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# CANCER CENTRE ANNUAL REPORT 2019





LETTERKENNY UNIVERSITY HOSPITAL



MAYO UNIVERSITY HOSPITAL



MERLIN PARK UNIVERSITY HOSPITAL



UNIVERSITY HOSPITAL GALWAY



PORTLUNCULA UNIVERSITY HOSPITAL



ROSCOMMON UNIVERSITY HOSPITAL



SLIGO UNIVERSITY HOSPITAL





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**Professor Michael Kerin**

*Director of MCAN*

*Chair, Cancer Strategy Group*

*Saolta University Health Care Group*



It is a pleasure to present this Annual Report on behalf of all those who deliver cancer care across the Saolta group. We live in challenging times and this report documents the high incidence and complex nature of cancer care delivered by the multi-disciplinary cancer programmes in our region. The 2019 Cancer Centre Annual Report, the 8<sup>th</sup> of its kind, captures the volume, complexity and extensive nature of the programme of cancer care available at the Cancer Centre at UHG and the level 3 hospitals across the Saolta Group. One of the major achievements of the Saolta Executive Management Team in 2019, led by the Chief Clinical Director, was the move towards a Managed Clinical Academic Network (MCAN) for cancer services. This new integrated governance structure has the potential to transform the way we manage and deliver cancer across the region with a planned launch date early in 2020. Our programme is overseen by the National Cancer Control Programme (NCCP) and the Saolta Executive, together with NUI Galway as the academic partner.

The National Cancer Strategy 2017 - 2026 sets out a clear direction for cancer services over the coming decade. Whilst the Strategy focuses on prevention, early diagnosis, and quality of care aiming to improve both outcomes and quality of life for cancer survivors, it also commits to the development of comprehensive cancer centres. Together with the Department of Health, the NCCP commits to the development of a rolling capital investment plan for the next decade ensuring investment in infrastructure, facilities, personnel and programmes in the cancer centres.

The Saolta Group works collaboratively with and under the direction of the NCCP in the implementation of the National Cancer Strategy in our region. As the most westerly cancer programme in Europe and the most geographically dispersed healthcare region in Ireland, this poses a major challenge. In 2019, KPMG carried out an Options Appraisal for Saolta's model 4 hospital in Galway, the designated cancer centre, identifying multiple critically deficient facilities including a shortfall of 222 inpatient beds and inadequate cancer care infrastructure. KPMG recommended immediate capital investment for cancer in an Ambulatory Care Centre and a new pathology laboratory. In line with the National Cancer Strategy, delivering this infrastructure will be a key priority for the MCAN in 2020.

Our objective is to develop a European accredited, patient centred Cancer Centre at University Hospital Galway that will act as a model for the rest of Ireland. Internationally, outstanding cancer care is developed and delivered by clinical specialists working together on a common training, education, research and innovation platform. In keeping with this, our Cancer Centre has delivered major research outputs incorporating basic science, clinical trials, molecular and biomarker discoveries, contributing to leading international research consortia addressing the genetic basis for cancer aetiology and risk. Our ongoing investment in research will ensure that our cancer programme is appropriately academically underpinned translating into improved outcomes for patients.

It is important to acknowledge the hard work and expertise of so many across our region including clinicians from surgery, radiology, pathology, medical oncology and radiation oncology. Equally we acknowledge the input of professionals from nursing, radiography, laboratory and health and social care and the many others in the Cancer Centre and across our Saolta University Health Care Group.

Finally, I wish to thank all who contributed to this report across the Saolta Group. I look forward to the ongoing development of the MCAN and to future development of our Cancer Programme.

*Professor Michael J. Kerin*

**Mr Tony Canavan**

*Chief Executive Officer  
Saolta University Health Care Group*



The Saolta Group Cancer Programme provides high quality, patient centred care supported by national standards and clinical guidelines and works collaboratively with the National Cancer Control Programme to ensure that all cancer patients have the opportunity to access quality care as close to home as is clinically possible.

It is my pleasure to introduce the Saolta University Health Care Group Cancer Centre Annual Report for 2019 on behalf of the Saolta Executive. Over the years, we have seen the advancement and ongoing collaboration between Cancer Services and the National University of Ireland, Galway (NUIG) resulting in cancer care delivery that is underpinned by education, research and innovation.

The high level of activity documented in this report is testimony to the hard work of our diagnostic and therapeutic teams who consistently deliver high volume, high quality care to patients from this region.

The cancer programme is quality assured through its complex Multidisciplinary Programme hosted from the Cancer Centre at UHG with multi-site linkages with the model 3 hospitals across the Saolta Group.

Undoubtedly, one of the key highlights in 2019 is witnessing the initial work starting on the construction of the Radiation Oncology unit at University Hospital Galway as part of the National Programme for Radiation Oncology. We look forward to commissioning the unit in the years ahead as it will ensure that patients in the Saolta region have access to world class radiation oncology treatment in a new state of the art facility.

I look forward to the launch of the Managed Clinical Academic Network (MCAN) for cancer services next year which will enhance the delivery of cancer services across our region.

I conclude by acknowledging the outstanding commitment and effort of all our staff from many disciplines who provide the best possible care for our patients and their families living with cancer, across the Saolta Group. I would like to thank Professor Michael Kerin for his continued support and time, leadership and strategic vision he is contributing to our Cancer Services.

I would like to thank all involved in the preparation of this report. It is an acknowledgement of the care that has been provided and it is a statement of our ambition to achieve better outcomes and better standards of care for our patients.

***Mr Tony Canavan, CEO***

**Mr. Gerry McManus**

*Interim Chair*

*Saolta University Health Care Group*



On behalf of the Board of Directors, I am very pleased to welcome the publication of the 2019 Saolta Group Cancer Centre Annual Report. This is a comprehensive report which provides an update on the cancer services being delivered across the Group. I would particularly like to thank all our staff who work in the many cancer specialty areas for their hard work and dedication to providing a world class service to our patients.

**Professor Ciarán Ó hÓgartaigh**

*President*

*National University of Ireland, Galway*



As President of NUI Galway, it is my pleasure to endorse this report.

The role of our academic medical centre in the delivery of high-quality clinical care in an environment of research, education, training and innovation is highlighted in this Report, which also catalogues the high volume of clinical care allied to the University's research and education mission.

Through the research and academic activities of our colleagues, NUI Galway makes a meaningful contribution to cancer care for our community.

Over recent years, the University has developed the Lambe Institute for Translational Research; the HRB Clinical Research Facility; CÚRAM the SFI-funded Centre for Research in Medical Devices and other important biomedical facilities. Through these, and with the extensive clinical patient flow and research opportunities, I am confident that the future will bring sustained partnership and progress in education, training and research.

The next few years offer exciting opportunities for our University and for this region. The establishment of an integrated NUI Galway / Saolta Cancer Centre forms a major component of that development.

NUI Galway will continue to play a major part in this important mission, together serving our society for the public good, in the world and for the world.

**Dr. Kevin Clarkson**  
*Group Clinical Director*  
*Perioperative Services*



The perioperative directorate has been closely involved in facilitating the introduction of the Managed Clinical Academic Cancer Network (MCAN) now led by Professor Michael Kerin, Ms Ger Cooley as General Manager and Ms Olive Gallagher as Director of nursing. We will engage in the coming year to define further the collaborative nature of our interaction.

As part of the Group Integration strategy we are working to identify and optimise theatre capacity between UHG, PUH, RUH and MUH. The project will also involve a realignment of medical personnel such that patient care is delivered and scheduled optimally with considerable redistribution of care from UHG to model 3 and 2 locations. This work will facilitate cancer network development.

Robotic surgery for prostatic cancer is firmly embedded within UHG and tribute has to be given to the steering group led by Mr Paddy O'Malley and Ms E. Moran, CNM. A Rapid Access Haematuria service in RUH is also being initiated by Mr Eamonn Rogers, National Clinical Lead in Urology with the expectation of improving overall access and performance in diagnosis of bladder cancers in particular.

While the overall asset base and personnel from multiple disciplines remain challenged we have increased access to scheduled surgery and expect further developments this year through recruitment and better management of existing resources.

**Dr Ramona McLoughlin**  
*Group Clinical Director*  
*Medical Directorate*



It is wonderful to see the new radiation oncology project progressing and taking shape at UHG, this will future proof the radiation oncology programme for all Saolta patients within our region and beyond for the decades ahead. The haematology and medical oncology programme continue to be extremely busy across the Saolta region with all of the Haematology Oncology Day Wards under pressure to meet the demand at each of the hospital sites.

The Rapid Access Lung cancer programme continues to be one of the busiest in the country and we hope to progress a 2<sup>nd</sup> cancer Respiratory Consultant next year to enhance the sustainability of the programme.

The now well established BowelScreen programme is the largest in the country providing faecal immunochemical testing to all those in the 60-69 age group with colonoscopies being provided at UHG, LUH, SUH and RUH. All patients with a suspicion of cancer are subsequently discussed at the weekly GI Multidisciplinary team meeting.

We look forward to working with the Saolta Managed Clinical Academic Network (MCAN) which is due to be established in 2020.



**Dr. Pat Nash**  
*Chief Clinical Director*  
*Saolta University Health Care Group*



Strategically, the most significant development for Cancer Services within the Saolta University Healthcare Group in 2019 is agreement around the establishment of the Saolta Cancer Managed Clinical and Academic network (MCAN). Through the Saolta Integrated Governance Programme, progress was made in relation to the specialties to be included in the Cancer MCAN and on the interactive modelling of the proposed structure. I am delighted to announce the appointment of Professor Michael Kerin as Director, Olive Gallagher as DON and Geraldine Cooley as GM of the Cancer MCAN.

It is hoped that the Cancer MCAN and the Women's and Children's MCAN will be launched early in 2020, initially as a trial of concept. This new structure has the potential to transform service delivery and seamlessly strengthen the clinical and academic linkages between the Saolta University Health Care Group and the National University of Ireland, Galway.

The Cancer Programme for the Saolta University Health Care Group provides high quality multidisciplinary care with personalised treatment plans for all cancer patients across the region. Care is provided through the hub and spoke model with surgery and radiotherapy at the centre and medical oncology across the region.

The Saolta University Health Care Group is proactively working with the National Cancer Control Programme on the implementation of the *National Cancer Strategy 2017 – 2026*, to deliver early diagnosis; improved patient outcomes and enhanced quality of life for cancer survivors. In 2019, both University Hospital Galway and Mayo University Hospital were actively involved with the NCCP NCIS (National Cancer Information System) team in progressing the implementation of the national information system. When implemented, NCIS will facilitate eprescribing for systemic anti-cancer therapy administration and the use of national treatment regimens. It is hoped that NCIS will be rolled out in LUH, PUH & SUH in the next year or so.

Within Saolta, our primary focus is the provision of the best possible care and outcomes for our patients and their families and as Saolta Chief Clinical Director I would like to acknowledge the outstanding commitment and effort by all staff delivering the cancer programme across the Saolta University Health Care Group.





# Clinical Care Services

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## Mr. Ray McLaughlin

*Consultant Breast Surgeon*

*Lead Clinician, Symptomatic Breast Unit*

*Prof. Michael Kerin, Consultant Breast Surgeon  
Ms. Carmel Malone, Consultant Breast Surgeon  
Mr. Karl Sweeney, Consultant Breast Surgeon  
Prof. Kevin Barry, Consultant Breast Surgeon  
Prof Aoife Lowery, Consultant Breast Surgeon  
Pauline McGough, CNM II, Breast Programme  
Judith McLucas/ Tina Howard, Business Manager*

*Mary Grealish, CNS  
Helena Kett, CNS  
Catherine Materson, CNS  
Paula Leonard, CNS  
Liz Moran, CNS  
Nuala Flaherty, CNS*



The Saolta symptomatic breast unit continues to work a high volume multidisciplinary breast service across a range of specialties. The ongoing contribution from radiology, pathology, radiation oncology, medical oncology, surgery and Nursing ensures a successful multidisciplinary approach and better outcomes for patients.

In 2019 we recorded another successful year for the Symptomatic Breast Service across the Saolta University Health Care Group with over 13,800 outpatient attendances and 405 new breast cancers diagnosed. In addition the BreastCheck Programme diagnosed 205 women with breast cancer. Allied to this, over 3000 patients are being maintained on the 5 year surveillance program from the Symptomatic service.

Patients are seen at Triple Assessment Clinics held at the Symptomatic Breast Centre at University Hospital Galway and the satellite centre in Letterkenny University Hospital where they have same day imaging and biopsies performed to facilitate early diagnosis. All patients who have a biopsy are discussed at the multidisciplinary meeting. The Sligo Surveillance Mammography Mobile initiative continues to offer patients who are 5 years post diagnosis an annual mammogram on the site of Sligo University Hospital. These mammograms are read by our consultant radiologist colleagues in UHG ensuring good clinical practice.

There were over 2120 patient discussions at the Symptomatic Breast Service Multidisciplinary meeting in 2019 reflecting the high level of activity around the programme. This ensures that patients are diagnosed, staged and treated in a timely manner and have a better experience and improved outcomes overall.

I wish to extend my sincere thanks to all those who have worked tirelessly to ensure that the breast programme continues to perform as a world class service for patients and service users.

Our performance against the National Cancer Control Programme key performance indicators continues to place us at a high level in the country. We endeavor to see patients with urgent symptoms within two weeks and where possible have their imaging and biopsies performed on the same day. Access for routine referrals continues to be challenging but we proactively manage these referrals on an ongoing basis. The strong link with the Breast Cancer Research Facility at the National University of Ireland, Galway is invaluable. This world class research programme based in the Lambe Institute for Translational Research and led by Professor Michael Kerin focuses on developments and improvements in clinical outcomes for breast cancer patients. The breast cancer team is actively involved in research contributing to and leading out on major publications.

## Symptomatic Breast Outpatient Clinic Attendance data 2019 (Data Source: SBU)

Outpatient Clinic Statistics	UHG	LUH	Total
New patients	5278	2023	7301
Review patients	5372	1168	6540
Total No. of patients seen	10650	3191	13841

**Symptomatic Breast Service Cancer diagnoses 2019 (Data Source: SBU)**

Performance Parameter	UHG	LUH	Total
No. of new patients diagnosed with cancer	325	80	405

**Symptomatic Breast Cancer Surgical Interventions 2019 (Data Source: SBU)**

Surgical Intervention	UHG	LUH
Wide Local Excision	181	53
Excision of Margins	13	6
Mastectomy	75	26
Sentinel Node Biopsy	187	47
Axillary Clearance	63	23
Breast Reconstruction procedures (immediate)	28	8
Breast Reconstruction procedures (delayed)	1	-





# Breast Screening Programme

## **Dr. Aideen Larke**

*Clinical Director & Lead Consultant Radiologist  
BreastCheck West*

*Mr. Karl Sweeney, Lead Surgeon  
Dr Anna Marie O'Connell, Radiologist  
Dr Catherine Glynn, Radiologist  
Ms Jennifer Kelly, Unit Manager  
M. Joan Raftery, RSM*



BreastCheck – The National Breast Screening Programme plays a central role in diagnosis and management of breast cancer in Ireland, providing free mammograms to women aged 50-69 every two years. BreastCheck, a national population based screening programme, lies within the Health & Wellbeing Directorate.

Breast cancer remains the most commonly diagnosed cancer in women in Ireland with over 2,700 women diagnosed each year. Survival has improved as a result of screening, symptomatic detection and improved treatment options. Through providing regular mammograms, BreastCheck works to reduce mortality by detecting breast cancer at the earliest stage, when a woman has more treatment options available and her chosen treatment is likely to be less extensive and more successful

The BreastCheck Western Unit opened in Galway December 2007 to deliver a high quality screening service to almost 80,000 women in the large geographical catchment area in the West and North

West of Ireland. This includes counties Galway, Mayo, Sligo, Donegal, Roscommon, Leitrim, Clare and Tipperary North Riding. Eligible women are invited to attend either the BreastCheck Screening Unit in Galway University Hospital or one of the BreastCheck mobile units across the region, for mammographic screening on a two year call and re-call programme.

In accordance with best practice, international guidelines, and the BreastCheck Clients' Charter, each mammogram is read by two independent experienced breast radiologists. Women with abnormal mammogram results are asked to return to a triple-assessment clinic with additional mammographic views and ultrasound examinations. If any suspicion of cancer remains, an ultrasound- or stereotactically-guided biopsy is performed. All biopsy results are discussed at a multi-disciplinary team meeting, and patients are informed of their result within five working days.





