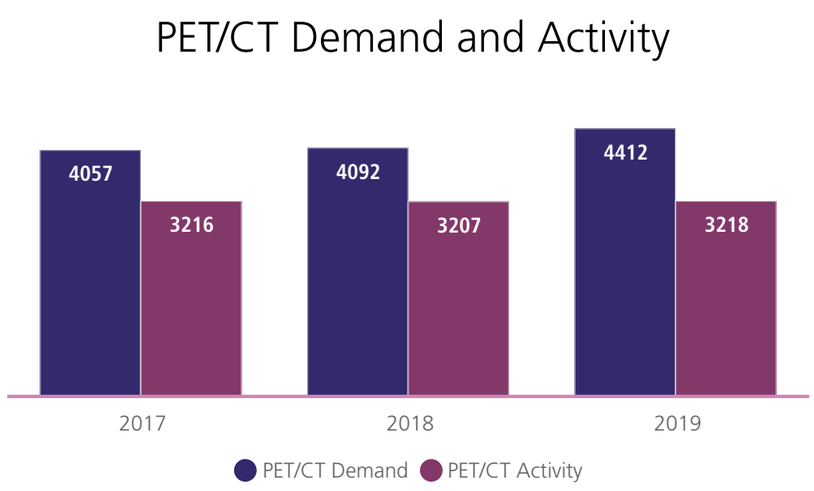


Figure 1: CT Demand and Activity



Key priorities 2020

Expansion of PET/CT services:
The PET/CT unit opened in 2009 with one scanner and has become the busiest PET/CT unit in the country performing up to 14 examinations per day. Approximately 40% of these patients are referred from outside the SJH cancer network. The current PET/CT scanner will be replaced in 2020 with a new scanner offering improved acquisition times and providing increased PET/CT capacity. PET/CT demand continues to increase annually. Opportunities exist to develop the service further over by increasing PET/CT PSMA capacity and introducing new radiopharmaceuticals. It is hoped that funding for a 2nd PET/CT scanner will be approved in the future to provide additional capacity to support these service developments.

Reconfiguration of Ultrasound:
In 2020, the ultrasound department will be reconfigured to provide additional ultrasound procedure rooms and a recovery area. These works when supported by staffing resources will provide increased capacity for oncology imaging and procedures. Also, reconfiguration of the layout and design of the General Ultrasound department will improve patient privacy and comfort with separate waiting, changing and reception areas.

MRI initiatives to increase capacity:
The demand for MR services at St. James's Hospital has increased at an average rate of approximately 10% per annum since 2011. In 2020, it is proposed to extend the weekday service of the main MR Department to provide increased capacity to meet increased MR demand. The additional staffing resources required to support this extended working day will be supported on temporary basis (12 months) by NTPF funding.

Increased prostate imaging and biopsy
The demand for prostate imaging and intervention has increased based on updated NCCP guidelines placing radiology at the forefront. A new radiology colleague will increase this capacity.

Adapting to post covid imaging expectations
Many cancer groupings have changed their approach to evaluating suspected cancer patients, notably head and neck oncology. Radiology will aim to accommodate this increase in advanced imaging requirements.

New Consultant Radiologist appointments

21 Health and Social Care Professionals

21 Health and Social Care Professionals

(Speech and Language, Medical Social Work, Clinical Nutrition, Occupational Therapy and Physiotherapy)

Overview of Service

SCOPe Health and Social Care Professionals (HSCPs) have a critical role in supporting people affected by cancer. While each discipline has uniquely different roles, they also have common themes within their working practice. SCOPe has significant positive impact in many areas including quality of life, physical fitness, wellbeing, mental health, fatigue, communication, mobility, function, nutritional status and pain management.

Clinical Nutrition:
Clinical Nutrition are involved in multi-disciplinary team treatment of cancer patients, across specialities including head and neck cancer, GI surgery and lung cancer, throughout the patient pathway from diagnosis to survivorship or palliation.

Medical Social Work (MSW):
MSW focus on the psychosocial aspects of patient care, their families, including children. They provide comprehensive assessment of patients' psychological and social needs, provide counselling for patients and families, and offer practical advice and information. MSWs advocate for patients and liaise with community services to facilitate effective discharge planning and aftercare.

Occupational Therapy (OT):
Occupational Therapy is involved as a key member of the MDT team throughout all stages of a patient's cancer journey. The role of occupational therapy in cancer care is to facilitate and enable individuals to achieve maximum functional performance, both physically and psychologically, in everyday living skills.

Physiotherapy:
Physiotherapy has a key role for patients throughout their cancer journey. The primary goal is to assist the person with cancer in achieving maximum physical functioning within the limits imposed by their disease and/or treatment. Exercise reduces the risk of cancer recurrence and mortality.

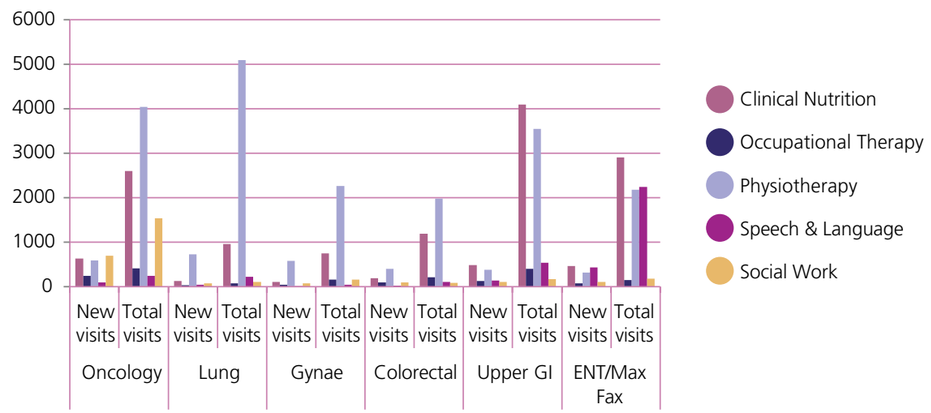
Speech and Language Therapy (SLT)
The Speech and Language Therapy Department is committed to providing safe care to all cancer patients. The majority of SLT referrals are for head/neck cancer and radiation oncology patients.

Key Activity in 2019

Figure 1 describes 2019 SCOPe HSCPs New & Totals visits for Oncology, Lung: Gynae; Colorectal, Upr GI & ENT/Max Fax

Clinical Nutrition:
- Temporary senior dietitian approved for head and neck cancer surgery patients
- Increased patient numbers discharged on enteral nutrition, optimising nutritional status and enabling patients to go home and remain at home during treatment
- Audit of home enteral feeding in medical oncology over a 10-month period completed

Figure 1 SCOPe HSCPs Activity



- Involvement in OECI accreditation audit in 'supportive care and survivorship'
- Quantitative research into the dietary and living experience of people with an Ileostomy.

Medical Social Work:
- Chairperson and education officer roles in the Irish Oncology Haematology Social Workers Group (OHSWG)
- Represent OHSWG at the National Psycho-Oncology Advisory Group with involvement in the development of a model of care for all oncology patients
- Chemotherapy education sessions in conjunction with the Irish Cancer Society Daffodil Centre.
- CLIMB programme, group work programme for children who have a parent with a cancer diagnosis
- Clinical audit completed: MSWs assessment of oncology outpatients
- Oncology Haematology MSW patient leaflet.

Occupational Therapy (OT):
- Delivery of evidence based individualised self-management programme focussing on the topics of return to work, fatigue, energy conservation, anxiety and sleep hygiene
- Involvement in OECI accreditation audit in 'supportive care and survivorship'
- Involvement in inaugural "Survivorship" information evening for cancer patients in Mercer's Institute for Successful Ageing (MISA), St James's Hospital.

Physiotherapy:
- A prehabilitation programme (OpFit) was developed to improve patients' fitness before cancer surgery. It was awarded best proffered talk and poster at the Irish Association of Cancer Research (IACR) 2020 Annual Conference and was a finalist in the HSE Excellence Awards.

Speech and Language Therapy:
- Approval for temporary senior SLT in head/neck oncology leading to improved service provision
- Commencement of emergency mobile phone service for laryngectomy patients
- Support from Upper GI consultants for resourcing additional SLT staffing
- Provision of undergraduate and post-graduate training

Key Priorities for 2020

Clinical Nutrition:
- Secure senior dietician post in in head and neck cancer surgery
- Appropriate timely nutrition assessment and intervention for patients attending HODC. From OECI accreditation feedback, patients at nutrition risk should be identified on presentation to HODC with appropriate individualised nutrition care plans implemented. This remains a challenge
- Secure recommended dietetic staffing level for cancer patients in critical care.

Medical Social Work:
- On-going self-care initiatives given the emotionally demanding nature of the work in HOPe.
- Re-audit of MSWs assessment of oncology outpatients to ensure improvement in this area as recommended by initial audit.
- Aim to reduce outpatient waiting lists with current staffing levels; this would include management of Electronic Patient Record (EPR) patient lists more effectively.
- Aim to secure funding for resources for patients at end-of-life, including memory making resources and children's books.
- Further training in the area of end of life care for all MSWs on the HOPe team.

Occupational Therapy:
- Maintain focus on further establishing our role in the areas of fatigue management and cancer survivorship, in line with evidence based practice.
- Delivery of the "OPTIMAL" programme to cancer survivors, measuring both its clinical effectiveness and patient satisfaction. "OPTIMAL" is a six-week group programme aimed at assisting people to effectively transition from treatment to survivorship.
- We aim to continue to explore the benefits of an occupational therapy out-patient service.
- Promote post-graduate education in cancer survivorship.

Physiotherapy:
- In keeping with evidence-based practice, we are committed to building on our role in the area of exercise, cancer and survivorship.
- Investigation into the effectiveness of prehabilitation for patients before they embark on active cancer treatment will continue.
- Secure permanent funding for prehabilitation clinical specialist physiotherapy post. Exercise in preparation for surgery is associated with a lower postoperative complication rate, shorter length of stay and earlier restoration of functional status.
- Expand lymphoedema service with support from HSE funding.

Speech and Language Therapy:
- Staffing resources required to include the retention of SLT current temporary senior in head/neck oncology.
- To progress business cases for the approval of dedicated staffing for upper GI and medical oncology specialty areas.
- To continue to promote education and training at undergraduate and postgraduate levels and encourage ongoing Quality Improvement (QI) initiatives where staffing resources allow.

22 Specialist Palliative Care Service

22 Specialist Palliative Care Service

Summary of Service

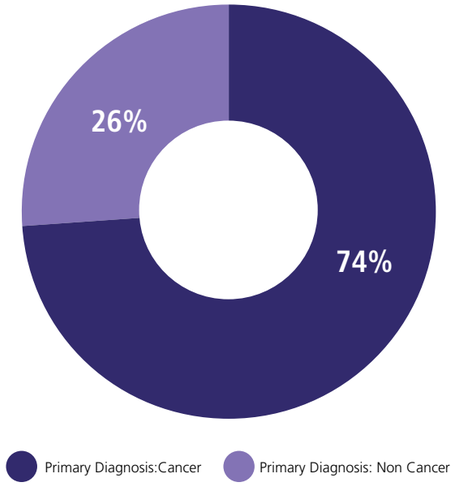
The Specialist Palliative Care Service in St James's Hospital was established in 1995.

It is a support service for all patients in St James's Hospital deemed to have specialist palliative care needs, whether they have malignant or non-malignant diagnosis. 70% of the team's workload comprises of referrals for patients with a malignant diagnosis.

The team comprises of two medical consultants, Dr Norma O'Leary and Dr Lucy Balding, (23.5 hour commitment), a registered Advanced Nurse Practitioner (Mr Rory Wilkinson), a fulltime medical registrar, four WTE clinical nurse specialists (M Martina Thuillier, Mr Stephen Mc Dermott, Ms Claire Kelly, unfilled position), a medical social worker (Ms Alison Brennan) and 0.5 WTE administration support (Ms Jennifer Ryan).

The direct administrative supervision and governance of the service is conducted through the HOPe Directorate. The strategic policy direction of the service is in line with the HSE National Clinical Programme for Palliative Care. A weekly MDT meeting is held where all patients referred to the service are discussed and a plan of care agreed. Joint palliative medicine/oncology psychosocial meetings are held twice weekly.

Figure 1 Referral to Specialist Palliative Care Service



A consultation service is provided to hospital inpatients. There has been more than a 20% increase in referral rate since 2010. On average 16 new referrals are received weekly. The majority of patients referred to the service are discharged with community palliative care team support. The service is closely aligned with Our Lady's Hospice & Care Services.

Figure 2 Palliative Care Activity

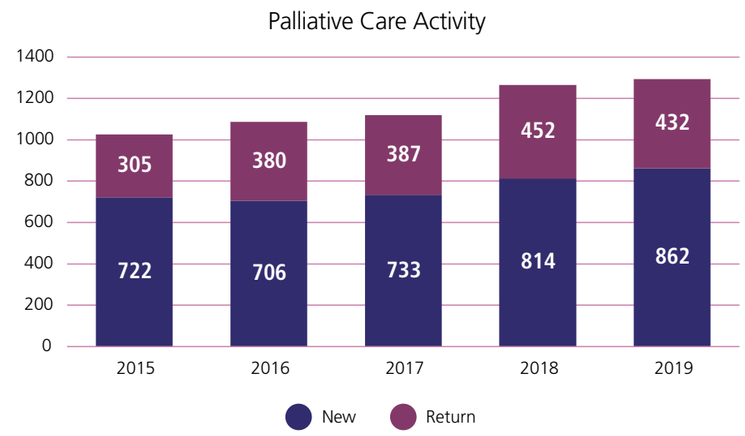
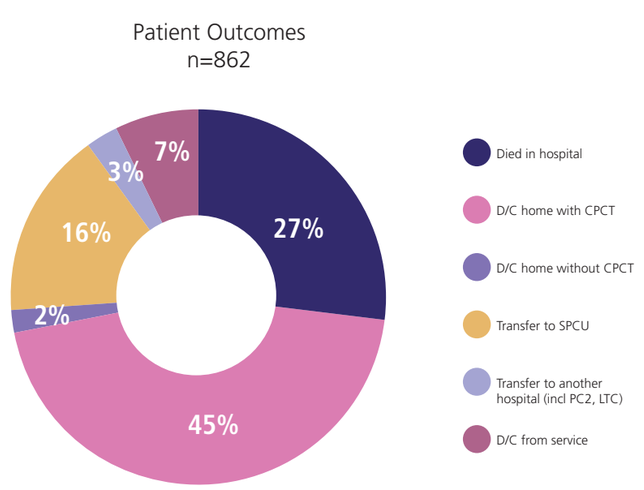


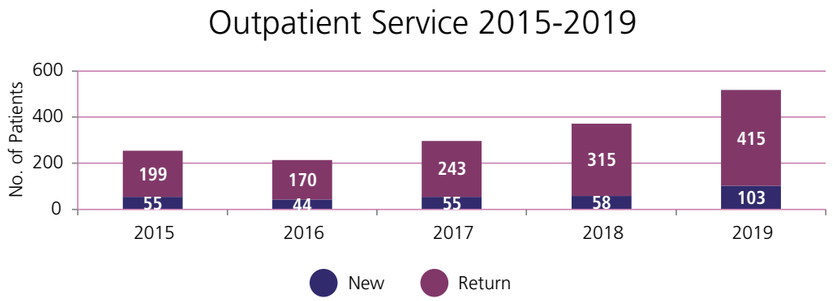
Figure 3 Patient Outcomes



Outpatient activity has expanded significantly due to the registered ANP. Four outpatient clinics are held per week; two in the outpatient department and two in the Haematology and Oncology Day Ward.

There has been a doubling in outpatient activity between 2015 and 2019.