*Ms J. Raftery, RSM, Mr K. Sweeney, Lead Consultant Surgeon,  
Ms J. Kelly, Unit Manager & Dr A. Larke, Clinical Director*

Performance Parameter	Western 2019
Number of women screened	32,073
Number of women re-called for assessment	1,628
Re-call rate	5.07%
Number of women diagnosed with cancer	205

In 2019, 56,640 women were invited for a screening mammogram and 32,073 attended, 1,628 women had an abnormal mammogram and were recalled to triple assessment clinic.

In 2019, the BreastCheck Western Unit diagnosed a total of **205** women with breast cancer. This cancer detection rate is similar to other national and international breast screening services.

BreastCheck delivers an annual programme evaluation report. This confirms that the targets laid out at the beginning of each year are being met and that the level of high quality service is consistent.

BreastCheck commenced the first stage of age expansion rollout in 2015. The programme age will extend to 69 years of age; however that is to be phased in incrementally by one year, every year over

5 years. Therefore as of 2019, the age included women aged 68.

In 2018, BreastCheck introduced the latest in tomosynthesis technology at triple assessment clinics to enhance diagnostic capacity. The tomosynthesis is used in addition to our screening mammography images and to guide our stereotactic biopsies.

BreastCheck is part of the National Cancer Screening Service, which also encompasses CervicalCheck - The National Cervical Screening Programme, BowelScreen - The National Bowel Screening Programme and Diabetic RetinaScreen - The National Diabetic Retinal Screening Programme.





**Mr Mark Regan**  
*Consultant Surgeon*  
*Lead Clinician*



*Professor Oliver McAnena, Consultant Surgeon*  
*Mr Myles Joyce, Consultant Surgeon*  
*Mr Eddie Myers, Consultant Surgeon*  
*Ms Aisling Hogan, Consultant Surgeon*  
*Mr Joseph Garvin, Consultant Surgeon*  
*Ms Emmeline Nugent Consultant Surgeon*

*Ms. Olivia Dunleavy, CNS UHG*  
*Ms. Anna O'Mara, CNS UHG*  
*Ms. Aine Kennedy, CNS Colorectal/Stoma Care*  
*Ms. Mary Quigley, CNS Stoma Care*  
*Ms Aisling Dunne, CNS Stoma Care*

The Colorectal Cancer Programme at UHG and its associated services across the Saolta University Health Care Group aim to provide an effective, safe, high quality and patient centred regional cancer service to the population of the Saolta region. this programme provides high quality care to all its patients, with all colorectal cancer patients being discussed at the Joint Upper & Lower GI Multidisciplinary Meeting, which is held on a weekly basis.

In 2019, fifty multisite Multidisciplinary Meetings (MDM) occurred with 1833 patient discussions and personalised treatment plans decided for each individual cancer patient. Patients have their diagnoses confirmed and their treatment planned by the multidisciplinary team at this meeting with all the relevant professional expertise available.

Referrals from the Bowel Screening programme are discussed at the Joint GI MDT meeting and surgical procedures undertaken by our surgical team. Complex surgery is delivered at the Cancer Centre by an expert consultant surgeon team with a full range of laparoscopic and open surgeries provided as appropriate.

The Colorectal Programme is supported by a Clinical Nurse Specialist (CNS) who assists and supports

patients through the treatment pathway. We wish to thank Olivia Dunleavy for the sterling work and support given to patients during their cancer journey. Mary Quigley and Aisling Dunne run the Stoma Therapy Service; this is a vital and growing component of the colorectal programme at University Hospital Galway providing guidance and support to patients at a very difficult time of their lives.

We welcomed Ms. Emmeline Nugent to UHG and RUH in 2019. Ms. Nugent specialises in Colorectal surgery and has come from the Cleveland Clinic in Ohio to take up her new role with Saolta University Health Care Group.

It is with great sadness we said goodbye to Anna O'Mara CNS, who was an extremely valuable member of the upper and lower GI cancer services team. She showed great empathy and compassion to both her patients and her colleagues during her 5 years with us. She will be greatly missed by her colleagues in UHG. May she rest in peace.

The University Hospital Galway & Letterkenny University Hospital, Rectal Cancer Programme is required to deliver care in line with a national suite of Key Performance Indicators (KPI's) under the National Cancer Control Programme.

## NCCP Rectal Cancer Bi-Annual KPI Returns 2019

NCCP Rectal Cancer Returns 2019	UHG Jan-Jun	LUH Jan-Jun	UHG Jul-Dec	LUH Jul-Dec	Full Year 2019
Newly diagnosed rectal cancer patients referred to the cancer centre	35	11	30	9	85
Newly Diagnosed Primary rectal cancer patients who had a primary radical surgical procedure (APR)	14	8	14	5	41
Total number of BowelScreen Patients with newly diagnosed primary rectal cancer who underwent radical surgery	1	n/a	1	n/a	2

## Colorectal Stoma Care OPD 2019

Mary Quigley, Stoma Care CNS

Aisling Dunne, Stoma Care CNS

The stoma care therapy service continued to provide an extensive programme of support to all colorectal patients in 2019 including mentoring and after care and is considered a critical component of the service.

This programme is multifaceted involving:

- Pre Assessment Clinics
- Pre Op Counselling
- Creating new stomas
- Reversal of stomas
- 
- Inpatient & Outpatient Reviews
- PEG consultations
- Enterocutaenous fistulae
- Telephone Triage/support

2019 was another busy year with increased activity in supports provided as more and more patients return to OPD to the nurse led stoma clinics for support and follow up care.

To increase hospital avoidance we are closely working to help improve the support in the community by offering our Public Health Nurses (PHN's) the opportunity to complete our foundation course in Stoma Care. This is a distance learning module with a one day practical workshop.

Colorectal/ Stoma Care Activity 2019	Number
Pre-assessment clinic activity	67
Pre- op siting/counselling (no stoma created)	66
New Stoma created	209 (71% oncology related)
Reversal of stoma	27
In-patients review (established stoma with problems, e.g. Chemo/Radiotherapy related)	178
In-patient referrals (non-cancer related)	
Outpatient activity (Nurse Led Clinic)	673

## Portiuncula University Hospital

*Mr Eddie Myers, Consultant Surgeon  
Mr Joseph Garvin, Consultant Surgeon  
Ms. Aine Kennedy, CNS Colorectal/Stoma Care*

The surgical service comprises of:

- 2 Surgical outpatients per week
- 3 endoscopy lists per week
- 2 operating elective lists per week in PUH
- Operating lists in UHG

In 2019 there were a total of **64** new cases of colorectal cancer diagnosed in Portiuncula University hospital (**14** rectal cancers and **50** colon cancers). After initial diagnosis, imaging and review are completed within the hospital. As per NCCP guidelines all patients are discussed at the Joint Upper & Lower GI Multidisciplinary Meeting which is a multisite event. This weekly MDM provides a structured and co-ordinated approach to the delivery of cancer care within the Saolta group. Once the treatment plan has been established, surgery may either be performed in PUH or UHG with continued review in surgical clinics as well as Medical Oncology review at the weekly Outpatient Clinic in Portiuncula.

In Portiuncula this service is supported by Áine Kennedy Colorectal and Stoma CNS. This role facilitates the management and support of colorectal cancer patients as they follow the

pathway through referral, diagnosis, treatment and follow up in addition to coordinating the colorectal MDM.

Another large part of the role is in relation to the care and management of ostomates, which includes

- sitting pre operatively and providing education and counselling,
- post operative education, review during any admission in Portiuncula or as an outpatient
- telephone service providing support to ostomates and other health care professionals.

In 2019 50 new stoma patients were seen which includes both in house surgery and referral from another hospital and there were 795 patient reviews in both the colorectal and stoma service.

In conjunction with UHG stoma care service we continued with our annual patient information evening called "A stoma in your Life ". This was a very successful evening with over 220 people in attendance with informative speakers about all aspects of stoma care.



*BowelScreen Awareness Event held at PUH, left to Right: Aine Kennedy, CNS Colorectal & Stoma Specialist, Mr. Eddie Myers, Consultant Surgeon & Mr Joseph Garvin, Consultant Surgeon*



## Dr. Eoin Slattery

*Consultant Gastroenterologist  
Lead Clinician*

*Mr. Kevin Walsh, SUH*

*Mary Cassidy, BowelScreen RANP, SUH*

*Lorraine Harney BowelScreen CNMII, RUH*

*Amy Carroll, BowelScreen CNS, RUH*

*Deirdre Diver, BowelScreen RANP, LUH*

*Deirdre Gallagher, BowelScreen RN, UHG*



The Saolta University Health Care Group has been screening BowelScreen clients since May 2013 and continues to contribute to the provision of Bowel cancer screening for the West of Ireland population. Four of the Saolta Group hospitals are Bowelscreen centres, UHG, LUH, SUH & RUH. Over the course of 2019 almost 1000 patients were screened for colorectal cancer throughout the Saolta Group via the Bowelscreen programme. Bowel screening aims to detect signs of bowel cancer where there are no symptoms. Around 2800 people are diagnosed with bowel cancer in Ireland each year. With bowel cancer the third most common cancers in men and the fourth most common cancer in women in Ireland.

In 2019 as in other years, there was a consistently high volumes of patients screened for colorectal cancer throughout the Saolta Group via the BowelScreen Programmes

## University Hospital Galway

UHG commenced screening in May 2013 as part of the National BowelScreen Programme, currently aimed at those aged 60-69. Colonoscopies have been performed following a positive FIT, or Faecal Immunochemical Test for an increasing number of patients.

UHG Pathology Department reports on all the pathology detected in BowelScreen colonoscopies carried out in Saolta University Health Care Group and all cases are reviewed at our weekly polyp MDM. Similarly all surgeries on cancers detected as part of BowelScreen in the Saolta Group are treated in UHG, after discussion and planning at the GI Cancer MDM.

UHG has also proved a regional complex polyp service for the Saolta Group. Large, complex polyps that previously would have required surgery may now be removed through advanced techniques known as endoscopic mucosal resection (or EMR).



*LUH: Mary Rutland Endoscopy Staff Nurse, Kathleen O'Donnell Theatre Operative, Deirdre Diver RANP Gastroenterology /BowelScreen and Grainne Boyle CNS BowelScreen.*

## Letterkenny University Hospital

Letterkenny University Hospital has been a referral centre for Bowelscreen, the National Colorectal Cancer Screening programme since 2014. The service provides bowel screening for men and women aged 60 – 69 in most of Co. Donegal (south Donegal is covered by Bowel Screen in Sligo University Hospital).

Dr Chris Steele, Consultant Gastroenterologist, is the clinical lead for the programme in Letterkenny University Hospital. The bowel screen service in LUH is facilitated by the Registered Advanced Nurse Practitioner (RANP) in Gastroenterology Deirdre Diver.

All Bowel Screen patients are pre-assessed by the RANP and if deemed suitable attend for colonoscopy to LUH. By the end of December 2019 a total of 584 clients had a screening colonoscopy following a positive FIT test, and 261 a surveillance follow up colonoscopy. 714 clients had polyps detected and 49 clients had cancers detected. The continuing care pathway for these clients includes referral to the surgical and or wider MDT at UCHG.

The success of bowel screening at LUH is attributed to the huge dedication and commitment of the endoscopy and wider MDT team. The Endoscopy Unit at LUH continues to demonstrate its commitment to maintain and develop a quality endoscopy service.

## Sligo University Hospital

Sligo University Hospital commenced screening in May 2013, across a wide geographical area, including Sligo and south Donegal.

Clinical lead for the programme in Sligo is Dr Kevin Walsh, Consultant Gastroenterologist. These were reported by the GI pathologists involved in Bowel Screen based in UHG.

## Roscommon University Hospital, BowelScreen

Roscommon University Hospital commenced screening in March 2014 as part of the National BowelScreen Programme. The programme is currently aimed at those aged 60-69 years old.

All BowelScreen patients are pre-assessed by either the RANP or CNM2, and if deemed suitable attend for colonoscopy at RUH. BowelScreen colonoscopies are performed by Mr Mohammed Eldin (Clinical Lead and Consultant Surgeon), Mr Tapas Chatterjee (Associate Specialist, Endoscopy) and Ms Amy Forde (Registered Advanced Nurse Practitioner).

We would like to welcome Dr Diarmuid Manning (Consultant Gastroenterologist), who has recently commenced Bowel Screening in RUH.

Since the last publication, we have said goodbye to Mr Liam McMullin (Consultant Surgeon) and would like to wish him all the very best on his retirement. Mr McMullin provided an excellent and committed service to the hospital for 17 years.

The screening patients attending RUH are supported through their journey not only by those directly involved in the BowelScreen Programme but by a wide team of dedicated staff in the Endoscopy Unit and wider members of the Multi-Disciplinary Team.

The staff in RUH have, and continue to provide a service that is patient centred and of the highest standard. We continue to review and audit our service, ensuring that we meet all the Key Performance

Over the course of the year, a number of patients were referred to Dr. Eoin Slattery Lead Clinician, Consultant Gastroenterologist for EMR (Endoscopic Mucosal Resection) for removal of large complex polyps. Two of these patients subsequently had a colorectal cancer diagnosis, while nine patients in total underwent surgery for a detected malignancy.

Indicators as set out by the National Screening Service.

Over 230 BowelScreen colonoscopies were performed (Index/Surveillance) in RUH in 2019, out of which there was 9 bowel cancers detected representing a 50% increase in the number of bowel cancers detected from 2018. A number of patients were referred to Dr Eoin Slattery in UHG for EMR.

Each patient diagnosed with a bowel cancer is met by our Colorectal CNS Olive Cummins who ensures that the patient receives an efficient diagnostic work up and a seamless transfer of care to our colleagues in UHG/PUH for further management.



Amy Forde RANP and Olive Cummins CNS promoting Bowel Cancer Awareness month at RUH

## RUH RANP Gastroenterology/Bowel Screen end of year report 2018 & 2019

Bowel Screen Activity	2018	2019
Number of patients referred for pre-assessment	224	297
Number of patients declined colonoscopy	21	37
Number of patients deemed unsuitable for colonoscopy or CTC	6	7
<b>Number of index and surveillance bowel screen colonoscopies performed</b>	<b>229</b>	<b>234</b>
Number of repeat colonoscopies performed	18	23
<b>Total number of colonoscopies performed for Bowel Screen</b>	<b>247</b>	<b>257</b>
Number of patients referred from CTC either direct from pre-assessment or following an incomplete colonoscopy	4	4
Number of patients with pathology referred for discussion at the bowel screen MDM	183	193
<b>Numbers of cancers confirmed</b>	<b>6</b>	<b>9</b>



## **Dr Marcia Bell**

*Consultant Endocrinologist  
Lead Clinician*

*Prof. Michael Kerin, Consultant Surgeon  
Prof. Aoife Lowery, Consultant Surgeon  
Prof. Sean Dinneen, Consultant Endocrinologist  
Ms. Orla Young, Consultant ENT*



*Prof. Fidelma Dunne, Consultant Endocrinologist  
Prof. Tim O'Brien, Consultant Endocrinologist  
Dr. Aonghus O'Sullivan, Consultant Endocrinologist  
Dr. Conall Denny, Consultant Endocrinologist*

The Endocrinology Programme at University Hospital Galway provides a complete diagnostic, treatment and follow-up service for patients with thyroid cancer and other endocrinology cancers such as functioning endocrine tumours and adrenal cancers. The Endocrine Multidisciplinary Cancer Programme provides integrated care to patients with thyroid and endocrinal cancer as well as contributing to the National Cancer Control Neuroendocrine Tumour Programme. The endocrine programme at UHG continues to grow year on year and aims to provide the highest standard of care and expertise to patients with thyroid and endocrine cancer across the Saolta Group.

The Programme at UHG is led by Dr Marcia Bell with a team of endocrinologists and endocrine surgeons supported by a team of experts from radiology, chemical pathology, medical and radiation oncology.

The primary purpose of the MDM is to ensure best practice and to standardize patient care. Care pathways for each individual patient are decided at the multidisciplinary meeting. The Centre of Excellence for Neuroendocrine Tumours (NETs) operates on a multi-centre platform between St Vincent's University Hospital in Dublin, Mercy University Hospital Cork in the south and University Hospital Galway in the West. This enhances the services for Saolta Health Care Group patients diagnosed with neuroendocrine cancer by providing increased exposure to new treatments and approaches, inclusion in drug and other trials, as well as other benefits.