Figure 4 Outpatient activity



Key Achievements in 2019

1. Bereavement support is an essential element of the service. Two remembrance services were held in 2019 for relatives of the patients who died under the palliative care team. These services were held on the 20th of June and the 14th of November and were attended by a total of 169 relatives. The feedback was very positive with one relative stating; "I did not know what to expect from the evening, it has really helped and given me a chance to remember my mother in a supportive and caring environment"
2. The team is research active:
   a. "Exploration of a Palliative Care Registered Advanced Nurse Practitioner (RANP) outpatient service in an Oncology Day Centre (ODC) in an acute general hospital" in collaboration with Trinity Centre for Practice and Healthcare Innovation (TCPHI)
   b. "An evaluation of bowel pattern documentation following introduction of an electronic patient record" received commendation at the Irish Association for Palliative Care Annual Education and Research Forum 2020

Key Priorities for 2020

- The Cancer Strategy (1) recommendations will inform key priorities for 2020
  - » Recommendation 32: Oncology staff will have the training and education to ensure competence in the identification, assessment and management of patients with palliative care needs and all patients with cancer will have regular, standardised assessment of their needs.
  - » Recommendation 31: Designated cancer centre will have a sufficient complement of specialist palliative care professionals.
  - » Recommendation 27: The HSE will develop closer links, on a hub and spoke model, between the National Centre for Child and Adolescent Cancer and the other designated cancer centres (like SJH) to provide appropriate and flexible transition arrangements for adolescents/young adults
  - KPI 19: 90% of patients with stage 4 disease should receive a specialist palliative care assessment in 2019
- Adult Palliative Care Services Model of Care for Ireland (2) was published in 2019. The SJH service will work to ensure alignment with all 8 recommended foundations
- Virtual assessment to become an essential component of ambulatory specialist palliative care services

References:
1. https://assets.gov.ie/9315/6f1592a09583421baa87de3a7e9cb619.pdf
2. https://www.hse.ie/eng/about/who/cspd/ncps/palliative-care/moc/ncp-palliative-care-model-of-care-24-04-0219.pdf

"Thank you so much for all the kindness and great care you showed my late husband it really meant so much to me and my family. You will always be in our Thoughts and prayers".

patient feedback

SECTION 2 Quality

2 Quality

The Trinity St James's Cancer Institute (TSJCI) are delighted to have successfully achieved accreditation from the Organisation of European Cancer Institutes (OECI) in September 2019, following a lengthy period of preparation and an inspection by a team of European OECI inspectors in April 2019.

A comprehensive inspection report received from the OECI inspectors described the strengths of the TSJCI and areas for improvement, as summarised below:

Strengths:

- "Open and honest, professional and highly motivated staff with a strong and uniform dedication in all units to the development and success of TSJCI". Nursing staff were mentioned for their professionalism and passion for the delivery of patient-centred care.
- "The hospital has a broad cancer patient portfolio and is a national designated reference centre for four cancer surgical modalities and for molecular diagnostics. TSJCI has also been designated as the national centre for CAR-T cell therapy. St. Luke's is Ireland's major radiotherapy centre, and TCD is through its Biomedical Sciences Institute and Translational Medicine Institute an advanced research institution at an international level. The development of TSJCI thus has high potential and appears to be in full accordance with the national cancer development plans".

Recommendations for Improvements:

- The capture and oversight of clinical complications of treatment experienced by cancer patients
- An electronic chemotherapy prescribing system
- Improved structures and processes for unscheduled unwell patients requiring acute oncology/haematology services
- Greater patient public involvement
- Increased access to cancer therapeutic clinical trials and patient enrolment
- Defined and standardised pathways of care for all patients with a cancer diagnosis
- Multi-disciplinary meetings (MDM) available to all disciplines involved in cancer care
- Full oversight within the TSJCI of the safety events and risk specific to the cancer patient cohort
- A TSJCI centralised biobank database for future research use.

Quality Improvement and Learning

A culture of compassion and the desire to provide safe quality patient care is strongly embedded within the TSJCI, reflecting the ethos of St James's Hospital, the Quality Safety Improvement Directorate, the National Standards for Better Safer Health Care (HIQA, 2012), and accreditation bodies such as the OECI.

Patient engagement and learning from patient feedback, clinical incidents and medication safety events is considered to be a key component to continuous improvement in the care we provide to patients.

Patient Feedback and Empowerment

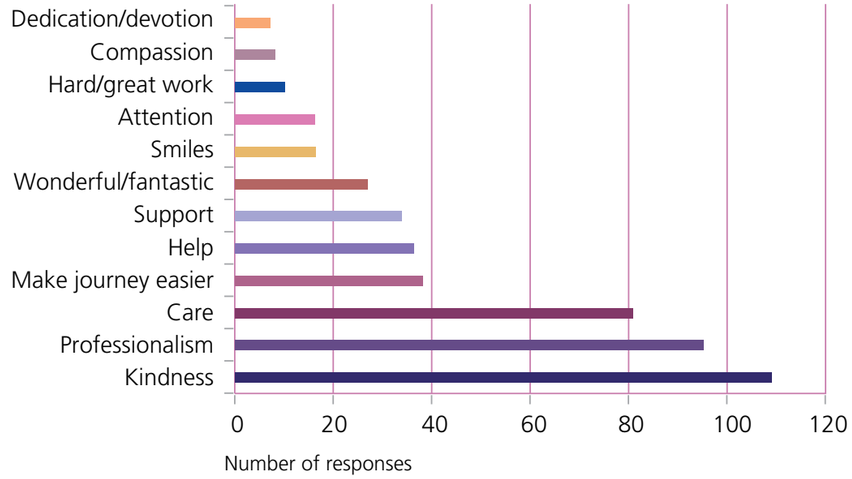
Patient feedback is encouraged, valued and used to guide change. Patient comment cards are available within clinical areas of the hospital for patients to complete, should they wish to do so.

Patient feedback received during 2018 and 2019 from patients attending the Haematology and Oncology Day Centre (HODC) was collated and themed. The improvements made within HODC and the planned improvements to service provision in the coming year, is largely based on patient feedback.

The feedback received from patients has been displayed as a poster presentation within the HODC. The poster includes details of the plans being put in place to improve the provision of the service to patients. These plans have been devised from the direct feedback from patients and it is hoped that by displaying the feedback and resulting actions, patients will be encouraged to continue their engagement with the service (Figure 1 and Table 1).

What patients told us we do well

Figure 1 Patient feedback



And the things we could improve on:

Table 1 Patient feedback

Things you said we could improve on
Waiting time are too long
Check in and check out need improvement
Waiting area is overcrowded / risk of infection
Not enough car parking and parking fees
Not enough seats
Too many visitors allowed
Not enough functioning wheelchairs
Location badly signposted
Clinic size too small
Improvement needed in the planning of service

Changes implemented based on your feedback:

- ✔ Additional chairs were provided in the reception area for patient's comfort
- ✔ Two more rooms for patient consultation were made available
- ✔ To improve efficiency and reduce delays for patients checking in to HODC, a separate facilitate was provided for patients making new return appointments
- ✔ Clinic start time was changed to reduce overcrowding within the waiting area of HODC
- ✔ A pilot project was organised to enable patients to attend their GP or community nurse service for phlebotomy in advance of their clinic appointment so blood results would be available on arrival of the patient at HODC.

Quality improvement plans for 2020 based on patient feedback include

1. The availability of a named person within the waiting area of HODC to act as a liaison for individual patient needs
2. Provision of regular updates to patients about approximate wait times
3. The introduction of a numbering system for patients awaiting blood tests
4. The provision of improved and increased written information for patients related to their care and service delivery
5. Great use of overhead electronic screens to provide patient education and hospital related updates
6. Provision of a water font within the front reception and a vending machine for tea, coffee and small snacks.

We would like to thank patients for their feedback and contribution to improving the services we deliver.
(See page 128 of this report for details of Patient Feedback within SLRON)

Leadership and Governance Management

The hospital has an established Quality and Safety Improvement Directorate for the promotion of systematic approaches to make healthcare better for patients and the staff who provide care.

Clinical governance involves having the necessary structures, processes, standards and oversight in place so that there is clarity of purpose, high-quality decision making and clarity of accountability to ensure safe, person-centred and effective services are delivered.

To support the hospital in the governance of care to patients with cancer a TSJCI Clinical Care Oversight Group (CCOG) was established within St James's Hospital in 2019 under the leadership of Professor John Reynolds. The objective of the CCOG is to monitor performance within the TSJCI to ensure that the care, treatment and support provided to patients with cancer is of a consistently high quality. This is achieved through engagement with patients and monitoring performance against best practice nationally and internationally.

There are currently a number of quality and safety committees within the hospital, including the CCOG who provide a governance structure for the elements of services within each committees' domain.

Patient Safety

Patient safety is a key area of priority for St James's Hospital with a strong commitment to providing safe, harm-free care to all patients. Safe systems of care begin at the patients' bedside and all staff are reminded of their duty to be risk aware and mitigate against the harmful effects of incidents where possible. Clinical adverse incidents are reported by staff through the hospital's online DATIX reporting system. Following initial review of clinical incidents by the hospital's clinical safety manager and local managers, they are disseminated to key staff for further review and follow up.