Although Thyroid Cancer is rare, it is the most common endocrine malignancy, with an increase in incidence reported. The disease is more common in women than men, at a ratio of 2 to 1. Most thyroid cancers can be treated very successfully with surgery, hormone therapy, radioactive iodine (RAI), radiotherapy and

chemotherapy or a combination. The decision to use radio iodine treatment after surgery is made based on the size of the cancer and the risk of a recurrence.

Survival for some cancers has greatly improved in recent years including thyroid cancer where five – ten year survival is now over 90%. The increased number of survivors underscores the importance of addressing survivor health in Ireland.

The cancer Endocrine Programme takes place from the Centre for Diabetes Endocrinology and Metabolism (CDEM) at UHG. As the tertiary referral center in the West of Ireland, we manage a significant volume and complexity of patients requiring specialist endocrinology cancer input.

CDEM Cancer Clinical Services provides both OPD and inpatient service for almost 2,000 cancer patients per year as illustrated in the table below:

### **Key priority for 2020**

To enable the Cancer Endocrine Programme at UHG to expand capacity and significantly contribute to better patient care in the years ahead, a key priority is the appointment of an Endocrinologist with a specialist interest in Cancer Care. This will contribute to the future sustainability of the service and most importantly to:

- Enhanced patient care, safety, and outcomes
- Faster diagnosis, follow-up and management of endocrine malignancy.
- Enhanced patient communication
- Development of enhancement initiatives through audit with a specific focus on efficiencies and better delivery of care.
- Innovation through development of systems processes in cancer endocrinology.



**Mr Michael O'Leary**  
*Consultant Gynaecology Surgeon*  
*Lead Clinician*



*Ms. Katherine Astbury, Consultant Gynaecology Surgeon*  
*Ms. Joanne Higgins, CNS Gynaecology*

A tertiary referral gynaecological oncology services is provided at University Hospital Galway which serves to provide this service throughout the Saolta Group. The service provided at University Hospital Galway includes surgery, medical oncology, radiotherapy, and a multidisciplinary team of radiologists, pathologists, nurse specialists, psychologists, dieticians, physiotherapists and research nurses.

The services are delivered on an outpatient, ambulatory and inpatient basis. In 2019 the team managed 101 women and coordinated the care for ongoing cases. In addition to this, the team were responsible for the coordination of the care of an additional 120 women in 2019 undergoing adjunct therapy and palliative care.

## **Total Cancer Surgeries 2019**

Endometrial	Ovarian	Vulval	Cervix	Total Surgeries	Adjunct therapy & palliative treatment	Total
42	52	1	6	101	120	221

## **The Cervical Screening Saolta Programme**

There are currently 4 colposcopy units located within the Saolta University Healthcare Group each of which are part of the National Cervical Screening Programme. Colposcopy clinics take place at UHG, LUH, MUH & SUH. Each of the colposcopy clinics have an identified Consultant lead and operate under a memorandum of understanding (MOU) agreed between the unit and Cervicalcheck Ireland.

On average the Colposcopy Programme for Saolta receive over 2,000 referrals annually and diagnoses over 25 cancers a year. Patients are discussed at MDM and a treatment plan agreed and implemented in line with national guidelines



**Ms. Orla Young**

*Consultant Otolaryngologist, Head & Neck Surgeon  
Lead Clinician*



*Professor Ivan Keogh Consultant ENT*

*Mr John Lang Consultant ENT*

*Ms Mona Thornton Consultant ENT*

*Mr Peter Gormley Consultant ENT*

*Mr Patrick McCann Maxillofacial*

*Mr Tom Barry Maxillofacial*

*Ms. Carol Brennan, CNS ENT*

*Ms. Karen Malherbe SLT*

University Hospital Galway, as the Level 4 Hospital and Cancer Centre is the tertiary referral centre for Head and Neck cancer for the West of Ireland and beyond. General Practitioners and other Saolta Group Hospitals refer patients to the Head & Neck department at UHG for diagnosis and treatment.

It is well recognised that dentists too play an important role in the prevention and early detection of mouth, head and neck cancer. They see many patients on a regular basis for routine dental check-ups, where the oral cavity is fully examined and may lead to the early detection of mouth cancer and therefore better outcomes for patients.

The Head and Neck cancer programme at UHG is provided by the Otolaryngology, Head and Neck Department (ENT) and the Department of Maxillofacial Surgery.

The ENT Department consists of five consultant surgeons; Professor Ivan Keogh, Mr Peter Gormley, Mr John Lang, Ms Mona Thornton & Ms Orla Young and a team that includes a senior and junior SpR, registrars, two SHO's and one intern. Outpatient clinics are held on a daily basis at UHG, once a week in MUH and once fortnightly in RUH. The Maxillofacial department consists of two consultants Mr Patrick McCann and Mr Tom Barry and a team of registrars. Maxillofacial outpatients are held at UHG and PUH.

In 2019, the Head and Neck oncology Multidisciplinary Team was extremely busy with 747 patient discussions taking place over the 12 month period. The specialist team is comprised of Consultant Surgeons, Medical Oncologists, Radiation Oncologists, Radiologists, Pathologists, Clinical Nurse Specialist, Speech and Language Therapist and an MDM Co-ordinator.

The Clinical Nurse Specialist, Ms Carol Brennan is a critical link between Surgical Oncology Services in ENT and Maxillofacial Departments and the Radiation and Medical Oncology Services. Carol provides

support; information and advice to the HANO patients from investigation stages to diagnosis, through treatment and long term follow up.

Karen Malherbe, our Senior Speech & Language Therapist provides assessment and management of swallowing, voice and speech difficulties that may arise for head and neck oncology patients. Karen follows the patient from initial diagnosis and surgery through to radiotherapy treatment by providing support to patients who may experience swallowing difficulties during their treatment. Speech and Language support is provided to both inpatients and outpatients at UHG.

In 2019 there were 132 head and neck cancer patients diagnosed and treated at University Hospital Galway.

Trans Oral Laser Microsurgery continues to be our treatment of choice for cases of early glottic carcinomas. Using CO2 laser, early laryngeal cancers can be excised trans-orally under general anaesthetic. This provides an excellent alternative treatment option for patients to the standard 6 week External Beam Radiation Therapy (EBT). Currently, UHG is one of the highest volume TLM centres in the country with on average 18 – 20 patients being treated annually.

The National Cancer Control Programme (NCCP) has recognised the UHG Head and Neck Oncology Programme for its multidisciplinary strength, with the presence of specialist surgeons from both ENT & Maxillofacial Departments and Plastic surgeons for major reconstructive surgery.

The presence of onsite Radiation Oncology & Medical Oncology, along with a dedicated Clinical Nurse Specialist, Speech and Language Therapy support and Palliative Care services means that patients attending the Head and Neck Oncology Programme, have direct access locally to world class care at University Hospital Galway.





## Dr. Ruth Gilmore

*Consultant Haematologist  
Lead Clinician*

## Dr. Amjad Hayat

*National Clinical Lead NCCP  
Consultant Haematologist  
Lead Clinician*



The extensive Haematology Clinical Programme within the Saolta University Healthcare Group diagnoses and delivers specialist care to patients across the West of Ireland with general and malignant haematological conditions, including leukaemia, lymphoma and myeloma.

The multicomponent Haematology clinical oncology programme includes:

- The Stem Cell Transplant Programme: based in Galway University Hospitals.
- Day Services: Patients with blood cancers are managed in all of the Saolta Hospital Group Haematology /Oncology Ambulatory day units. Treatment is delivered under the care of onsite Haematology consultants, by teams of specialist trained nurses, advanced nurse practitioners, specialist registrars and medical & pharmaceutical staff. Consultant led outpatient clinics are ongoing at regional centres.
- Inpatient Services: Patients requiring intensive haematological chemotherapy & anti-cancer treatments are managed primarily in Galway University Hospital with supportive care provided at regional centres at Letterkenny University Hospitals and Sligo University Hospital.
- Consultative Haematology service for patients in UHG and other hospital services including medical oncology, paediatrics, obs & gynae services and through involvement in transfusion medicine, haemostasis & thrombosis across all hospital sites.
- Haematologists oversee and direct laboratory services and provide essential interpretation of blood films, bone marrows and complex diagnostic tests for haematological malignancies.
- Haematologists have a strong track record of involvement in high quality clinical trials, which have led to continuous improvement in malignant haematological outcomes.

Hospital	Stem Cell Transplant Programme	Inpatient services	Day Ambulatory Treatment	Outpatient Services
UHG	Yes	Yes	Yes	Yes
LUH	-	Yes	Yes	Yes
MUH	-	-	Yes	Yes
PUH	-	-	Yes	Yes
SUH	-	Yes	Yes	Yes

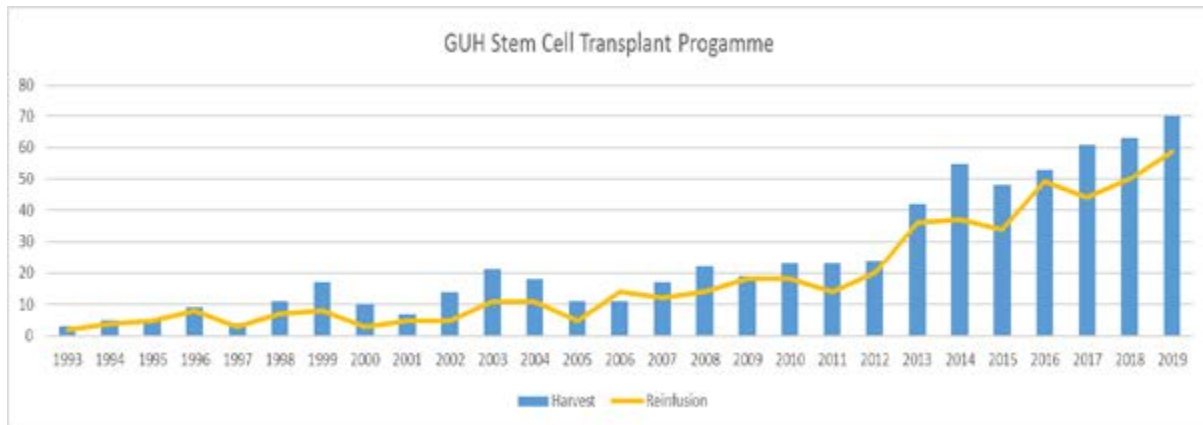
The Saolta Haematology Clinical Programme is active in the five Saolta Group Hospitals outlined above. UHG provides haematology inpatient services for patients across Galway and Mayo with day and outpatient services available in Galway, Portlincula and Mayo University Hospital. Letterkenny & Sligo University Hospitals offer both inpatient, day and outpatient clinics.

Six consultant haematologists based in UHG and two consultant haematologists at both Sligo and Letterkenny University Hospitals lead the clinical Haematology Services with the support of medical teams, advanced nurse practitioners, clinical nurse specialists, health & social care professionals and specialist pharmacists. Two Consultant Haematologists in UHG cover MUH, PUH and RUH

providing clinical, laboratory and transfusion advice to the clinicians and laboratories in these hospitals. Multidisciplinary care is provided across the Saolta Group through the MDM Programme with haematologists from Sligo and Letterkenny linking to tumour site-specific multidisciplinary meeting at UHG on an ongoing basis to discuss individual patient cases and plan treatment pathways.

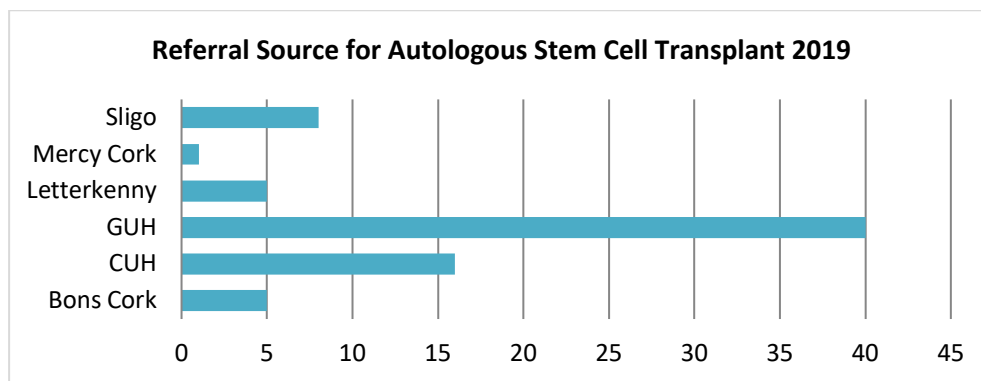
UHG has been the primary specialist centre for Autologous Stem Cell Transplantation for people with haematological malignancies from the West & South of Ireland since 1993.

The programme involves the peripheral harvesting, processing, storage and reinfusion of stem cells for the treatment of many cancers including myeloma and lymphoma



In 2019, the programme accepted referrals from Saolta Group Hospitals and from the South South West Hospital Group.

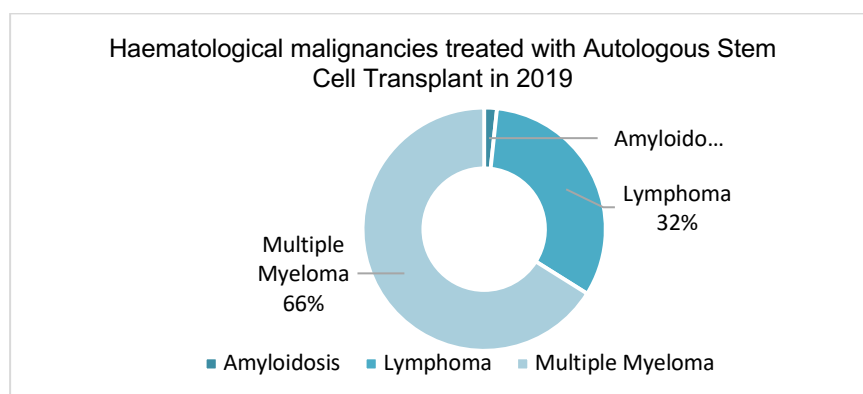
The UHG Stem Cell Transplant Programme involves a team of experienced consultant Haematologists working with a diverse expert multidisciplinary team including clinical nurse specialists, specialist registrars, biomedical scientists, specially trained nursing team & pharmacists.



The Stem Cell Transplant Programme in UHG, treating multiple myeloma, lymphoma and other cancers has grown exponentially at +360% in ten years from 2009 – 2019.

In the last five years 2013-2019, 296 patients have received an autologous stem cell transplant through the programme in UHG.

In 2019, 66% of transplants were for the treatment of Multiple Myeloma, 32% for Lymphoma and a small percentage of patients with other conditions received autologous stem cell transplants.



All stages of autologous stem cell transplantation take place on the UHG site with apheresis and the clinical care of patients during transplant occurring in the newly built 25 bed Claddagh ward. This specialist ward of 25 individual positive ventilation rooms ensure high quality care & improved patient safety, reducing infection risk during this and other intensive haematology treatments. The processing and storage of stem cells occurs in the fully licensed and regulated Galway Blood & Tissue Establishment Laboratory on site.

## Haematology Outpatient Activity 2019

The Haematology Programme at UHG was extremely busy in 2019 as depicted in the OPD activity table below:

Description	Attendance
New Patient Attendances	955
Review Patient Attendances	4913
Total	5868

## National Cancer Control Programme KPIs for Systemic Anti Cancer Therapy-

Each of the Saolta Hospitals delivering systemic anti cancer therapies across the Group submit KPI reports on a monthly basis to the National Cancer Control Programme (NCCP). This KPI provides a target of access to treatment in the day ward setting of up to 15 working days from date of referral (Haematology & Medical Oncology).

In 2019, the overall Group performance averaged 90% ranging from 87% at UHG to 100% in SUH. The

key deficit is capacity at UHG, requiring intensive local management on a daily basis in the interim while awaiting the new Ambulatory Care Centre.

UHG are exploring ways to utilise capacity in the community and actively pursuing sustainable and safe ways to deliver more care in the community. (Reference Medical Oncology programme)

## Challenges & Quality Improvements

### Patient flow & resource utilization

It is important to note that there is a significant demand capacity deficit for dedicated haematology beds in UHG due to the exponential rise in demand for specialist care in the treatment of haematological cancers. Capacity to facilitate ongoing and supportive care in SUH and LUH is also limited. Staffing remains a priority at all sites. Raising awareness of the time sensitive treatment requirements of some haematological malignancies and achieving dedicated funding to ensure timely treatment availability is a key priority of the Saolta Clinical Haematology Programme.

The programme aims to meet the needs of patients across a large geographical area and ensuring care is delivered at the right time, in the right place is a key priority. The programme aims to deliver key quality improvements in timely access to effective, efficient and person centred care over the next five years 2019-2024.

### Stem Cell Processing & Storage Laboratory

The Stem Cell Processing Laboratory, a key aspect of the stem cell transplant programme requires immediate upgrade and this has been included in the UHG capital expenditure plan. Work has yet to start.

### Haematology Ambulatory Care

The University Hospital Galway Day Ward and Outpatient facilities remain inadequate for the delivery of the Clinical Haematology Oncology programme. The 2019 KPMG Options Appraisal for UHG, commissioned by the Group Clinical Director, identified Interim priority developments for a state of the art Ambulatory Care Centre at UHG. The vision is for a comprehensive state of the art complex that will include a Phlebotomy suite, an Outpatient suite with capacity for isolation for immunosuppressed patients, a Haematology Oncology Day Ward, and an Acute Assessment Area, Rapid Access Services and dedicated imaging suite.

It is envisaged that providing facilities to deliver more day procedures and conduct outpatient services for immunosuppressed patients will result in greater bed availability and improved haematology patient experience in University Hospital Galway and pave the way for international accreditation of the service.

The ambulatory cancer care build will be replicated across the region in all of the Saolta Hospitals administering SACT in line with balanced regional development plan and Slaintecare. We plan to progress this as a matter of urgency and will continue to evaluate patient flow and processes in the meantime to maximise utilisation of resources. Investment in dedicated Cancer infrastructure is now a key priority for the Saolta University Health Care Group and it is imperative that it is delivered as soon as possible



**Dr David Breen**

*Consultant Respiratory Physician  
Lead Clinician, Interventional Pulmonologist  
Imelda Fleming, cANP  
Aisling Coyne, CNMII  
Jacinta Murphy, SN*



**Mr Alan Soo**

*Consultant Thoracic Surgeon  
(Thoracic Surgery Lead)  
Marie Cloonan, CMNII  
Fiona Burke, CMNII*

There have been major advances in the management of lung cancer and preventative medicine over the last two decades. Despite this, the incidence of lung cancer, in Ireland, remain stubbornly high and the five year survival is significantly lower than that of other common cancers.

Lung Cancer is the third most common type of cancer in both men and women in Ireland. 1,407 males and 1,157 females are diagnosed with lung cancer and 1,069 males and 785 females die from it annually in Ireland (NCRI).

It is the biggest cancer killer in Ireland causing one in five of all cancer related deaths. Lung cancer claims more lives annually than breast cancer, colon cancer, and prostate cancer combined. The five year survival rate is 17.9%.

The median age group at the time of diagnosis is 70-74. This population frequently has multiple competing co-morbidities and a poor performance status. In addition there remains a disproportionately high number of cases from the lower socioeconomic background. Combine this with the fact that the majority of cases are diagnosed at a late stage it is not difficult to see why the lung cancer statistics remain stark.

The key to improving survival is early detection and that is what the Rapid Access Lung Clinic aims to support. There have been major advances in the management of lung cancer over the last two decades. This includes significant efforts in addressing the primary cause for the disease,

smoking cessation advances and improvements in both invasive and non-invasive diagnostic methods.

## Meet our team:

The RAL programme at UHG is led by Dr D Breen, Consultant Respiratory Physician & Interventional Pulmonologist. He is the clinical lead of the lung cancer service in the Saolta Group and the chair of the NCCP Lung Leads Group. He is supported by respiratory SpRs and a specialised nursing team in the rapid access clinic.

In 2019, nurse Imelda Fleming went on to complete her master's degree and has since become the ANP within the service. She is a referrer of radiological procedures and is a registered nurse prescriber. Imelda also represents the lung ANPs on the NCCP Lung Leads Group. She has set up a specialist nurse-led Lung Cancer Survivorship Programme for the ongoing care and support of the lung cancer survivors group. She has also set up a Virtual surveillance clinic for the ongoing follow up of lung nodules. Imelda is the designated key worker for these patients. This has been a great advancement in the service. She provides them with great support, integrating specially focused education sessions for her patient group and ensuring that they are provided with a holistic service.

Ashling Coyne joined the service in 2019 as the CNM 2. She brings over 10 years experience of working within respiratory nursing and smoking cessation service. Ashling manages the clinic and ensures that the NCCP KPI's are the focus of the service.

## Rapid Access Lung Clinic History

The National Cancer Control Programme (NCCP) was set up to reorganise the way cancer care is delivered so that our cancer survival rates would compare more favorably with the best in Europe and the rest of the world. Rapid Access Lung Clinics were set up as part of the NCCP in order that patients could be diagnosed quickly and start treatment as soon as possible once cancer has been confirmed.

The RALC opened in Galway in 2010. The clinic coordinates the rapid assessment of patients referred from their primary care facilities.

The table below indicates the referral rates to the RAL and the numbers seen within 10 working days as per NCCP KPI.

## NCCP Rapid Access Lung Clinic Activity 2019

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
No. of Ptns Attended	39	58	46	63	47	41	32	47	50	40	66	42	571
Seen within 10 working days	38	43	40	56	47	37	32	40	49	39	62	37	520
No. of Ptns Diagnosed	34	20	29	47	31	32	13	33	34	21	36	37	367

## UHG RALC

In patients with (presumed) lung cancer, timely access to specialist services, that ensures rapid assessment and diagnostics by a specialist team and onward referral for appropriate treatments, has long been identified as the key for improving outcomes.

The RALC works under the principles and KPI's set out by the NCCP. The primary objective is to review patients within 10 days of receipt of the referral. At their initial clinic they are met by one of the RAL nurses. This first meeting is often a difficult time for the patient. The RAL nurses act as support during this time. Following their nursing assessment the patients will undergo a consultation with Dr Breen and a follow up plan is made. It is imperative that the patient is at the centre of every decision made and they are kept up to date with their care plan.

The number of referrals sent to the RAL increases every year from 461 in 2012 to 571 in 2019. This is reducing the number of inpatient diagnosis of lung cancer. Keeping patients out of hospital is ideal for reducing patient anxiety. The RAL in Galway is one of the busiest lung cancer programmes in the country.

Patients who are smokers at the time of their clinic appointment will be advised to quit and have a discussion with a member of our nursing team on how best to do this. They will be referred to the community smoking cessation clinic for ongoing advice and support. For patients who go on to have a cancer diagnosis this part of the process is key. Smoking cessation is associated with more effective treatments and a better prognosis for the patient. For patients with early stage disease, quitting will reduce post-operative complications. For patients with advanced disease, quitting smoking is linked to decreased dyspnea and fatigue. Reducing the severity of symptoms is a key component of treating advanced disease. For the patients who do not have a cancer diagnosis the referral is still highly important. The HSE has set out a plan to make Ireland smoke free by 2025. It is the responsibility of each and every health care worker to ask and advise patients on their tobacco use.

We have all made a huge effort to ensure that all of our patients are asked about their smoking status and that they are offered advice and support.



### Diagnostic procedures:

The RALC relies on Unit 8 Merlin Park University Hospital for their diagnostic activity. Here the patients are met by professional nurses who care for them on the day of their procedure. Unit 8 staff are skilled endoscopy nurses who assist the consultants in their procedures. Following their

diagnostic procedures the patients are discussed at the Lung Cancer MDM.

The activity for biopsies performed via Unit 8 in 2019 are tabulated below:

### Unit 8 Statistics 2019

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
Bronchoscopies	17	20	26	28	36	21	30	32	23	24	15	19	291
Endobronchial Ultrasound (EBUS)	16	25	31	31	25	26	21	25	24	29	24	23	300

### Multi-Disciplinary Team Meetings

The MDM is held in UHG on Mondays and joined by video link by Sligo, Mayo & Roscommon University Hospitals. Patients from across the Saolta Group are discussed by a panel of experts including specialities of respiratory medicine, Thoracic surgery, Medical Oncology, Radiation oncology, Radiology and Pathology. Dr Breen is the MDM lead and together with Nainsi and Janet they ensure that patients are discussed at the appropriate time.

It is at this meeting that the data is obtained for cancer diagnosis. Here the cases will be discussed individually and an outcome is recommended based on the expert opinions of the team. According to the National Cancer Registry Ireland (NCRI) the number of new primary lung cancers diagnosed in Galway increased by 36% over the two year period 2017 to 2019.

NCRI: National Cancer Registry Ireland, Factsheet Lung, Ireland:

<https://www.ncri.ie/sites/ncri/files/factsheets/Factsheet%20lung.pdf>

## Thoracic Surgical Programme



*Photo by permission of patient and Cardiothoracic staff*

The Department of Cardiothoracic Surgery at UHG is the only dedicated thoracic surgery centre in the Saolta University Healthcare Group and is one of four NCCP designated thoracic surgery centres nationally. The department aims to provide evidence based surgical treatments for thoracic diseases to the highest standard. The unit performs regular audits and research to ensure that all patients receive the best possible treatment whilst under the care of the dedicated cardiothoracic surgical team.

Patients under the care of the cardiothoracic team at UHG are treated by a multidisciplinary team of health professionals including consultant surgeons, specialist nurses, respiratory physiologists and physiotherapists.

The Cardiothoracic surgery team work closely with the Department of Respiratory Medicine and the oncology department caring for patients from all hospitals within the Saolta University Healthcare Group.

In UHG, the cardiothoracic surgery department provides all aspects of thoracic surgery.

### **A team of specialist surgeons treat the following diseases:**

- Lung cancer
- Benign diseases and tumours of the lung
- Chest reconstruction after major trauma or surgery
- Pectus surgery for chest wall deformity
- Lung volume reduction surgery for emphysema
- Mediastinal tumours and diseases (including the surgical treatment of myasthenia gravis)
- Mesothelioma
  - Pleural diseases (including pneumothorax, infections and pleural effusions)
  - Chest wall tumours
  - Sympathectomy for hyperhidrosis (excessive sweating)
  - Plication for diaphragm paralysis

### **Patient Treatment Pathway**

The care pathway starts with referral largely from the Joint Thoracic Clinic following the weekly lung multidisciplinary meeting. The department also accepts direct referrals from physicians and GPs.

All patients undergoing thoracic surgery for suspected lung cancer are enrolled in the ERAS programme (Enhanced Recovery After Surgery).

The **Thoracic ERAS programme** in UHG includes the following:-

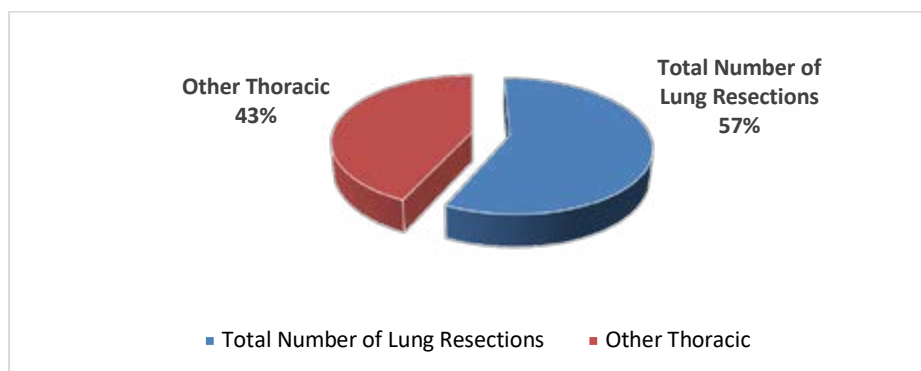
- **Pre assessment.** All referred patients undergo a pre assessment to assess suitability for surgery. Here, patients get a further opportunity to discuss their surgical treatment with the medical team. Potential complications are identified and counter measures instituted and discharge planning performed.
- **Pre-habilitation.** The pre-habilitation programme is carried out by a team of dedicated thoracic physiotherapists based in Merlin Park Hospital. Here, the patients undergo detailed fitness assessments. Following that, a personalised exercise programme is developed for each patient prior to surgery.
- **Post op pain management.** This is performed in conjunction with the Pain service at UHG. Patients are supplied with a pre-operative prescription for pain relief which is taken for two days pre-surgery to reduce pain related complications both peri and post-operatively
- **Admission.** Patients are admitted the evening prior to or the morning of surgery (DOSA- Day Of Surgery Admission) and go to the PACU (Post Anaesthesia Care Unit) for a night following surgery. This is for close monitoring of vital signs, analgesia and chest drainage.

- **Carbohydrate Loading** pre-operatively.
- **Digital monitored chest drain** (Medala Thopaz® suction unit) is used post operatively in keeping with international best practice.

The department runs a minimally invasive programme for both lung resection and resection

of mediastinal tumours (i.e. VATS lobectomy and thymectomy). These techniques allow the team to perform surgery on patients who previously may have been turned down for surgery and also allow for swifter recovery and shorter inpatient stays.

### Thoracic Surgical Activity 2019



### UHG Cardiothoracic Surgical Unit 2019 Activity

Procedure	Activity
Total Number of Thoracic Procedures	177
Total Number of Lung Resections	101
Other Thoracic	76
<b>Procedure Type</b>	
Lobectomy	70
Pneumonectomy	7
Sleeve Resection	0
Segmentectomy	1
Wedge Resection	23
Rib Resection/Chest Wall Biopsy/Resection/Reconstruction	8
Mediastinal Biopsy/Excision of mediastinal mass	7
Pericardial biopsy/pericardial cyst excision	0
Bullectomy/Blebectomy/Pleurectomy/Pleurodesis	15
Decortication	7
VATS/Pleural/Open Biopsy	15
Thyroidectomy	3
Thymectomy	2
Pectus Repair	0
Other	19
<b>Grand Total</b>	<b>177</b>



**Mr. Chris Collins**  
*Consultant Surgeon*  
*Lead Clinician*

*Prof. Oliver Mc Anena, Consultant General & Upper GI Surgeon*  
*Mr. Paul Carroll Upper GI Surgeon*  
*Aoife Quinn, CNS, Upper GI Cancer*



The Upper GI Surgical Programme in UHG, one of the 4 NCCP designated centres for Oesophago-Gastric Cancers, has had a very active period over 2019.

2019 saw the appointment of Mr. Carroll, Upper GI Surgeon to the team, consisting of Profs. Oliver McAnena and Chris Collins and Clinical Nurse Specialist, Ms. Aoife Quinn. Mr. Carroll has instituted a minimally Invasive programme in oesophageal and gastric cancers, namely thoroscopic and laparoscopic approaches in the Saolta region. This potentially leads to less morbidity, shorter length of stay, and better quality of life for patients, a benefit for the patient and the hospital.

Our gratitude must be extended also to our CNS, Ms. Aoife Quinn. The CNS supports the patients coming through UHG with a diagnosis of UGI Cancer. From coordination of urgent transfers, to ensuring timely investigations are organised, to reviewing patients on the wards, Ms. Quinn is an integral and indispensable component of the Upper GI team. She provides the point of contact for our patients and provides advocacy to them throughout their journeys.

The Upper GI Unit contributed to a number of national and international collaborative research projects including the role out of the ESO-DATA Ireland project. ESODATA is an international collaborative, gathering data on oesophagectomy outcomes. This data has been used to delineate benchmarking in oesophageal surgery. The Ireland project will allow the 4 centres to collaborate more closely on outcomes data.

## Key Strategic Priorities for the Upper GI Programme in the next 5 years

Establishment of an Early Upper GI Mucosal Neoplasia Programme

Mr. Carroll has introduced endoscopic Submucosal Dissection techniques (allowing for wider endoscopic dissection of early oesophageal and gastric cancers), which adds to the established radio-frequency ablation (RFA), with Eoin Slattery, Consultant Gastroenterologist, and EMR techniques for the treatment of premalignant Barrett's oesophagus and early cancers.

## Theatre Access/Capacity

With advanced laparoscopic/ thoroscopic procedures, a dedicated hybrid laparoscopic/ endoscopic equipped theatre is desirable to advance the Upper and Lower GI Programmes.

## Recruitment/Robotic Surgery/ERAS

The Upper GI programme will look to establish a Robotic arm to its surgical technical capability to move forward with the Minimally Invasive programme. There will be a need for a further surgeon to be brought on board to assist in the expansion of the programme over the next number of years. Finally, integral to improving outcomes is to develop an enhanced recovery after surgery programme (ERAS). Establishment of an ERAS Nurse with prehabilitative and rehabilitative support from dietetics and physiotherapy will improve survivorship and quality of life in our patient cohort.