Each clinical incident is discussed and reviewed locally with relevant staff members and quality improvement actions are implemented to prevent reoccurrence where possible. Learning is shared with all staff to enhance the safety culture amongst staff. This information is captured within the outcomes section of each report. Education is provided to staff where required and policies/guidelines are developed or modified to reflect any change in practice, as applicable.

The QSID safety manager works with local clinical staff in relation to the systems analysis review of the event in order to determine the contributory factors, key findings and developing recommendations to improve practice and outcomes.

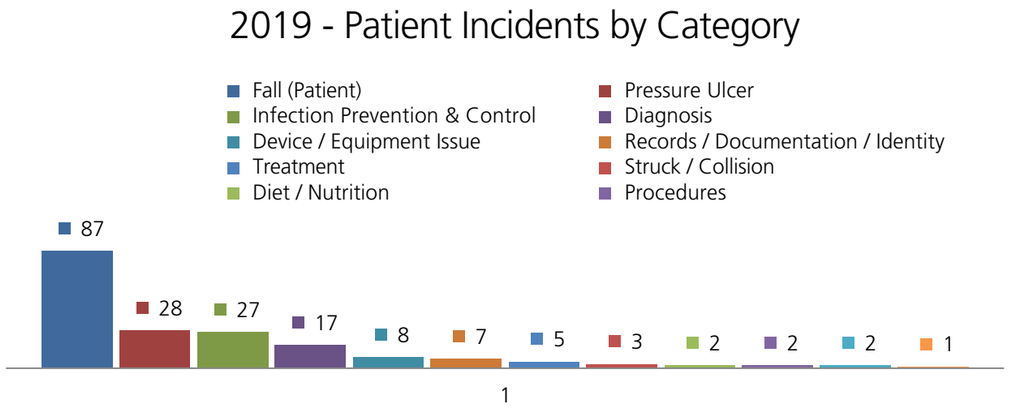
Quality and safety dashboards are available to local managers to enable the local oversight of all safety events.

The hospital's Safety Committee meet monthly to review the quality and safety governance structures in the hospital including safety events and to share learning.

195 clinical incidents were reported within the HOPe Directorate in 2019. All incidents are rated using the HSE Incident Management Framework (2018). Analysis of the 196 incidents indicated that 70% were low harm rated, 9% were moderate harm rated and 21% were operational issues to be resolved locally. There were no Serious Reportable Events within the HOPe Directorate in 2019.

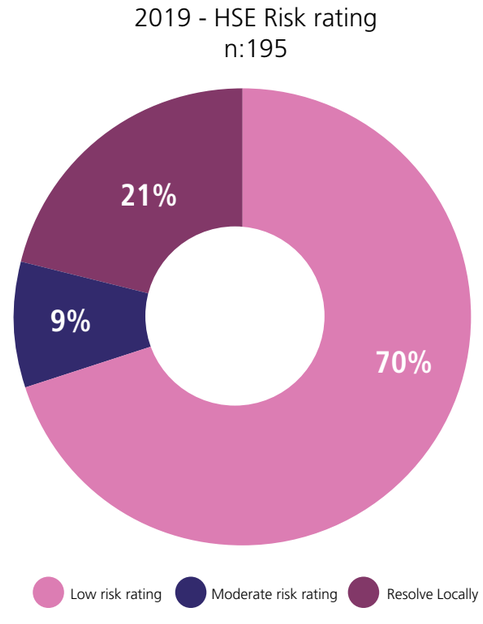
See details below of the types of clinical incidents reported within the HOPe Directorate in 2019:

Figure 2 Patient incidents by category



* Single adverse incidents, not included in this graph were reported under the following categories; Access to Services, Blood Transfusion, Interpersonal Safety, Unplanned Event, Abscond / Unaccounted Absence and handover of patient information.

Figure 3 HSE risk rating



Medication Safety Events

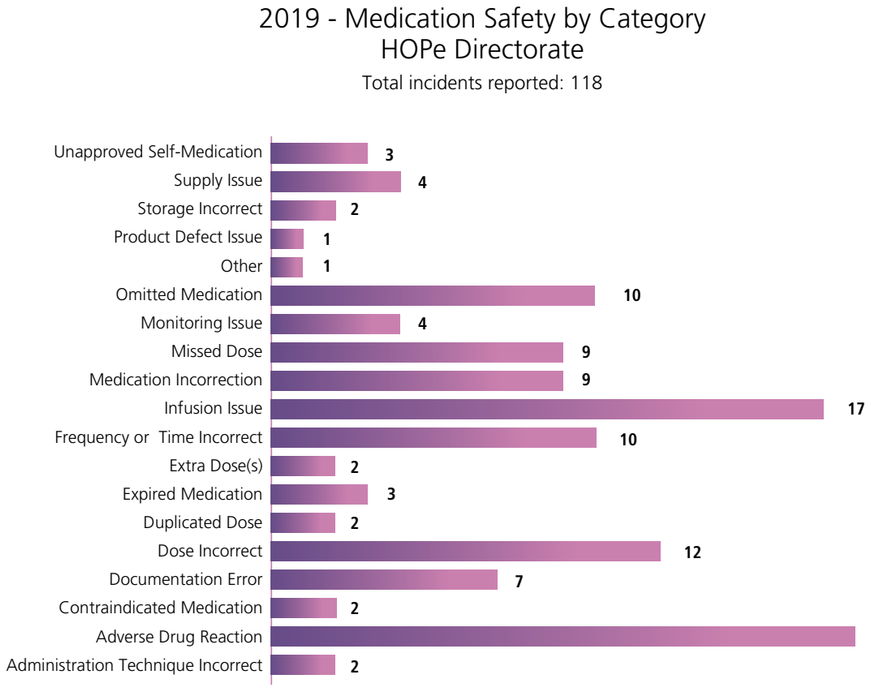
Medication safety events (actual events, near misses and adverse drug reactions) reported through DATIX are initially reviewed by the Medication Safety Facilitator (MSF). The MSF works with local clinical staff members in relation to the investigation of the event in order to determine the contributory factors, the learning points which can be derived and the action plan which can be implemented to reduce the risk of a reoccurrence.

The hospital's Medication Safety Committee aim to meet quarterly to review medication safety events within the hospital and to provide input and support regarding medication safety initiatives.

In late 2018, an electronic patient record (EPR) was introduced to the hospital. 2019 was the first complete year of e-prescribing for all in-patients. The e-prescribing system has been effective in reducing several types of prescribing errors at the point of admission or during the inpatient stay, in particular, errors of omission and commission, for example errors where the practitioner is actively doing something incorrect.

Similarly, forcing functions within EPR, for example the requirement in many cases for a prescriber to document a reason for overriding an alert, have greatly reduced the inadvertent prescription of a documented/known allergen or prescribing a medication which is contraindicated because of an interaction with an existing agent.

Figure 4 Medication safety by category



(See page 129 of this report for details of Patient Safety, Adverse Incident Management and Risk Management within SLRON)

Errors related to illegibility/lack of clarity/incomplete prescriptions have been largely eliminated since the introduction of the EPR. The e-prescribing system undergoes a continual process of revision and improvement with many of the upgrades to the prescribing system undertaken being informed by the learning derived from medication safety events and the medication safety audit programme.

It is expected that the roll out of the National Cancer Information System (NCIS), to include e-prescribing of standardised treatment regimens for patients with cancer in quarter three 2020, will improve medication safety for patients with cancer in line with the current medication e-prescribing system within St James's Hospital.

Audit:

Regular audits are used to review compliance with OECI and national quality standards and to guide quality improvement. Audit findings are shared with staff who are encouraged to actively engage in quality improvement initiatives to improve the standard of patient care. Protocols, policies and guidelines are developed and or modified to reflect quality improvements and audit findings.

An audit was commenced in Oct 2019, by Ms Maria Boyle, CNS to review access for acutely unwell, unscheduled patients with cancer, as recommended by OECI and the National Cancer Strategy (2017 -2026). The outcome of the audit will inform best practice changes.

Quality Initiatives

In September 2019, the National Adult Stem Cell Transplant Service in St James's Hospital held the first *All-Ireland Bone Marrow Transplant Conference, Patient and Family Day* in the Trinity Centre for Health Sciences Centre, St James's Hospital. There were approximately 170 participants in attendance on the day.