# **NCCP Upper G.I. Returns** (Data Source: KPI Returns 2019)

2019	UHG	UHG	Total
	Jan - June	July – Dec	Full Year
New Diagnosis Patients	77	75	152
Newly diagnosed patients with radical surgery as their first treatment	2	8	10
<b>GI Surgery 2019</b>			
*Total number of Upper GI surgeries	10	20	30
Direct to surgery T1/T2	2	8	10
Neo adjuvant	8	12	20

\*includes oesophageal, og junctions and gastric surgery but KPI only for patients with curative intent



UHG Oesophageal Cancer Lollipop Day Ms. Aoife Quinn Upper GI CNS, Ms. Sinead Carr Radiation Oncology CNS, Ms. Marie Walsh Medical Oncology CNS, Ms. Carol Brennan, HANO CNS, Ms. Edel McNamara Medical Oncology CNS, Ms. Olivia Dunleavy Colorectal CNS



## Mr Padraic Regan

*Saolta Group National Skin Cancer Lead  
Galway University Hospitals*



Over 13,000 skin cancers are diagnosed in Ireland each year. Non-melanoma skin cancer is the most common cancer in Ireland. It is projected that by 2045, the incidence will increase by more than double. Melanoma is expected to follow suit, with the prevalence rate increasing significantly. (Source: National Cancer Registry Ireland).

Malignant melanoma in men represents 5.7% of all new cancer diagnoses and mortality rates from invasive melanoma have more than doubled in the past 2 decades. The Saolta region has the highest incidence of male malignant melanoma in Ireland due to an ageing population, a population at increased risk for non melanoma skin cancer due to cumulative sun exposure.

In University Hospital Galway (UHG) and Roscommon University Hospital (RUH), 3,002 skin cancers were diagnosed in 2019. Basal cell carcinoma was the most common skin cancer diagnosed (54%), followed by squamous cell carcinoma (34%). Melanoma accounted for 12% of skin cancers diagnosed in 2019.

There are over 4,000 dermatology referrals to UHG annually with skin cancer representing 50% of all referrals. There is a dedicated skin triage clinic and skin cancer surveillance clinic run in UHG uhg by a dermatologist.

In UHG, there is a plastic procedure unit where suspicious lesions can be excised. 2,147 cases went through this unit in 2019 (Source: CNM2 in the PSP department).

There has been a 12% increase in skin cancers diagnosed in the last 3 years at UHG.

The skin cancer Multidisciplinary Team Meeting plays a significant role in assessing the most suitable treatment options for skin cancer cases. There is a large team contributing to this meeting including plastic surgeons, dermatology consultants, radiologists, histologists and the skin cancer clinical nurse specialist. In 2019, 783 cases were discussed. This meeting comprises of the hospitals within the Saolta group as well as many referrals from Limerick University Hospital.

In RUH, two skin cancer surveillance clinics take place every week. A plastic surgeon and three advanced nurse practitioners run this service. They saw approximately 655 skin cancers (including BCC's) in 2019 (Source: Skin Cancer ANP, RUH).

A key priority for the Skin Cancer programme at UHG is the appointment of a consultant dermatologist with a specialist interest in skin cancer in the years ahead.

## Skin Cancer Data 2019 (Data Source: Pathology)

Basal & Merkle Cell Carcinoma	Squamous Cell Carcinoma	Squamous Cell Carcinoma in situ	Invasive Melanoma	Melanoma insitu	Total Skin Cancer
1621	812	208	168	193	3002





**Ms. Catherine Dowling**

*Lead Clinician*

*Urological Cancer Lead*

*Consultant Urological Surgeon*



**Mr Paddy O'Malley**

*Lead Clinician*

*Rapid Access Prostate Clinic*

*Consultant Urological Surgeon*

*Mr Eamonn Rogers, National Lead, Consultant Urological Surgeon*

*Mr Frank D'Arcy, Consultant Urological Surgeon*

*Ms Catherine Dowling, Consultant Urological Surgeon*

*Mr Syed Jaffry, Consultant Urological Surgeon*

*Mr Nadeem Nusrat, Consultant Urological Surgeon*

*Mr. Gareth Durkan, Consultant Urological Surgeon*

*Mr Killian Walsh, Consultant Urological Surgeon*

*Muriel Moloney, CNMII, RAP*

*Rachel Dalton, ANP, RAP*

*Deirdre Horan, Staff Nurse, RAP*

*Muriel Walsh, Staff Nurse, RAP*

The Cancer Strategy 2017 - 2026 has an increased focus on prevention and early diagnosis. Diagnosing cancer at its earliest possible stage is a critical first step to achieving higher survival rates, reducing treatment severity and improving the quality of life of patients. Ireland's cancer outcomes are steadily improving. Patients who can recognise clinical features suspicious of cancer, and who seek early medical intervention, are generally more likely to have less advanced disease and better prospects for treatment.

The Saolta Urological Cancer Programme is one of the busiest urology programmes in the country providing an extensive programme of cancer care to the population of the West/North West for prostate, bladder, renal, testicular and penile cancers. The urology cancer programme has a multidisciplinary approach which meets fortnightly

with videoconferencing linkages to LUH & SUH so that urological cancer cases for the regions are discussed by clinical experts. One of our key objectives in 2020 is to develop a dedicated Prostate MDM to support the programme.

The demand for Urology services continues to grow in Ireland, and this is certainly the experience across our Saolta Hospital Group

- Saolta has an older population, 15.4% are over 65 years, compared to 13.4% nationally
- An older population has a direct correlation with increasing demand on Urology services- OPD activity continues to rise year on year by 3.35%, with a 20% conversion rate for IPDC procedures
- And more specifically, an increasing demand on our Prostate, Kidney and Bladder cancer programmes, alongside Cancer Survivorship

## UHG Urology Cancer Centre Activity 2018 - 2019

Activity	2018	2019	% increase
<b>OPD</b>	11,386	12,603	<b>11%</b>
Rapid Access Prostate (RAP) New	669	844	<b>26%</b>
Rapid Access Prostate (RAP) Review	3447	4385	<b>27%</b>
Rapid Access Prostate (RAP) N:R	1:5	1:5	n/a
Day Treatments (Day Tx)	1,191	1,355	<b>14%</b>
Inpatient (IP)	1,486	1,621	<b>9%</b>
Daycase (DC) procedures	2,881	4,102	<b>42%</b>
Bed days used IP	10,045	10,405	<b>3.60%</b>
Elective IP Bed days used	-	705 patients required 4437 bed days	
Emergency IP Bed days used	-	916 patients required 5968 bed days	

### Rapid Access Prostate Clinic (RAPC)

The Rapid Access Prostate Programme remains the busiest in the country with **374** new primary diagnoses in 2019, representing a 7% increase in the number of primary diagnoses between 2018 to 2019.

When we compare the level of new and review activity at the RAP clinic from 2018 to 2019, the results are informative with a **26%** increase in new patients attending and a **27%** increase in review patient attendances. This has created a demand capacity deficit that is proving difficult to meet thus impacting on our KPI performance. The increase in new patient attendances in 2019 can be directly linked to the change in the PSA guidelines issued by the NCCP.

Rapid Access Clinics take place in our 'One Stop Shop' prostate assessment clinics each week where patients are assessed and/or have a biopsy performed. Cases are referred for discussion at

MDM where the treatment plan is agreed. Prostate cancer patients are treated with robotic surgery, radical prostatectomy (nerve sparing) or robotic surgery, seed brachytherapy, External Beam Therapy (EBT) at UHG. Donegal patients are referred for EBT to Altnagelvin under a national Service Level Agreement but have seed brachytherapy at UHG.

The Rapid Access Programme at UHG supports the RAP in Limerick. One of the UHG consultant urologists holds a weekly RAP clinic in Limerick and all patients requiring surgery are referred to UHG for their procedure. The 2019 primary diagnoses data below represents an 18% increase in cancers diagnosed when compared to 2017 and the number of Robotic surgeries performed increased by 6% between 2018 and 2019.

### Rapid Access Prostate Surgical Activity 2019

<b>Total number of new primary diagnoses</b>	<b>367</b>
<b>Total number of Prostate Surgeries</b>	<b>136</b>
Robotic Surgeries Performed	121
Radical Prostatectomies Performed	10
Open Prostatectomies Performed	5

We welcome the appointment of Rachel Dalton, cANP Prostate Cancer, who will be an enormous asset to our patients and team

## Nursing Programme within Rapid Access Prostate Service



### MOVEMBER

*UHG information stand. Rachael Dalton Clinical nurse specialist prostate cancer & Fionnuala Creighton Daffodil nurse*

Rachael Dalton, Clinical nurse specialist and Muriel Moloney, Clinical nurse manager within the Rapid access prostate assessment clinic coordinate the rapid access prostate assessment and biopsy clinics at University Hospital Galway. This clinic is supported by our dedicated nursing team, Deirdre Horan, Muriel Walsh & Yvonne O'Regan. We aim to provide men with appropriate education and support both prior to and following investigations for prostate cancer.

The nursing team provide men and their families with support following receipt of a diagnosis of prostate cancer. We provide our patients with appropriate literature on their diagnosis, information on their local cancer support groups, contact details for the rapid access prostate clinic and a contact number for our dedicated prostate cancer nurse support telephone line. We coordinate staging investigations and patient follow up with clinic visits to optimise efficiency within the unit.

Importantly, we communicate with patients and their families to appropriately assess patients' needs and provide relevant support. The clinical nurse specialist acts as a key worker and a liaison between the patient and other members of the multidisciplinary team throughout the patient's care continuum.

Nurse led PSA and review clinics continue in 2019. Within these clinics the CNS monitor for prostate cancer reoccurrence and complete an individualised patient needs assessment. This assessment is specifically designed to monitor and treat side effects related to prostate cancer treatments. The CANP runs this review clinic alongside Consultant Urologist Mr Garrett Durkan. Our nurse led PSA and review telephone clinics are supporting the move towards patient supported self management which we aim to develop further in the future.

Considering the high prostate cancer survival rates and the potential impact of surgery and other treatments, the prostate cancer information and support group was born. This group was developed

to provide men with information and support to cope with the impact and possible side effects of prostate cancer and its treatments. The Information and Support sessions are held in the Cancer Care West Support Centre in Galway. At each event there are approximately 15 participants and each session is facilitated by the clinical nurse specialist in prostate cancer and a chartered clinical and counselling psychologist. Each session focuses on a particular topic and includes a presentation on that topic by the relevant specialist healthcare professional/guest speaker as appropriate.

### Information and Support Series topics

- Intimacy and sexual function.
- Urinary incontinence and pelvic floor exercises.
- Adjusting to living with prostate cancer.
- Treatments for sexual dysfunction.
- Diet and exercise.

During the Movember 2019 national fundraiser, the urology unit worked closely with the Daffodil Centre in UHG to provide men with information on the prevention of illness and early diagnosis of cancer. Along with our scheduled support group evening, we held a men's health event in the Maldron hotel on November 20<sup>th</sup>. The goal of this evening was to provide men with information relating to health and wellbeing. Our keynote speakers for the evening were Ms Catherine Dowling (Consultant urologist UHG), Mr Brian McNeil (Consultant Cardiologist, UHG) and Ms Marie Whyte (Centre manager, Pieta House). Again this year, CROI joined us and facilitated a free Blood pressure and BMI check for the attendees. Staff from UHG and community groups provided information stands at this event. Special thank you to Debbie Fallows, physiotherapist UHG, Therese Kelly, ANP benign Urology, UHG and Fionnuala Creighton, Daffodil centre UHG who facilitated information stands on the evening.

## Bladder Cancer Programme

Blood in the urine is a serious medical condition and strongly associated with an underlying malignancy. It is similar to a breast lump, raised PSA or bleeding from the bowel. Visible haematuria requires urgent and complete evaluation of the urinary tract which includes imaging of the kidneys and a cystoscopy of the bladder. Haematuria clinics function better as a one-stop clinic. The proposed haematuria model will focus only on visible frank haematuria. The National Clinical Programme in Surgery (NCPS) objective is to standardise treatment of visible frank haematuria nationally via the implementation Rapid Access Haematuria Pathway (RAHP).

The National Cancer Control Programme (NCCP), the National Clinical Programme for Radiology HSE and National Clinical Programme in Surgery (NCPS), the Scheduled Care Commissioning Team Acute Strategy and Planning have agreed to collaborate together to develop a standardised network of 'One Stop' Rapid Access Haematuria Pathway (RAHP) clinics. This project was established at Roscommon University Hospital (RUH) as a Pilot Site for this Service due to availability of Day Case/CT capacity. It is focused on visible frank haematuria. The Service commenced at RUH on the 4th December 2018.

Bladder cancers diagnosed in RUH are referred to the Cancer Centre in Galway for surgery and follow up treatments. The Cancer Centre at UHG is a high volume radical cystectomy unit and incorporates ERAS pathways.

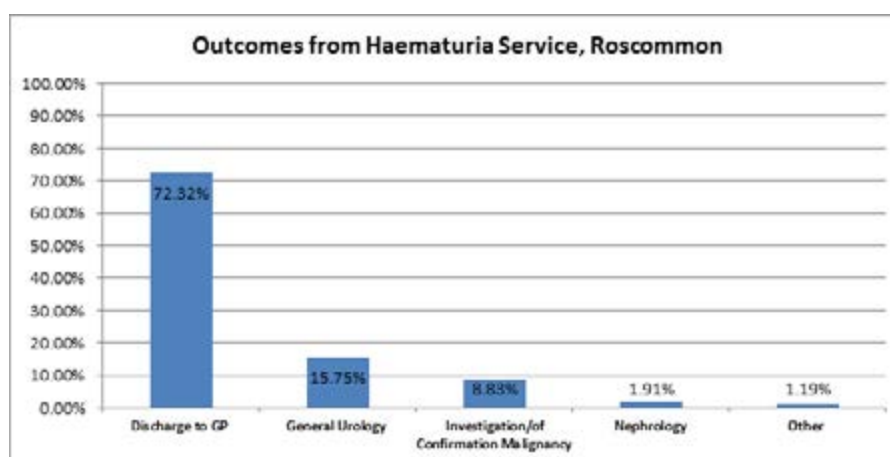
The Rapid Access Haematuria Pathway (RAHP) model that started in RUH involves the following:-

- All Consultant Urologists within Saolta can refer Frank Haematuria patients to RUH for a 28 day turn around service
- All patients will receive a flexible cystoscopy procedure, and an ultra sound or CT scan on the same day or within 3 days of each other
- The follow on pathway for patients requiring bladder cancer surgery detected in the Haematuria Service in RUH, is to be **referred to UHG for bladder cancer surgery** where a high volume of TURBTs are performed ranging from 170-200 each year.

The table below shows the overall activity at the RUH Haematuria Programme in 2019

Referral Outcomes Roscommon Hospital 2019	Number	%
Seen and Treated	419	62.3%
Patient cancelled declined offer to RUH treated back in original referral hospital	45	6.6%
Procedure done in original hospital	24	3.5%
DNA	14	2%
Treated in private hospital	10	0.6%
Patient declined offer - discharged to GP	9	0.6%
Treated in other hospital outside Saolta Group	4	0.6%
Not haematuria referral - referred back to GP and original referral hospital	4	0.6%
Not fit for procedure	4	0.6%
Deceased	1	0.1%
Referrals awaiting appointment 31.12.2019	138	20%
<b>Total</b>	<b>672</b>	<b>100%</b>

## Outcomes from the RUH Haematuria Service first year



## UHG Bladder Cancer Surveillance: Flexi cysto day case activity

In 2019, we welcomed the appointment of Robert Mc Conkey, ANP to the Urology programme at UHG. Robert provides an ANP led intravesical chemotherapy service and an ANP led cystoscopy service.

In 2019, there were 235 Flexi cysto clinics at UHG, which generated 1285 patient attendances and 1230 cystoscopies. 20% (243) of the 1230 cystoscopes scopes were bladder cancer surveillance.

In the 4 year period 2016 – 2019, an 87% increase in Intravesical Bladder Cancer Chemotherapy & Immunotherapy Treatments was recorded as tabulated below:

	2016	2017	2018	2019
Immunotherapy Instillations	173	203	329	358
Chemotherapy Instillations	57	85	102	71
Total	230	288	431	429

\*data included in Day Treatment activity above

## Renal Cancer Programme key achievements

The Renal Cancer programme offers both minimally invasive (laparoscopic) radical nephrectomy as well as laparoscopic and open partial nephrectomies with plans to commence robotic partial nephrectomy. In addition we now offer microwave ablation in Interventional Radiology as an addition to Radiofrequency ablation.