The event had experts in the field covering a range of topics including the patient experience, health and wellbeing, endocrine and fertility issues, psychological support, late effects post- transplant, medical and nursing advice and support. The event also gave the attendees the opportunity to network with fellow patients and families during the lunch that followed the conference.

A Cancer Nursing Group was established in preparation for OECI Accreditation. The group established monthly meetings with the agenda reflecting the compelling 'pillars' as outlined by the OECI. The group includes both medical and surgical cancer nurses of all promotional grades and Trinity College Dublin academic nursing colleagues. The group continues to work together to advance quality initiatives.

In collaboration with CLD and the Daffodil Centre, a half-day cancer education programme was delivered to Health Care Assistants and administrative staff working with cancer patients. The programme was designed and successfully delivered in November 2019 by lead cancer nurse, Amy Nolan. The feedback received was very positive, seeking similar cancer education sessions and for them to be extended to a broader cohort of staff.

A "HOPe Directorate Education Portal" is currently in development. The objective of this portal is to ensure equity and access to information and education for all staffing grades. The aim is to progress this through 'LearnPath' in CLD and incorporate cancer genetics.

Awards and Achievements

The National Adult Stem Cell Transplant Service in St James's Hospital achieved accreditation for the first time from the Joint Accreditation Committee of International Society for Cellular Therapy and European Blood and Marrow Transplantation (JACIE), in April 2020 following inspection in 2018 and the implementation of recommendations made by the committee in 2019.

Key Quality Priorities for 2020

- To improve communications and the sharing of relevant patient data between St James' Hospital and referring centres through fully implementing standardised online GDPR compliant patient referral forms for MDM and patient follow-up post treatment
- To establish a patient representative/advisory group for the development of patient-centred improvements within the TSJCI
- To progress the development of a standardised disease specific TSJCI complications registry to capture complications of care experienced by cancer patients for the purpose of review and learning
- To support the introduction of the National Electronic Chemotherapy Prescribing System by quarter three 2020
- To work with IMS in the development of a system to identify all patients with cancer within the hospital to achieve full oversight of this patient cohort
- To review all TSJCI policies and procedures in preparation for OECI interim audit in November 2020
- To support the development of agreed standardised patient pathways for each disease group and to help promote an increase in the number of therapeutic clinical trials available to patients within the TSJCI.

SECTION 3

Education and Research

1 Education

1 Education

Overview of Service

The mission of the education pillar is to position the cancer institute as the hub for cancer education nationally, offering cancer education opportunities for all connected with delivering cancer care and those enrolled in cancer education training programmes. Patient-public outreach is also a priority in this pillar. The education Lead is Professor Jacintha O'Sullivan Professor in Translational Oncology, Director of MSc. in Translational Oncology

The education pillar in the TSJCI contains four structured programmes.

1) PhD. training programme for scientists and health care professionals
2) Research Fellow training programme
3) Cancer education programme allowing flexible personalised education pathways

Patient-public engagement and involvement programme delivering education outreach activities.

Key Activity in 2019

1. An education advisory board has been established with representation from the University, St James's Hospital and including cancer patient survivors. This board meets every 6-8 weeks and is chaired by Professor Jacintha O'Sullivan, education lead for TSJCI. In 2019, this advisory board has worked on the education business plan and priorities for the next five years to further develop the education pillar in TSJCI.
2. Professor O'Sullivan in collaboration with Chris Keely, a senior business development manager and a graphic design company have produced a detailed education presentation, and this will be used to attract collaborative education activity between industry partners, private hospitals, universities and cancer charities.

Key Achievements in 2019

- 18 PhD students graduated under the Cancer Theme
- 16 MSc in Translational Oncology graduated where 30 European Credit Transfers (ECTs), of their 90 ECT degree was assigned to translational cancer research experience. These students were placed across many cancer groups in TSJCI.
- A new MSc. in Cancer Survivorship was approved and will be directed by Professor Juliette Hussey, Department of Physiotherapy.
- Three pharmacy students who graduated in 2019 completed their final year projects on cancer under the direction of Professor Lorraine O'Driscoll.
- Six cancer fellowships were awarded to research fellows in training.
- Six cancer scholarships were awarded to PhD. students in training.
- At the undergraduate level, Dr Stephen Maher rolled out a new TEP elective, Cancer-The Patient Journey. This blended learning model was delivered to a diverse undergraduate student body across the University, outside of Health Science and including international students. This TEP module increased the understanding of cancer, specifically prevention, diagnosis, treatment and survivorship as a health burden with substantial social impact.
- An audit of oncology-related teaching provision in the undergraduate medial curriculum has been completed by Dr Stephen Maher. The aim is to amalgamate and focus oncology teaching into 'systems week' in year 3 of the medical programme.
- One Postgraduate certificate in Advanced Radiotherapy Practice
- Five Postgraduate diplomas in Advanced Radiotherapy Practice
- Three MSc in Advanced Radiotherapy Practice
- Since its launch in July 2018, the free "From Diagnosis to Survival, an Introduction to Radiation Oncology" (Massive Open Online Courses (MOOC)was completed by approximately 4,000 participants across over 110 countries. This unique educational package has received exceptional feedback with over 90% of participants, stating that it met or exceeded their expectations. Analysis of this feedback will further inform the identification of critical barriers to access to Radiation Therapy. Dr Laure Marginol and her colleagues in radiation therapy host this programme.
- The following cancer related courses were run to enhance oncology education for our health care professionals (Centre for Learning and Development: Avril Lowry): Post Graduate Diploma in Cancer care and Haematology – in association with Trinity School of Nursing and Midwifery. Foundation course in Cancer Care and Haematology – Level 8 – accredited by NMBI and Trinity Centre for Practice and Healthcare Innovation. Haematology five-day educational Programme accredited by NMBI. Palliative Care Programme – accredited by NMBI and Trinity Centre for Practice and Healthcare Innovation. Three-day Leadership and Management programme available to all staff – NMBI accredited. Venepuncture and cannulation training and workshops. Central Venous Access training and workshops. Thoracic Study Day. Basic Life Support. Advanced Cardiac Life support. Tissue Viability foundation programme. Electronic Patient Recording. Mindfulness eight-week Programme available to all staff
- In 2019: Professor Lorraine O'Driscoll with others of the Board of Directors of ISEV, developed a 21-lecture MOOC on "Extracellular Vesicles in Health & Disease" [L O'Driscoll TSJCI; D Carter, Oxford; and K Witwer, John Hopkins; with C Soekmadji as project manager]
- Many international students were hosted in TSJCI to conduct cancer research in 2019. Dr Kathy Gately hosted the following students in her lab; Nathalie Simon from Reutlingen University, Melissa Coyle from Chapman University California and Michelle Clement from University Hospital of Aarhus. Professor Lorraine O'Driscoll hosted Alberta Giovanazzi from Utrecht University.
- Many educational conferences were hosted including in January 2019: Acute Leukemia Forum (ALF) meeting. May 2019: Workshop on extracellular vesicles isolation and characterization: towards biomarker discovery and validation for cancer diagnosis and predicting response to anti-cancer therapy. Sept 2019: 2nd All Ireland Bone Marrow Transplant Conference and the International cancer conference in TSJCI.
- Cancer outreach activities in 2019 were numerous. Some included 1) the All Ireland Bone Marrow Transplant patient and family day 2) visits to Holy Child Secondary School, Killiney, Dublin and New Cross College, Finglas, Dublin for Science Week 2019 3) Dr Margaret Dunne interviewed for a feature on cancer immunotherapy research for Today with Miriam, a national broadcast radio show 4) Public and patient information event on oesophageal cancer research
- Dr Margaret Dunne lead a Public/Patient Involvement project entitled: Promoting Education and Research Knowledge (PERK), which links with schools and host public workshops on cancer research, aimed at improving public understanding of research, and improving cancer research by incorporating feedback.
- A transition year programme led by Professor. Derek Doherty, runs in early March each year. Students with an interest in medicine and science receive a week of lectures; seminars group discussions, lab practicals and demonstrations, and visits to labs, on a diverse array of medical subjects, including cancer.
- Many educational outreach talks have been delivered by cancer PI's in TSJCI, some include: European Researchers Night, Sept. 2019, Professor. Lorraine O'Driscoll hosted an interactive stand (TBSI) on extracellular vesicles in multiple forms of cancer, and Dr Margaret Dunne hosted a stand *What is Cancer?*

Key Priorities for 2020

- Obtain funding to roll out the below activities, these have been mapped out in our education pillar business plan.
- Hire an education co-ordinator to work with Professor Jacintha O'Sullivan.
- Hire a PPI director to lead all outreach work in TSJCI.
- Obtain philanthropy funding to support PhD. scholarships and fellowships.
- Establish collaborative education activities with industry, private hospitals, universities and charities.
- Establish structures to roll out the offering of individual cancer modules to all in the TSJCI to obtain higher level oncology education training.
- Develop flexible and personalised education pathways for all scientists and health care professionals.

2 Research

2 Research

Overview of Service

Scientific cancer research is a significant strength at Trinity College Dublin and aligned hospitals at St James's Hospital, Tallaght University Hospital, The Coombe Women and Infants University Hospital and Our Lady's Hospital for Sick Children, Crumlin/The National Children's Hospital. Research in cancer incorporates basic biomedical and biomolecular research based at the Trinity Biomedical Science Institute (TBSI) and the Trinity Translational Medicine Institute (TTMI). In addition, the Institute of Preventative Medicine in Tallaght Hospital provides a hub for preventive cancer research studies. Our researchers are spanned across several schools and departments including biochemistry and immunology, medicine, pharmacy and pharmaceutical sciences, genetics and microbiology, nursing, chemistry and dental science.

Research Lead:
Professor John O'Leary, Consultant Histopathology and Molecular Medicine Ireland
Dr Patricia Doherty, Senior Research Programme Officer (Cancer)

Key Activity in 2019

The 11th International Trinity St James's Cancer Institute conference was held on 24th and 25th September, 2019. The conference was attended by almost 200 researchers, clinicians, nurses, medical students and allied health professionals across Ireland. The theme was "Advances and Future Directions in Personalised Medicine". Talks on advances in oncology were delivered by an outstanding group of international speakers including Professor Gerry Hanna (Peter MacCallum Cancer Centre, Australia), Professor Adrian Harris (Oxford, UK), Dr Janessa Laskin (BC Cancer Agency, Canada), Professor Rene Medema (Netherlands Cancer Institute, Amsterdam) to name a few. The conference's Burkitt lecture, regarded as a highlight of the conference, was delivered by pioneering cancer researcher Professor Mina J Bissell from the Lawrence Berkeley National Laboratory, California, a world-renowned expert in cancer biology.

TSJCI researchers published 337 papers in 2019, 32 of these were in publications with an impact factor greater than 10 [9.5%].

In the 2018/2019 academic year, our researchers were awarded €12,797,659 in competitive research grant income. This represented an increase of 11% on the previous year.

Our research strategy has defined five themes that will be further developed in the coming year. These are:
1. Cancer Prevention
2. Molecular Oncology
3. Precision Oncology
4. Cancer Immunology
5. Cancer Survivorship and Supportive Care

Key Achievement in 2019

Two TSJCI researchers were awarded the prestigious Irish Research Council Advanced Laureate Awards, Professor Lorraine O'Driscoll ('Extracellular Vesicles in Cancer') and Professor Adrian Bracken ('Understanding the impact of divergent PRC2 complex assemblies on chromatin landscapes and gene regulation').

A number of our researchers are partners in the Science Foundation Ireland Strategic Partnership Programme: Precision Oncology Ireland (POI), namely Professor Jacintha O'Sullivan, Professor Maeve Lowery and Professor John Reynolds. POI is a consortium of five Irish Universities, six Irish cancer research charities and 10 international companies aiming to develop new diagnostics and therapeutics for personalised cancer treatment.

Dr Anne-Marie Baird was appointed as board member of Lung Cancer Europe (LuCE) advocacy group. LuCE aims to raise awareness about inequities regarding the access to lung cancer treatment and care in Europe and advocates European policies that will lead to improvements in lung cancer prevention, early detection, treatment and care.

In conjunction with Lung Cancer Alliance (USA), the 3rd Donegal 'Shine a Light on Lung Cancer' fundraising event was held in Glenveagh National Park, Co. Donegal to raise greater awareness of lung cancer and to raise funds for the Target Lung Cancer charity at St James's Hospital.

Dr Margaret Dunne was interviewed for a feature on cancer immunotherapy for Today with Miriam O'Callaghan (RTÉ Radio One).

Dr Sharon O'Toole co-leads a public patient involvement group (PPI) in the Irish Society of Gynaecological Oncology. A number of highlights from 2019 included;
- Publication of first patient-led research from the group on "Patient-Doctor communication"
- Representation on national committee including the NCCP guidelines committee
- Research input into studies across the island of Ireland
- Launch of the Laura Brennan award for patient advocacy and Public Patient Involvement (PPI)
- Successful awareness campaign for world ovarian cancer day on May 8th (specifically mentioned by the international umbrella group, Ovarian Cancer Coalition, as ranking very high as a country in our media outreach)
- Partner in inaugural World Gynae Cancer Day on September 20th and ran successful awareness campaign

Key Priorities for 2020

- Launch of the MSc in Cancer Survivorship
- Working to continue recruitment in Ireland to the INTERVAL GAP-4 trial, an international, multi-site RCT examining if exercise can prolong survival in men with metastatic castrate resistant prostate cancer
- In November 2018, following the Scally recommendations, the HSE agreed to establish a National Cervical Screening Laboratory, based at the Coombe Women and Infants University Hospital, under the direction of Professor John O'Leary and Professor Cara Martin, to focus on the needs of women and provide a blueprint for future cancer screening developments in Ireland. This will be a world first for cancer screening medicine, offering artificial intelligence digital cytopathology, world-leading molecular biology facilities, informatics, interventional science [screening psychology], disease modelling/ health economics and a national quality assurance facility for CervicalCheck. It will create an ecosystem of clinical and research excellence allowing direct translation of patient-focused research. CERVIVA will serve as the research arm of the new facility to advance national and internationally relevant research in HPV-associated diseases, cancer screening, technology development and disease modelling
- Further development and implementation of the TSJCI research strategy, encouraging greater integration between basic, translational and clinical research across all sites
- Delivering on the OECI quality improvement plan for research

Appendix 1 Publications

1 **Appendix 1** Publications

Abu Saadeh, F., Riain, C.O., Cormack, C.M. and 1 more (...) (2019).Lung metastases from benign uterine leiomyoma: does 18-FDG-PET/CT have a role to play? Irish Journal of Medical Science, 188(2) 619-624