## Challenges facing the Urology Cancer Programme for Saolta Region

The biggest rate limiting factor in further developing the urology cancer programme within Saolta is infrastructure both in terms of OPD facilities, access to modern day ward facilities, modern theatre complex and inpatient beds. The KPMG Options Appraisal 2019 recommends immediate capital investment in key cancer infrastructure at UHG

which includes a new urology suite including a dedicated prostate facility. The same challenge faces the urology programme at LUH.

## Key Development Priorities

- Reduce the RAP N:R ratio by the introduction of upfront MRI's, awaiting national guidance from NCCP
- Establish MDM's on all urology cancer sites:-Bladder and Kidney MDM and a Prostate MDM across the Saolta Group
- Include Urology Infrastructural requirements in UHG site and Cancer Centre Development Plans
- Further develop the Bladder and Kidney cancer services and pathways across the Saolta Group



## Roscommon University Hospital Haematuria Multidisciplinary team







## Prof Margaret Murray

Clinical Director Laboratory Directorate



The Laboratory Directorate is pivotal in the provision of cancer care throughout the Saolta Group. The recent National Cancer Strategy 2017-2026 highlighted cancer prevention as a key stone. Departments within the Directorate provide diagnostic tests to the National Screening Programs e. g. Breast Check and also the Bowel Screen Programme. Apart from its role in the Screening Programmes in other departments, it also provides diagnostic tests for cancer prevention, screening, monitoring, diagnosis, treatment planning, treatment delivery and the development of minimal residual disease monitoring. The diagnosis of cancer is often made in the departments' of histopathology throughout the Saolta Group but the other departments within the laboratories contribute crucially also to the prevention, diagnosis, monitoring and assessment of treatment outcomes.

The high volume departments' of Clinical Biochemistry, Haematology and Immunology in UHG processed near 14 million (FBC counted per test) tests and LUH processed near 4.35 million tests (FBCs counted per profile); accounting for approximately one quarter and one tenth respectively of these were associated with some aspect of the cancer care program. In MUH, 71,004 tests (6,454 samples) and 4618 requests were received by the Biochemistry and Haematology Departments respectively from MUH Oncology Department; equating to approx. 3% and 2% of the Biochemistry and Haematology activity respectively.

The **Haematology department** in UHG and LUH, through its special haematology service, processed 618 bone marrow samples and 190 respectively, affirming this service as a key diagnostic test for the diagnosis of Haematological cancers. SUH also provides a bone marrow analytical service. Through the immuno-haematology service, UHG processed 703 samples. UHG processed 305 tests to assess the adequacy of stem cell collections to support high dose chemotherapy. PUH Haematology support

therapeutics for patients on chemotherapy and this includes pre chemotherapy neutrophil counts.

UHG Haematology Cancer related testing:-

- Number of Flows from immuno-haematology: Acute panels (194), Lymph panels (433) and CSF flow (76): **Total is 703**. This includes diagnostic and monitoring sample analysis. We are unable to distinguish diagnostic samples from our stats. Lymph panels include lymphoma, leukaemia and lymph nodes.
- Number of CD34 Counts: 305. This includes multiple counts on some patients, so therefore the number of patients is less.
- Number of Bone Marrows: 618.

The **Blood Transfusion** Departments across all Saolta Laboratories offer a Blood and Blood product clinical service that supports the disease management of Saolta Cancer Patients. The Blood, Tissue and GMP Establishment (GBTE) at UHG continues to be licensed by the Health Products Regulatory Authority (HPRA) and thus complies with a variety of mandatory EU Blood, Tissue and GMP EU Directives. Some of the licences are unique to the Hospitals in the Republic of Ireland. The Blood Establishment also continues to be ISO15189 Accredited and the GMP facility continues to successfully manufacture medicinal products.

In addition the Tissue license allows GBTE to perform Stem Cell harvests, processing, storage and follow on reinfusion which forms part of the treatment of many haematology patients. In 2019, 118 Harvests and 72 Reinfusions were performed. This workload and patients catered for in this service is exponentially increasing year in year out.

The PUH Blood Transfusion Department operates a joint care link with Crumlin Children's Hospital from where CMV irradiated blood is received for Paediatric Oncology Patients.

Laboratory services to cancer patients includes:

- Weekly attendance at MDT  
Haematology/Microbiology; consultant-led clinical and infection control advice as required for all patients
- 24/7 access clinical advice; Haematology and Oncology services at UHG are significant and daily users of this service 365 days/year
- Scheduled and ad hoc responsive Infection control advice re C difficile, CPE, VRE, other MDRO, ventilation, environmental monitoring, Legionella water monitoring, etc.

A significant proportion of UHG Microbiology specimen types are accounted for by UHG Haematology/Oncology cancer care patients. Many of these specimen types are particularly non-automated in relation to processing, and particularly labour-intense from receipt to reporting. Below is a comprehensive breakdown capturing UHG Haematology and Oncology hospital attending patients (Microbiology) and UHG Haematology attending patients (Virology) only. In PUH tests for blood stream infections including MRSA, MSSA, VRE and Gram Negative Microbiomes are being

done in house. The delivery of laboratory cancer care mirrors the clinical service in the multidisciplinary nature of the care delivered to cancer patients throughout their journey. This is also reflected in the diagnostic service the laboratory provides to the trials carried out by Clinical Research Clinical Trials Programme and National Blood Cancer Network.

The Clinical advisory Service provided by all the Laboratory Based clinicians in the Group both directly to clinician and patients but also by their participation at MDTs is a key component of the Laboratory Diagnostic Service allowing for integrated care throughout the Group. The increasing requirement for personalised treatment planning and the requirement for minimal residual disease detection is recognised by the increase in requests for molecular, immunocytochemistry and immunocytometry based tests; clinical infection control advice and antimicrobial stewardship, and developmental needs to further develop and enhance these areas are discussed.

All the laboratories in the Saolta Group contribute to the delivery of Laboratory Cancer Care

## Laboratory Activity 2019

### Biochemistry Tumour marker analysis

#### In-house Testing

	UHG	LUH	MUH
LDH	51,121		
PSA	45,841	19,836*	27,749
CEA	8,640	3,626	Ref. to UHG
CA125	7,647	2,928	Ref. to UHG
CA199	7,167	1444	Ref. to UHG
hCG	6,863		
AFP	6,306	1,050	Ref. to UHG
CA153	3,909	508	Ref. to UHG
<b>Sub-Total</b>	<b>137,494</b>	<b>29392</b>	<b>27,749</b>
<b>Overall Total</b>	<b>194,635</b>		

\*TPSA in LUH, MUH & PUH

## External Referrals

Tests\Site	UHG
Thyroglobulin	488
Plasma metanephrines	367
Chromogranin A & B	181
Urinary metanephrines	101
Urinary 5-HIAA	95
Thiopurine methyltransferase activity	84
Deoxypyridinoline dehydrogenase mutation analysis	73
Inhibin B	28
<b>Total</b>	<b>1,417</b>

## Total Specimens Received by Speciality at UHG

Speciality	Number
Oncology	23,726
Haematology	17,755
Radiation Oncology	5,040
Total	46,521

## UHG Haematology Cancer Activity - 2019

### Internal Tests

Marrow	Viscosity	Acute Panel - Flow	Lymph Panel-Flow	CSF -Flow
618	209	194	433	76
Stem (Harvest & Peripheral Blood)	Lupus	Thrombophilia Screen	Factor Assays	Morphology
305	1012	708	60 approx	3495

### External Referrals

BCR - ABL	CAL-R	Jak-2	Fish – Lymphoma/CLL	Fish Myeloma
129	41	207	37	94
MRD CLL	B Marrow Cytogenetics	Myeloid Gene Scan	HTA*	
47	190	23	335	

\* Refers to Haematology Tests Away (e.g. AML and ALL MRD).



## University Hospital Galway

### Dr Síne Phelan

*Consultant Pathologist  
Lead Clinician*



The Saolta University Health Care Group encompasses five histopathology departments, Galway, Letterkenny, Sligo, Mayo and Portlincula University Hospitals, staffed by a total of more than 20 Consultant Histopathologists. All of the departments are patient focused and strive to provide timely and accurate pathology diagnoses to inform patient care. All of the departments actively participate in the Histopathology National Quality improvement programme.

University Hospital Galway (UHG) is the largest histopathology department in the Saolta Group. UHG provides a wide range of specialist cancer diagnostic services, including Breast screening, BowelScreen, Cervical cancer screening and an on-site FNA cytology service. All of the departments also deliver a wide range of non-cancer pathology services and autopsy services. In addition, UHG is an RCPI accredited training centre, providing a high quality training programme for non-consultant hospital doctors embarking on careers in Histopathology.

In recent years, all pathology services have experienced an increase in the complexity of their caseloads, driven in part by the increasing use of neo-adjuvant therapies in a wide range of cancers. In addition, there is an ever increasing need for advanced diagnostic, prognostic and predictive tests. With the advent of personalised medicine and greater availability of targeted therapies for cancer, it is increasingly important to integrate pathology

reports which combine a histology-based diagnosis together with molecular pathology and mutational analysis of the patient's tumour. To this end, UHG provides advanced diagnostics with extensive immunohistochemistry, direct immunofluorescence and molecular testing. The molecular laboratory was established in 2009 with development of in situ hybridisation (ISH) analysis and the service expanded in 2012 to include mutation analysis. Current diagnostics performed include HER2 FISH and DDISH for breast and gastric cancers, a colorectal cancer panel (KRAS, NRAS, BRAF), melanoma panel (BRAF, NRAS) and non-small cell lung cancer panel (EGFR, ALK, BRAF, ROS-1) and PDL1 immunohistochemistry.

Participation in the Multi-disciplinary Team (MDT) meetings forms a central part of the work of the Histopathology departments. At UHG there are dedicated medical laboratory aides assigned to the process of preparing MDM lists, which requires printing of reports and collection of pathology slides. Much of the pathologists time is spent preparing for these meetings, which are essential to the planning of patient care pathways.

The following data relates to pathology activity at UHG. Data is obtained from the departmental laboratory information system and from the DAP Molecular Laboratory. (Acknowledgements: Jennifer Ruane and Dr. Allan O'Keeffe).

### Key procedural codes associated with workload detail:

Procedure Code	Expansion
P01	Core, needle, punch, shave, and curetting biopsies including liver, bronchial, lung core, endometrial pipelle, skin punch, prostate core, renal core, lymph node core, and targeted bone core for tumour.
P02	Endoscopic Gastrointestinal biopsies
P03	Cancer Resections
P04	Non cancer resections
P05	Non Gynae cytology, CSF
P06	Non Gynae cytology, FNA
P07	Non Gynae cytology, Exfoliative
P10	Autopsy Coroner
P11	Autopsy Non Coroner/Consented/House

**Division of Anatomic Pathology Activity at UHG 2019** (Data Source: Pathology UHG LIS)

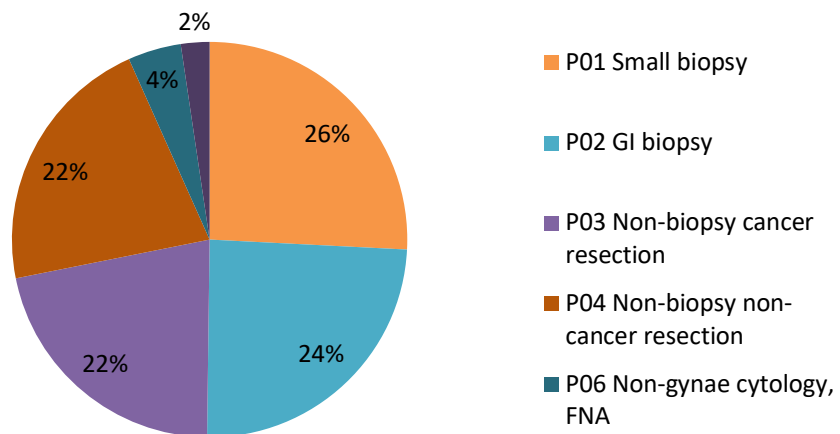
Procedure Code		No. of Cases	No. of Specimens	No. of blocks
P01	Small biopsy	6845	13726	15694
P02	GI biopsy	11635	24216	25553
P03	Non biopsy Cancer resection	2112	4957	37147
P04	Non biopsy Non Cancer resection	17053	22275	47770
P05	CSF	198	199	6
P06	Non Gynae Cytology FNA	781	1505	713
P07	Non Gynae Cytology Exfoliative	1651	1934	747
P10	Autopsy Coroner	351	351	3663
P11	Autopsy Other	32	32	1619
Total	<b>All procedures</b>	<b>40658</b>	<b>69195</b>	<b>132639</b>

Cases referred to the Division of Anatomic Pathology for testing/review/opinion/discussion at MDT = 530 cases

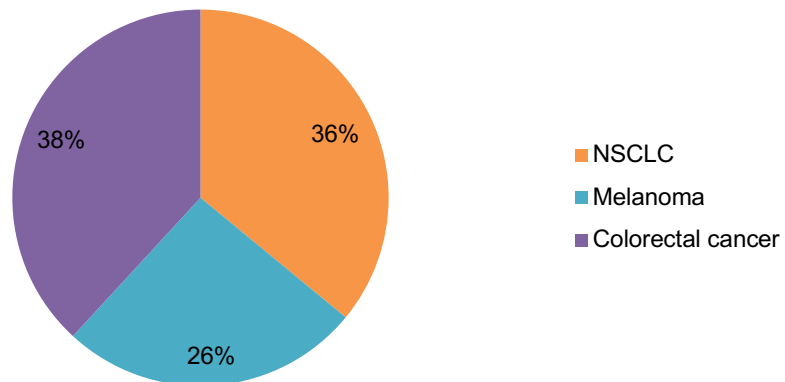
**Pathology Case Detail** (Data Source: Pathology UHG LIS)

Malignant Cases		Cases Discussed at MDM	
Surgical	6502	Non-gynaecological cytology	4621
Cytology	344	Surgical	354
Referral	278	Referred	163
Total Malignant Cases	7124	Total no. Discussed at MDM	5138

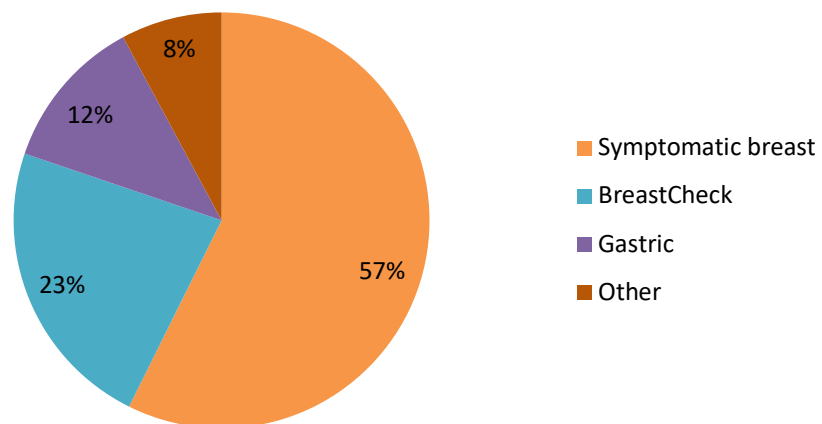
**MDM Cases by procedural code 2019**



**Molecular Biomarker Tests Performed 2019**



**HER2 FISH Tests Performed 2019**





## Letterkenny University Hospital

**Dr Gerry O'Dowd**

*Consultant Pathologist*

*Laboratory Directorate and Cancer MCAN aCD*

### Histopathology LUH Overall Activity 2019

P code	Description	Cases	Specimens	Blocks
P01	Small biopsy	2500	3263	3410
P02	GI biopsy	3460	7655	7772
P03	Non biopsy cancer resection	144	440	2242
P04	Non biopsy Non cancer resection	2519	2875	6204
P05	Non Gynae Cytology CSF	32	32	0
P06	Non Gynae Cytology FNA	32	38	6
P07	Non Gynae Cytology Exfoliative	394	466	25
P10	Autopsy Coroner	126	126	1913
P11	Autopsy Other	0	0	0
Total	All procedures	9207	14895	21572

### Cases referred to the Division of Anatomic Pathology

Cases discussed at MDT (for review/opinion/discussion)	837
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### Malignancy case detail

Total malignant cases	
Surgical	2053
Non Gynae Cytology	67
Total	2120

*\*Definition of malignant used in this report: any case with a diagnosis that appears on the National Cancer Registry dataset*

### Intra-departmental Consultation

Histology (P01-P04)	6.54%	(564 cases)
Non Gynae Cytology FNA (P06)	6.25%	(2 cases)
Non Gynae Cytology Exfoliative (P07)	3.05%	(12 cases)
Inter-institutional Consultation	2.07%	(188 cases)
Cases received for review	0.03%	(3 cases)
Cases referred for opinion	0.08%	(7 cases)

### LUH Histopathology Cancer related testing

Test	Total
Major Cancer Resections	144
Breast Core Biopsies	393
Prostate needle core biopsies	53
Bone Marrow Trephines	182
Lung needle biopsies	49
Lymphnode needle biopsies	32
Soft tissue needle biopsy	67
Liver needle biopsy	56
Bladder biopsies	37
Immuno stains (inc.controls)	8,389
Special stains	630
<b>Total</b>	<b>10,032</b>

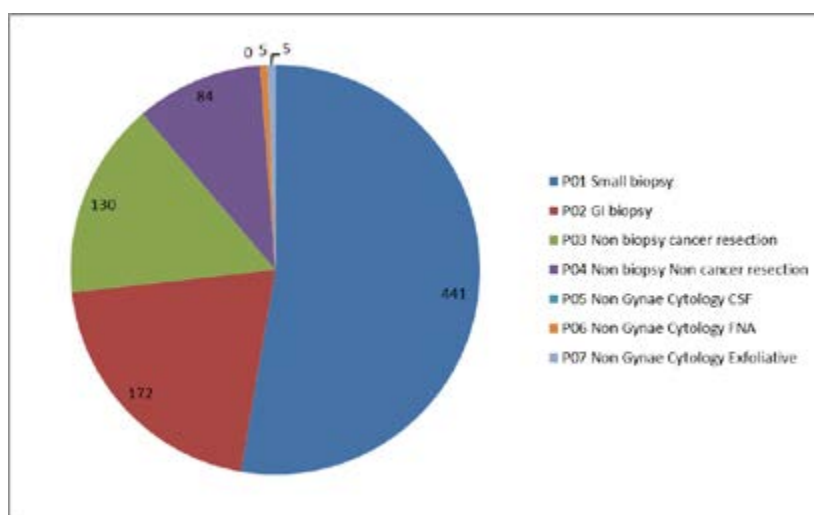
### MDM Activity 2019

#### Cases discussed at MDM breakdown

Total Surgical cases	827
Total Non Gynae Cytology cases	10
<b>Total</b>	<b>837</b>

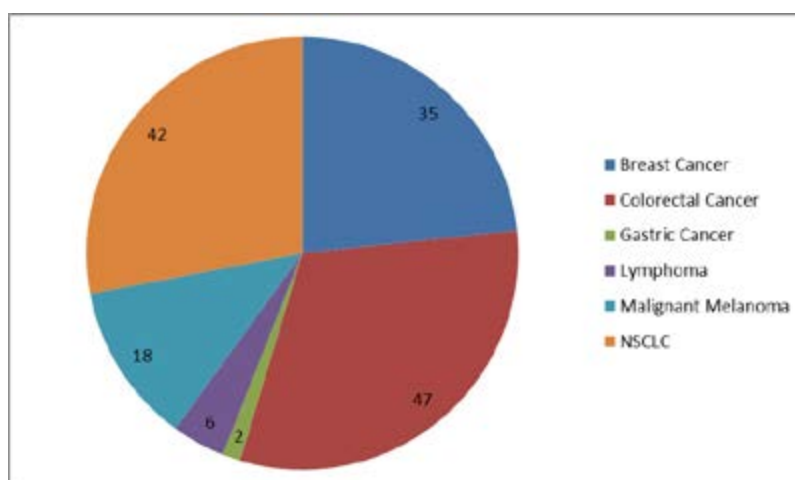
#### Cases discussed at MDM by Procedural Code 2019

P code	Cases
P01 Small biopsy	441
P02 GI biopsy	172
P03 Non biopsy cancer resection	130
P04 Non biopsy Non cancer resection	84
P05 Non Gynae Cytology CSF	0
P06 Non Gynae Cytology FNA	5
P07 Non Gynae Cytology Exfoliative	5
<b>Total</b>	<b>837</b>



## Molecular Service 2019

Specimen Type/Mutation Test	Referrals	Tumour type
Oncotype DX	16	Breast cancer
FISH	19	Breast Cancer
KRAS	18	Colorectal Cancer
MSI	9	Colorectal Cancer
MLH1 Methylation	1	Colorectal Cancer
NRAS	19	Colorectal Cancer
DDISH	2	Gastric Cancer
C-MYC	6	Lymphoma
BRAF	18	Malignant Melanoma
ALK	9	NSCLC
PD-L1	18	NSCLC
ROS-1	5	NSCLC
EGFR	10	NSCLC



## Portiuncula University Hospital

### Dr. Susanna Schneider

*Consultant Histopathologist*

*Laboratory Directorate aCD*

### Overview

- In 2019 until the middle of the year the Department operated with 0.7 Consultant and 1.6 BMS Staff. From mid-2019 onwards we have 1.4 WTE Consultant Staff.
- We participate in the faculty of Pathology Histopathology National Quality Improvement Programme.
- For diagnostic and prognostic purposes we have a panel of immunohistochemical stains and if required additional immunohistochemistry is being performed at UHG.
- Cancer referrals were made to various referral centres across the country. Most of the referrals which includes molecular testing, multidisciplinary meeting discussion and opinion were made to UHG. (See numbers below). A significant administrative effort is required for this.
- Going forward, the workload of cancer cases has further increased in 2021 with two new plastic surgeons providing theatre sessions at PUH.

### Histopathology PUH Overall Activity 2019

Cases	Blocks	Slides
3260	5679	8306

### Malignancy case detail

- 107 cases from PUH put on Cancer Registry in 2019 – 3.28% of cases

### Cancer Referrals 2019

Referral Centre	Molecular testing	MDM	Opinion
UHG	29	32 (incl. 7 non-cancer diagnoses)	25 (incl. 8 non-cancer diagnoses)
SJH	5	0	3 (all non-cancer)
Galway Clinic	0	0	1 (non-cancer)
SVUH	0	7 (incl. 3 non-cancer diagnoses)	1 (non-cancer)
CUH	0	0	2 (both non-cancer)
Waterford RH	0	0	1
<b>Overall Total</b>	<b>34</b>	<b>39 (incl. 10 non-cancer)</b>	<b>33 (incl. 15 non-cancer)</b>



## Professor Paul Donnellan

Consultant Medical Oncologist UHG & MUH  
Lead Clinician in Medical Oncology, Saolta Health Care Group

Prof. Maccon Keane, Consultant Medical Oncologist  
Dr. Greg Leonard, Consultant Medical Oncologist  
Dr. Silvie Blazkova, Consultant Medical Oncologist



There is an extensive Medical Oncology Programme delivering cancer care across the Saolta University Health Care Group. Medical Oncology specialises in the drug treatment of cancer utilising rationally designed biological therapies; oral targeted agents; and increasingly more immunotherapy agents. These drugs are relatively less toxic and effective but they are expensive and place major demands on the Healthcare System. The NCCP continue to develop

chemotherapy regimen protocols and these are integrated into the medical oncology services across the Saolta Group on an ongoing basis to support safe, evidence-based and cost-effective cancer treatment for all cancer patients.

The Medical Oncology Programme is delivered across the Saolta University Health Care Group in 5 of the 7 hospitals as indicated below:

Medical Oncology Service			
Hospital	Outpatient Services	Day case Treatment	Inpatient services
Galway University Hospital	Yes	Yes	Yes
Letterkenny University Hospital	Yes	Yes	Yes
Mayo University Hospital	Yes	Yes	Nil
Portiuncula University Hospital	Yes	Yes	Nil
Sligo University Hospital	Yes	Yes	Yes

It consists of Medical Oncology/Haematology Day Wards at University Hospital Galway with satellite day wards and clinics at Portiuncula University Hospital and Mayo University Hospital. Sligo University Hospital and Letterkenny University Hospital have Day Ward, Inpatient and Outpatient facilities as depicted above.

Saolta Medical Oncology is led by 8 Medical Oncology consultants across the Saolta Group, 4 located at UHG with sessions in both Mayo University Hospital and Portiuncula University Hospital. There are 2 medical oncologists located at Sligo University Hospital and a further two at Letterkenny University Hospital. The Medical Oncology Units at Galway, Sligo and Letterkenny have inpatient wards and clinical trial staff in addition to the outpatient and day ward oncology services present at all 5 sites. The Medical Oncology Programme across the Saolta Group is supported by a team of Advanced Nurse Practitioners and Clinical Nurse Specialists providing expert nursing care to cancer patients over the duration of their treatment and beyond.

In line with the National Slaintecare Programme, we are engaging with our Community Intervention

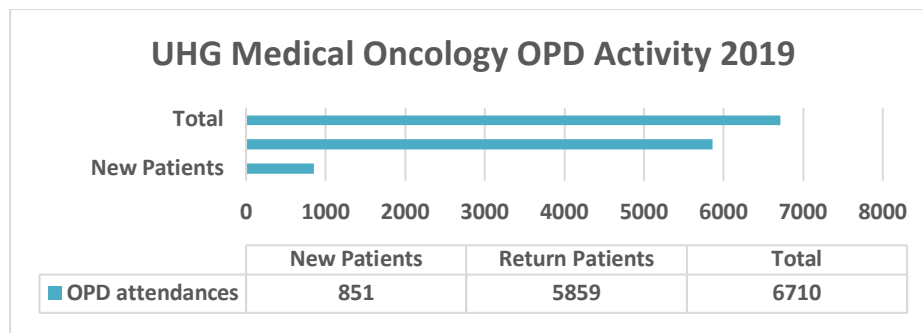
Teams to explore collaborative initiatives that will enable treatments to be delivered in local Health Centres reducing the burden of travel for patients having to attend hospital.

The inpatient medical oncology facilities in UHG are situated in the new 75 bed block, each room having en suite facilities, enhancing the inpatient experience. However, the Day Ward and Outpatient facilities remain totally inadequate for the delivery of the medical oncology programme. The 2019 KPMG Options Appraisal commissioned for UHG by the Group Clinical Director, identified Interim priority developments for ambulatory cancer care, for a state of the art Ambulatory Care Centre at UHG. Investment in dedicated Cancer infrastructure is now a key priority for the Saolta University Health Care Group and it is imperative that it becomes a reality as soon as is possible. Multidisciplinary Care is provided across the Saolta Group through the MDM Programme with medical oncologists from Sligo and Letterkenny linking to tumour site specific multidisciplinary meetings at University Hospital Galway on an ongoing basis to discuss individual patient cases and plan treatment pathways.

## Medical Oncology OPD Activity

Consultant led Outpatient Clinics are held on all sites across the Saolta University Health Care Group. As indicated above Mayo University Hospital and Portiuncula University Hospital are satellites of University Hospital Galway with UHG consultants

holding outreach clinics in both hospitals where clinics are supported locally by day ward staff. OPD activity has remained consistently high across the group with UHG Medical Oncology OPD activity displayed below.



## Saolta Group Medical Oncology Infrastructural Requirement

As mentioned earlier a key priority for the Cancer Centre is to build appropriate infrastructure to include a state of the art Ambulatory Care Centre for Medical and Haematological Oncology to address the current infrastructural deficits at UHG in the delivery of Outpatient care. The vision is for a comprehensive state of the art complex that will include a Phlebotomy suite, an Outpatient suite, a Haematology Oncology Day Ward, and an Acute Assessment Area, Rapid Access Services and dedicated imaging suite. The ambulatory build will be replicated across the region in all of the Saolta Hospitals administering SACT in line with balanced regional development plan and Slaintecare. We plan to progress this as a matter of urgency and will continue to evaluate patient flow and processes in the meantime to maximise utilisation of resources.

However, until the Ambulatory Care Centre in UHG and across the region is realised, despite our best efforts towards efficient flow, patients requiring emergency care will have to continue to present to ED to access an inpatient bed when admission is required. It is envisaged that within the Acute Assessment area in the new build urgent patients

experiencing complications who currently present to OPD/ED will be reviewed. Following assessment patients will then be admitted, return the following day for supportive therapy or be discharged home. This will enable better utilisation of resources and redirect cancer patients away from the ED patient stream. It is important to note that there is a significant demand capacity deficit for dedicated medical oncology and haematology beds in UHG, this is also replicated in SUH and LUH.

All the Day Wards were again extremely busy in 2019. As demand continues to increase the pressure on services in all our hospitals becomes more challenging as many of the Day Ward facilities are in need of new infrastructural refurbishment or new fit for purpose facilities. The infrastructural requirements will be addressed in dedicated ambulatory builds to reflect the balanced regional development and are a priority. In order to deal with the increased demand many of our hospitals are engaging with the community teams initiating the delivery of some low risk appropriate medical oncology regimes in Community Health Centres where it is deemed appropriate and safe to do so.

## National Cancer Control Programme KPIs for Medical Oncology-

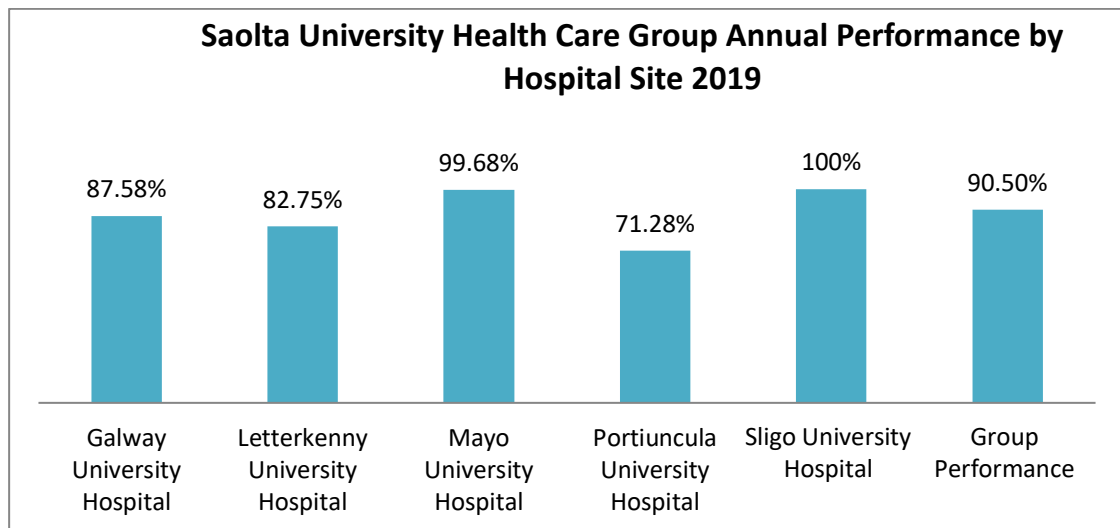
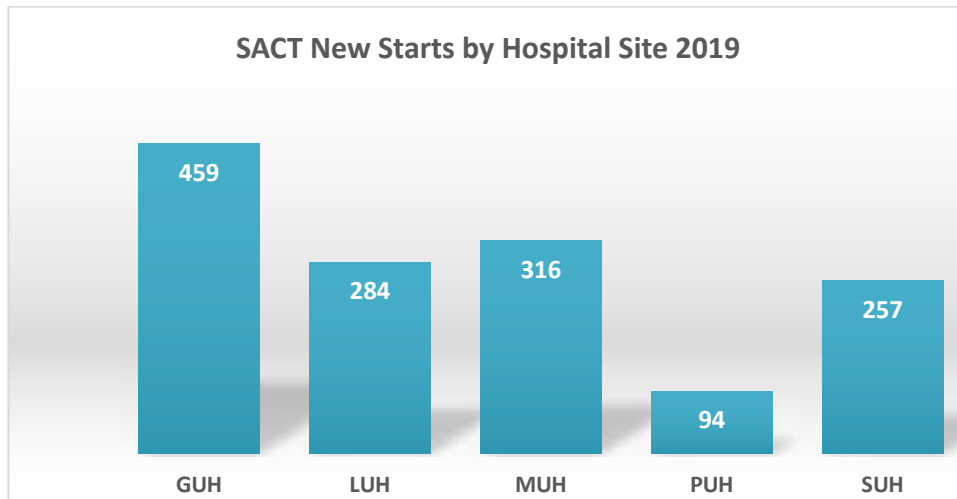
Each of the Saolta Hospitals delivering the systemic anti cancer therapies programme across the Group submit KPI reports on a monthly basis to the National Cancer Control Programme (NCCP). This KPI oversees access to treatment in the day ward setting within 15 working days from date of referral ( Medical Oncology & Haematology). In 2019, the overall Group performance averaged 90% ranging from 87% at UHG to 100% in SUH. The key deficit is capacity at UHG, requiring intensive local

management on a daily basis in the interim while awaiting the new Ambulatory Care Centre.