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Appendix 2 Clinical Trials

2 **Appendix 2** Clinical Trials

Clinical Trials Opened in 2019

Principal Investigator	Trial Short Name	Sponsor	Indication	Full Title of Clinical Trial
Prof Maeve Lowery	MK3475-811	MSD	Gastric	A Phase III, Randomized, Double-blind Trial Comparing Trastuzumab Plus Chemotherapy and Pembrolizumab or Placebo as First-line Treatment in Participants With HER2 Positive Metastatic Gastric or Gastroesophageal Junction Adenocarcinoma (KEYNOTE 811)
Prof Maeve Lowery	MK3476-859	MSD	Gastric	Phase 3, randomized, double-blind clinical study of pembrolizumab (MK-3475) plus chemotherapy versus placebo plus chemotherapy as first-line treatment in participants with previously untreated, HER2 negative, advanced gastric or gastroesophageal junction adenocarcinoma
Prof John Kennedy	MK3475-756	MSD	Breast	A Randomized, Double-Blind, Phase III Study of Pembrolizumab versus Placebo in Combination with Neoadjuvant Chemotherapy and Adjuvant Endocrine Therapy for the Treatment of High-Risk Early-Stage Hormone Receptor-Positive, Human Epidermal Growth Factor Receptor 2-Negative (HR+/HER2–) Breast Cancer (KEYNOTE-756)
Prof John Kennedy	Natalee/ TRIO33	TRIO	Breast	NATALEE/ TRIO033: A phase III, multicenter, randomized, open-label trial to evaluate efficacy and safety of ribociclib with endocrine therapy as an adjuvant treatment in patients with hormone receptor-positive, HER2-negative, early breast cancer (New Adjuvant TriAl with Ribociclib)
Dr Dearbhaile O'Donnell	C0-338-087	CLOVIS	Ovarian	Athena-A multicenter, randomised, double-blind, placebo-controlled phase 3 study in ovarian cancer patients evaluating rucaparib and nivolumab as maintenance treatment following response to front-line platinum-based chemotherapy
Dr Sinead Cuffe	MK3475-495	MSD	NSCLC	Phase 2 Precision Oncology Study of Biomarker-Directed, Pembrolizumab (MK-3475, SCH 900475) Based Combination Therapy for Advanced Non-Small Cell Lung Cancer (KEYNOTE-495; KeyImPaCT)
Prof Maeve Lowery	Astellas_8951-CL-0302	Astellas	Gastric	A Phase 3, Global, Multi-Center, Double-Blind, Randomized, Efficacy Study of IMAB362 plus CAPOX Compared with Placebo Plus CAPOX as First-line Treatment of Subjects with Claudin (CLDN) 18.2-Positive, HER2-Negative, Locally Advanced Unresectable or Metastatic Gastric or Gastroesophageal Junction (GEJ) Adenocarcinoma.
Dr Eibhlin Coneally	FEDR-MF-0002	Celgene	MPN associated Myelofibrosis	A Phase 3, multicentre, Open- Label, randomised study to evaluate the efficacy and safety of Fedratinib compared to Best Available Therapy In Subjects With DIPSS (dynamic international prognostic scoring system) - intermediate or high-risk primary myelofibrosis (PMF), post-polycytemia vera myelofibrosis (post-PV MF), or post-essential thrombocythemia myelofibrosis (post-ET MF) and previously treated with ruxolitinib
Prof John Kennedy	Emerald	Radius	Breast	RAD1901-308, Elacestrant monotherapy vs. standard of care for the treatment of patients with ER+/HER2- advanced breast cancer following CDK4/6 inhibitor therapy a phase 3 randomised, open-label, active-controlled, multicenter trial
Prof Maeve Lowery	DZB-CS-301	Basilea	Cholangiocarcinoma	A pivotal study of derazantinib in patients with inoperable or advanced intrahepatic cholangiocarcinoma and FGFR2 gene fusions or FGFR2 gene mutations or amplifications
Prof Maeve Lowery	Cosmic	Exelixis	Hepatocellular	A Randomized, Controlled Phase 3 Study of Cabozantinib (XL184) in Combination with Atezolizumab versus Sorafenib in Subjects with Advanced Hepatocellular Carcinoma Who Have Not Received Previous Systemic Anticancer Therapy
Dr Sinead Cuffe	M14-239	Abbvie	NSCLC	Phase 2, Open-Label Safety and Efficacy Study of Telisotuzumab Vedotin (ABBV-399) in Subjects with Previously Treated c-Met+ Non-Small Cell Lung Cancer

We enrolled 49 patients in total over 13 different trials as per the table below.

Principal Investigator	Trial Short Name	Full Clinical Trial Title	No of patients enrolled
Dr Cliona Grant	B9991016	A Randomized Double-Blind Phase 3 Study of Avelumab in Combination with Standard of Care Chemoradiotherapy (Cisplatin plus Definitive Radiation Therapy) Versus Standard of Care Chemoradiotherapy in the Front-Line Treatment of Patients with Locally Advanced Squamous Cell Carcinoma of the Head and Neck	1
Prof Elisabeth Vandenberghe	CII13	A phase 3 multicenter, randomised, prospective, open-label trial of standard chemoimmunotherapy (FCR/BR) versus rituximab plus venetoclax (RVE) versus obinutuzumab (GA101) plus venetoclax (GVE) versus obinutuzumab plus ibrutinib plus ventoclax (GIVE) IN fit patients with previously untreated chronic lymphocytic leukemia (CLL) without DEL(17P) or TP53 mutation	4
Prof John Reynolds	Cross V Magic	Neo-AEGIS (NEO-adjuvant trial in Adenocarcinoma of the oEsophagus and oesophagoGastric junction International Study): Randomised Clinical Trial of neoadjuvant and adjuvant chemotherapy (Investigator's choice Modified MAGIC or FLOT regimen) vs. gastric junction neoadjuvant chemoradiation (CROSS protocol) in adenocarcinoma of the oesophagus and oesophago-gastric junction	16
Dr Sinead Cuffe	Etop Booster	A randomised phase II trial of osimertinib and bevacizumab versus osimertinib alone as second-line treatment in stage IIIb-IVb NSCLC with confirmed EGFRm and T790M	1
Dr Sinead Cuffe	ETOP Pearls	A randomised, phase 3 trial with anti-PD-1 monoclonal antibody pembrolizumab (MK-3745) versus placebo for patients with early stage NSCLC after resection and completion of standard adjuvant therapy (PEARLS)	4
Prof Elisabeth Vandenberghe	Gilead Zeus	Non-interventional study to assess the safety profile of idelalisib in patients with refractory follicular lymphoma	2
Prof Elisabeth Vandenberghe	Lymrit	A phase I/II study of lutetium (177Lu) lilotomab satetraxetan (Betalutin®) antibody-radionuclide-conjugate for treatment of relapsed non-Hodgkin lymphoma	2
Dr Sinead Cuffe	MK3475-598	Phase 3, Randomized, Double-Blind Study of Pembrolizumab plus Ipilimumab vs Pembrolizumab plus Placebo in Previously Untreated, Stage IV, Metastatic Non-small Cell Lung Cancer Subjects Whose Tumors are PD-L1 Positive (TPS ≥ 50%)	3
Prof John Kennedy	Mk3475-756	A Randomized, Double-Blind, Phase III Study of Pembrolizumab versus Placebo in Combination with Neoadjuvant Chemotherapy and Adjuvant Endocrine Therapy for the Treatment of High-Risk Early-Stage Hormone Receptor-Positive, Human Epidermal Growth Factor Receptor 2-Negative (HR+/HER2–) Breast Cancer (KEYNOTE-756)	4
Prof Maeve Lowery	Mk3475-811	A Phase III, Randomized, Double-blind Trial Comparing Trastuzumab Plus Chemotherapy and Pembrolizumab or Placebo as First-line Treatment in Participants With HER2 Positive Metastatic Gastric or Gastroesophageal Junction Adenocarcinoma (KEYNOTE 811)	2
Prof Maeve Lowery	Mk3475-859	Phase 3, randomized, double-blind clinical study of pembrolizumab (MK-3475) plus chemotherapy versus placebo plus chemotherapy as first-line treatment in participants with previously untreated, HER2 negative, advanced gastric or gastroesophageal junction adenocarcinoma	8
Prof John Kennedy	Positive	Pregnancy Outcome and Safety of Interrupting Therapy for women with endocrine responsIVE breast cancer	1
Dr Dearbhaile O'Donnell	Tiger	A phase III trial comparing conventional-dose chemotherapy using paclitaxel, ifosfamide, and cisplatin (TIP) with high-dose chemotherapy using mobilizing paclitaxel plus ifosfamide followed by high-dose carboplatin and etoposide (TI-CE) as first salvage treatment in relapsed or refractory germ cell tumours	1

Appendix 3

Cancer Audit Programme Team

3 Appendix 3
Cancer Audit Programme Team

The cancer audit programme team is managed by a Cancer Audit Manager, and clinically led by Professor John Reynolds, with direct input and output to the Administration, specifically the Deputy CEO, Ms Ann Dalton. The programme has dedicated cancer data managers for most cancer sites including lung, oesophageal/gastric, breast, haematology (HOPe Directorate), colorectal, skin, gynaecological, head & neck, and urology. The data managers work with their clinical and administrative teams, and experienced MDT coordinators to ensure timely and complete data collection to fulfil the aims and objectives of the cancer audit programme.

The cancer audit team members have wide ranging experience at SJH and elsewhere in the healthcare setting including nursing and specialist practice, cancer patient services and administration, operations management, health research, health informatics, clinical trial management, data management, data analytics, and statistics. Team members have been cited as co-authors on numerous academic publications and audits and have contributed to national, European and international registries and databases.

Table 1 Cancer Audit Programme Team

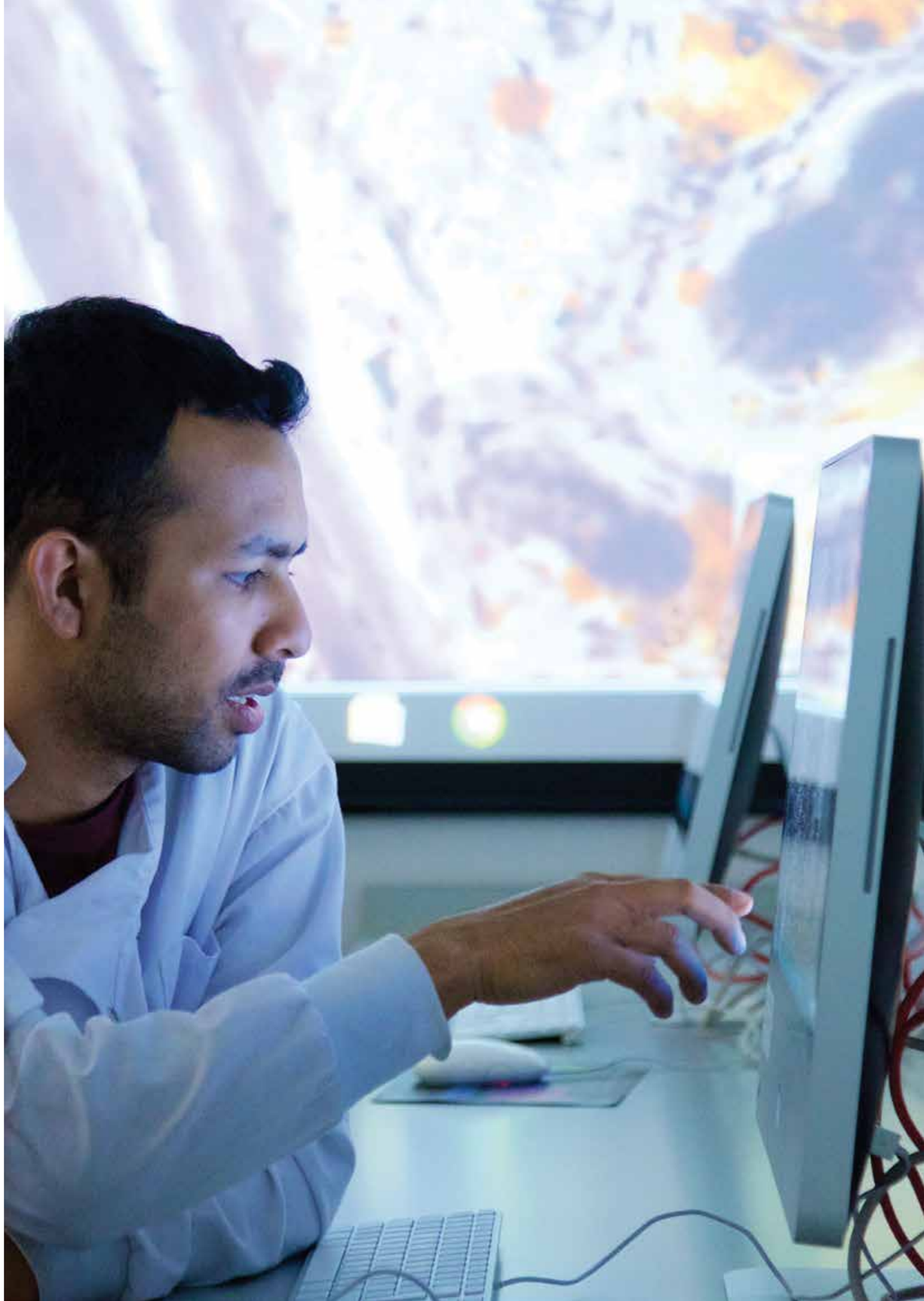
Professor John Reynolds	Cancer Audit Clinical Lead
Lisa McDowell	Cancer Audit Programme Manager (October 2019-Present)
Cathy Enright	Cancer Audit Programme Manager (to 2019)
Karina Delaney	Breast Cancer Data Manager
Chris Gleeson	Colorectal Cancer Data Manager
Therese Brown	Gynaecology Cancer Data Manager
Mary Devlin	Head and Neck Cancer Data Manager
Fiona Mulvany	Lung Cancer Data Manager
Anita Cafolla	Skin Cancer Data Manager
Mary O'Brien	Urology Data Manager
Sinead King	Upper GI and Hepatobiliary Data Manager

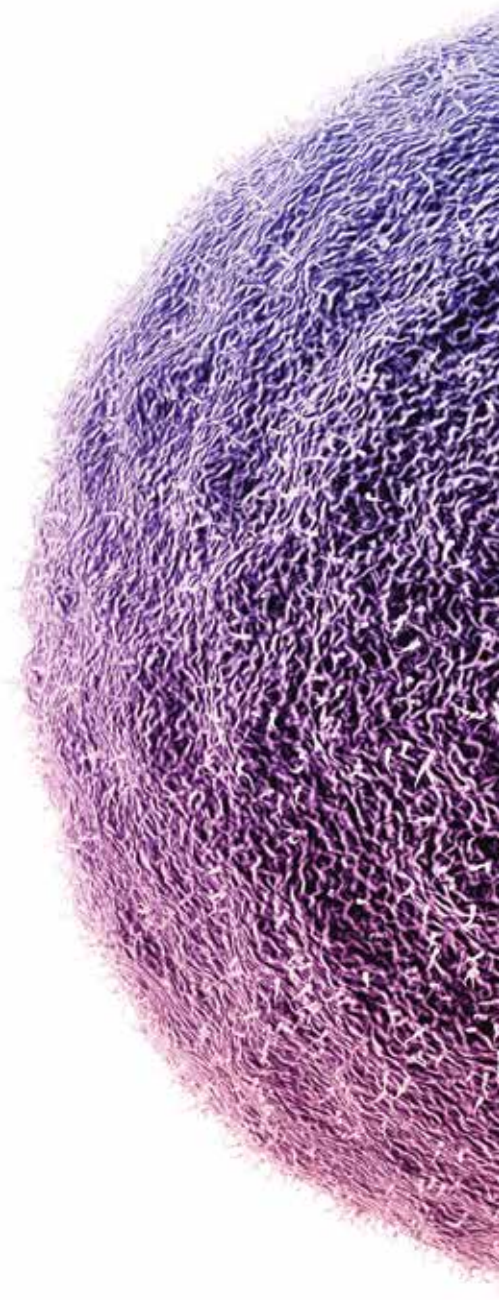
Each data manager is closely linked to their corresponding multidisciplinary team

Appendix 4 Glossary of terms

4 **Appendix 4** Glossary of terms

Term	Description
AYA	Adolescent and young adults
BRCA	Breast cancer gene
CLD	Centre for Learning and Development
CMD	Cancer Molecular Diagnostic
CNM	Clinical Nurse Manager
CNS	Clinical Nurse Specialist
CWIUH	Coombe Women's and Infants' University Hospital
EBMT	European Group for Blood and Marrow Transplantation
ENT	Ear, nose and throat
EPR	Electronic Patient Record
GDPR	General Data Protection Regulation
HEPA	High Efficiency Particulate Air filter
HIQA	Health Service Executive
HSE	Health Information and Quality Authority
ICU	Intensive Care Unit
ISCT	International Society for Cellular Therapy
JACIE	Joint Accreditation Committee of the International Society for Cellular Therapy and the European Group for Blood and Marrow Transplantation
KPI	Key Performance Indicator
MDM	Multi-disciplinary Meeting
MDT	Multi-disciplinary Team
MDM	Multi-disciplinary Meeting
NCCP	National Cancer Control Programme
NCIS	National Cancer Information System
NMBI	Nursing and Midwifery Board of Ireland
NOCA	National Office of Clinical Audit
OECI	Organisation of European Cancer Institutes
PPI	Public Patient Involvement
PRG	Patient Representative Group
QIP	Quality Improvement Plan
RAC	Rapid Access Clinic
RALC	Rapid Access Lung Centres
RANP	Registered Advanced Nurse Practitioner
RCOG	Royal College of Obstetricians & Gynaecologists
RCSI	Royal College of Surgeons in Ireland
RVEEH	Royal Victoria Eye and Ear Hospital
SABR	Stereotactic ablative radiotherapy
SACT	Systemic Anti-Cancer Therapy
SCT	Stem Cell Transplant
SOP	Standard Operating Procedure
TSJCI	The Trinity St James's Cancer Institute
TUH	Tallaght University Hospital
WTE	Whole time equivalent





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