UHG are exploring ways to utilise capacity in the community and actively pursuing sustainable and safe ways to deliver more care outside of the hospital environment.

The illustrations below sets out the New Systemic Anti Cancer (SACT) starts and the KPI performance for Saolta Hospitals.





*Note: KPI's refer to both medical and haematology treatments*

### Letterkenny University Hospital

The work of oncology/haematology nursing in Letterkenny University Hospital continued apace in 2019. Congratulations to Caroline Clancy who took up position as a CNS Oncology in 2019 a great addition to the multidisciplinary team.

In 2019 the ANP Oncology and CNM Mary Grace Kelly received the inaugural Cancer Nursing Research Award (administered by the Irish Cancer Society) to establish and analyse the safety and efficacy of an integrated care model for the management of patients receiving oral anti-cancer agents by an ANP. This is a critical piece of research that will shape the future delivery of OAM for our patients.

The 'Moving on Initiative' which was a personalised self-management programme to improve physical and psychological health of cancer survivors was

completed in 2019 (supported by a research grant from the Irish Cancer Society). Further roll out of the programme is planned. The aim is that the 'Moving on Initiative' will become part of standardised cancer care for individuals to enrol onto once they have completed their active cancer treatment.

The in-patient ward continues to be full to capacity consistently with the existing 11 beds proving inadequate for the in-patient care requirements. Pre-education of in-patients prior to commencing systemic anti-cancer therapy is supported and augmented by Teraze Toby at the Daffodil Centre. The Northwest Cancer Centre in Altnagelvin Hospital Derry continues to provide radiation care to a cohort of patients residing in Co. Donegal.



*Photo: Janice Richmond LUH*



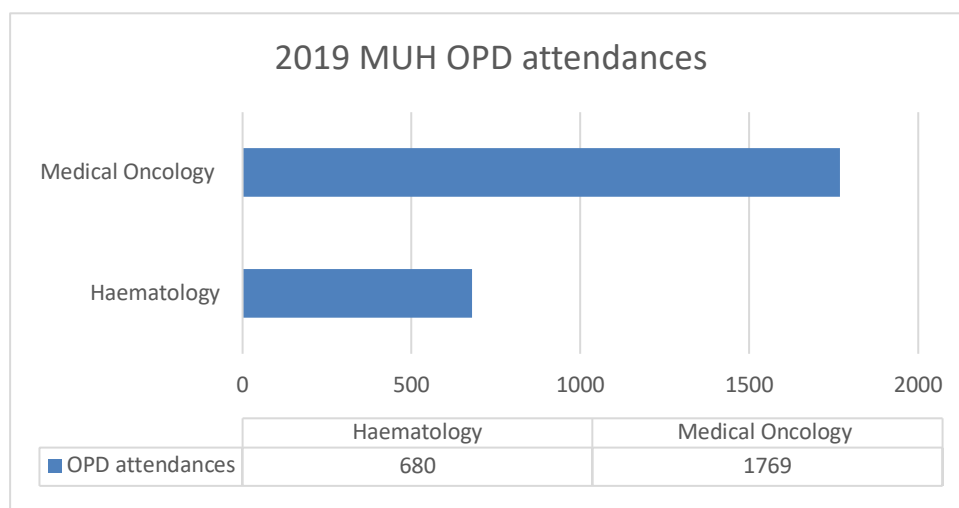
## Mayo University Hospital

The systemic Anti Cancer Treatment (SACT) service at MUH continues to deliver an expanding service to cancer patients in our region. The following are the numbers that attended the service in MUH in 2019

In 2019 4440 patient day ward attendances were recorded by HIPE for the administration of SACT and supportive therapies.

The NCCP *time to treatment* KPI, which measures the number of patients referred who commence treatment within 15 working days of referral, has a 95% target. MUH achieved this and above in 2019. There was 324 new treatment starts recorded and 99% of these were treated within KPI .

The total combined number of haematology and oncology outpatients for MUH in 2019 was 2449 : 1769 Oncology, 680 Haematology.



In addition to Outpatient activity, 671 in-patient reviews took place by the CNS liaison nurse. This included 32 patients with a newly diagnosed cancer.

A new nurse led oral systemic anti-cancer therapy (SACT) clinic was set up in 2019 and the first clinic took place in April in the outpatients' department. This was established in response to an identified service need due to the increased number of SACT and growing pressure in the oncology/haematology day ward for spaces and

treatment slots. This clinic takes place every two weeks in the outpatient department, with two dedicated rooms and is co-ordinated by the CNS and ANP. In 2019, 92 reviews took place. In line with balanced regional development as previously stated, we plan to progress an ambulatory cancer centre to increase capacity in the oncology/haematology day ward to meet service need.

The implementation of the National Clinical Information System, NCIS, directed by the NCCP went live at the end of 2019.



## Portiuncula University Hospital

Portiuncula University Hospital has a well established nurse - led Oncology Unit. It is a satellite service of University Hospital Galway and is part of the Saolta University Health Care Group. The service has been in existence since 2001. Treatment and assessment in the oncology day ward is provided by a nursing team. Each member of the nursing team is highly educated/trained in the area of oncology, all have achieved Higher Diploma in Oncology Nursing status and exercise expert clinical competence in all areas related to cancer care. Two medical oncologists (Dr Silvie Blazkova and Prof Maccon Keane) and a radiation oncologist liaise closely with the oncology nursing staff. The department is supported by a full time medical secretary.

Medical oncology clinics are held on a weekly basis and a radiation oncology clinic is held bi-annually. The oncology day ward consists of six treatment bays with recliner couches for the patients. Patients attending for chemotherapy receive a comprehensive education programme prior to starting their treatment regimen. This ensures that everyone is fully informed about their disease and their drug treatment schedule prior to starting.

## Sligo University Hospital

The Sligo University Hospital Haematology/Oncology Service reports a very active year in 2019. Our Haematology/Oncology day ward treated a record number of patients and our 16 bedded Oncology/Haematology inpatient unit also reflects a high level of activity, supported by our Aseptic pharmacy,

The Oncology/Haematology Service at SUH is led by two Consultant Medical Oncologists:, Dr Michael Martin and Dr Ala Yousif and two Consultant Haematologists: Dr Andrew Hodgson and Dr Aine Burke. The team is supported by two Advanced Nurse Practitioners: Geraldine Walpole in Haematology and Anne Mullen in Oncology and a multidisciplinary team including Clinical Nurse Specialists, Clinical Nurse Managers, research nurses and specialist day ward and inpatient nurses. Specialist pharmacists from our aseptic unit also support the Systemic Anti-Cancer therapies programme. We have 10 nurse prescribers and 1 nurse x-ray prescriber also as part of our wider team.

The number of cancer cases increased by about 3% a year since 1994 with 20,084 new cases of invasive cancer each year in Ireland.

The approx. number of patients who attended medical oncology clinics in 2019 was 780 and the radiotherapy clinic was 50 patients.

Portiuncula Oncology day ward is an exclusively nurse led unit, we are highly motivated to practice in line with the most up to date research and best practice. Professional development is key and we undertake monthly journal clubs, attend regular conferences and undertake audit and research.

Caitriona Duggan is the Registered Advanced Nurse Practitioner in Oncology. The role of RANP Oncology in PUH covers both inpatients and outpatient clinics. Caitriona also reviews patients in the oncology department with various medical issues secondary to their treatment regime and disease. This enables the treatment to be given on a timely basis and avoids GP/Emergency department visits. Caitriona also looks after a caseload of patients receiving oral therapy treatments releasing capacity in the oncology day ward

The Haematology/Oncology MDM link in with various multidisciplinary meetings at University Hospital Galway as the cancer centre, in particular :the Breast, Respiratory, Gastrointestinal, Genitourinary and Haematology cancers. These MDMs continue to grow in number and we are proud to say that we deliver on our KPIs with no waiting lists in Sligo in 2019.

Building links with the community partners continues, through our connection with local volunteer groups. We work closely with Sligo Cancer Support Group having onsite visits regularly, in particular weekly Bio Energy and Counselling treatments for our inpatients. In conjunction with the Sligo Support Group, we have set up a support group for Myeloma patients. Our local charity SHOUT continues to grow providing patients and their families support when it is needed. The charity supports both the inpatient and day services unit to ensure a more comfortable environment for our patients.



# Multidisciplinary Team Meetings



Ms. Cathy Walsh  
MDM Co-ordinator



Ms. Brid Gavin-O'Connell  
MDM Co-ordinator

Multidisciplinary team meetings are considered to be the hallmark of high quality patient centred care, providing personalised treatment plans for all cancer patients. Multidisciplinary working is promoted by the National Cancer Strategy 2017-2026 which outlines the direction and focus for cancer services in Ireland in the coming years.

The primary purpose of the multidisciplinary meeting (MDM) is to ensure best practice and to standardise patient care in line with NCCP guidelines. MDM's aim to ascertain or confirm a patient's diagnosis, establish the clinical and pathological stage of their disease and by prompt, effective multi-disciplinary decision, make and recommend a suitable clinical pathway of treatment and care for each individual patient.

Membership of each MDM can vary, but it usually consists of Radiologists, Pathologists, Surgeons, Medical Oncologists, Radiation Oncologists, Clinical Nurse Specialists and Advanced Nurse Practitioners.

## The Saolta Healthcare Group:

The Multidisciplinary Programme within the Saolta Cancer Centre continues to be a high volume programme and is considered to be one of the busiest in the country. An extensive schedule of meetings is held on a regular basis covering 12 different tumour sites.

The Saolta Group Cancer Programme is hosted at UHG but has multisite video link connectivity to LUH, MUH, PUH, RUH & SUH and other hospitals nationally as appropriate.

UHG has an MDM database for MDMs, but needs to progress to a group wide MDM electronic system. Last year saw significant progress on two information systems projects which is hoped will greatly enhance our patient tracking and analysis functionality across the group and nationally. They are:

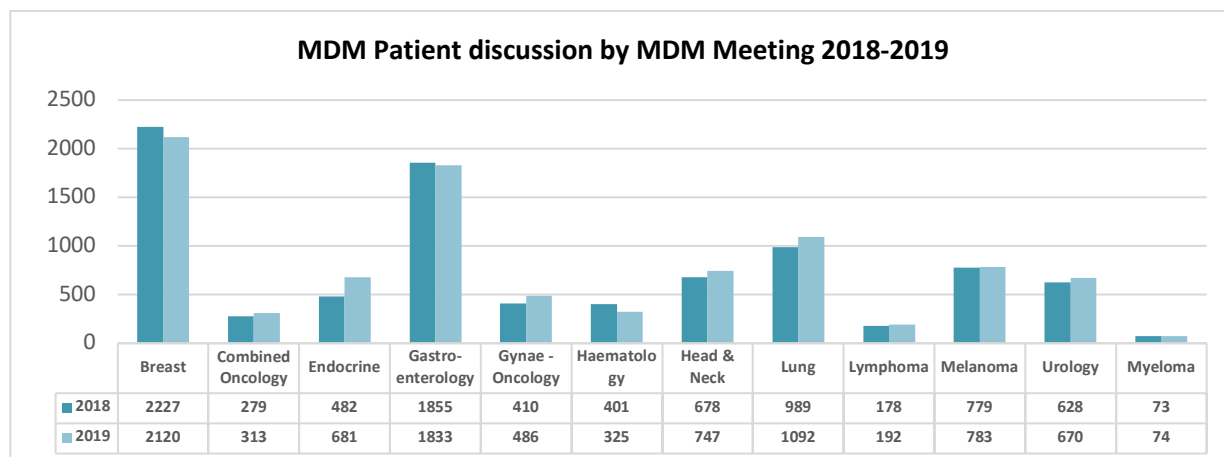
- The IPMS (group wide PAS)
- NCIS (The national clinical information system for oncology)

The NCIS system was piloted in UHG for one tumour site (Head and Neck Cancer MDM) and it is anticipated that this will be progressed further in 2020.

It is envisaged that in 2020, a 'trial of concept' for cancer services for the Saolta University Healthcare Group, will be established as a Managed Clinical and Academic Network (MCAN). This new governance structure will aim to achieve European accreditation for the cancer centre at University Hospital Galway and has the potential to transform the way cancer services are managed and delivered across the region.

We wish to take this opportunity to thank Tina Howard, who left her MDM coordinator role in 2019. Thanks for many years of dedicated service to the MDM teams. We wish Tina well in her new post within the Symptomatic Breast Unit.

The following table shows the MDM activity across the 12 tumour sites for 2018 & 2019.





**Jean Kelly**  
*Chief Director of Nursing & Midwifery*



**Ellen Wiseman**  
*ADON for Cancer Services*

Nurses within Galway University Hospitals care for cancer patients through every stage of their journey, from initial diagnosis to surgery, radiotherapy, chemotherapy, survivorship and palliative care if required.

The cancer patients journey crosses all specialties with nursing care given both in the inpatient and ambulatory care setting. Nursing Care is delivered by skilled caring staff who demonstrate our core nursing values of care, compassion and commitment.

2019 brought many opportunities and challenges for cancer nursing.

Our biggest challenge was the loss of our long-time colleague and friend Anna O Mara.

Anna worked as a key part of our cancer nursing team for many years, having spent time in the Symptomatic Breast Unit, Oncology Day Unit and as CNS in our GI cancer team. Anna left a wonderful legacy behind her in how she cared for her patients at every stage of their journey and supported all her colleagues and friends over the years.

Anna's loss has left a huge void in our nursing team. Ar dheis Dé go raibh a hanam dílis.

In 2019, we continued to focus on several clinical performance initiatives and our patients' experience, while also experiencing high patient volumes and staffing challenges.

Our staff and leadership teams pulled together, as always, and we celebrated many successes along the way.

**Staffing** We welcomed new nurses to our services and others moved to pastures new. We wish all of the nurses in Cancer Services- new and old- the very best of luck in their endeavours.

We were delighted to appoint nurses into new posts in 2019 and welcomed;

- Laura Wrafter into her post as Clinical Nurse Specialist for Skin cancer

- Rachael Dalton into her post as candidate ANP Prostate cancer.

We also ran a successful Clinical Nurse Manager 1 campaign for our inpatient wards with staff due to take up posts in 2020.

**Education and professional development** are key in nursing and in 2019. We are delighted to continue our collaborative partnership with NUIG with the appointment of 4 of our nursing staff as adjunct lecturers within the School of Nursing and Midwifery:

- Rachael Dalton- CNS Prostate
- Catherine Masterson- CNS Breast
- Veronica McInerney cancer clinical trials
- Helen O Reilly CNMIII Cancer services

In 2019 our nursing staff contributed to 4 publications on cancer related topics in international journals.

We supported 6 nurses to further their education at both masters and post graduate diploma level. This would not have been possible without the funding support of the CNME for which we are very grateful. Post graduate qualification is key in providing specialist quality care for our patients and is a key strategic goal of our nursing department.

In the last quarter of 2019 cancer services undertook the GE improvement project – this helped to streamline processes and identify areas for improvement. This was a very collaborative piece of work with input from all the multidisciplinary team.

We look forward to new nursing developments that are coming our way in 2020 – especially the end of life coordinator post which will support and coordinate the implementation of quality standards for end of life care in hospitals.



**Our long-time  
colleague and  
friend Anna O'Mara**

*Ar dheis Dé  
go raibh a hanam dílis*





**Dr Dympna Waldron**  
*Consultant Palliative Medicine*  
*Lead Clinician*

*Dr Eileen Mannion*  
*Dr Cathryn Bogan*  
*Dr Camilla Murtagh*  
*Dr Anna Cleminson*  
*Dr Sharon Beatty*

**Palliative Care Nursing:**  
*Mary Burke*  
*Vanessa Waterson*  
*Niamh Gantley*  
*Aine McNamara*



## Galway University Hospital

Palliative care service providers continue to face challenges as advances in modern healthcare have led to new patterns of living with complex multimorbidity and complex needs.

Appropriate Integration of Specialist Palliative Care can decrease the reliance on the acute hospital sector; improve patient experience and satisfaction; improve patient quality of life and ensure improved continuity of care throughout the patient journey. Recent U.S. studies have demonstrated that palliative and cancer services working together had increased survival rates, improved outcomes and quality of life while reducing costs (Temel *et al.*, 2010; Greer *et al.*, 2012; Temel *et al.*, 2017).

We continued to deliver a 24/7 liaison palliative care service to over 1,200 patients referred to our UHG service each year and 24/7 telephone support to palliative care patients in PUH and RUH.

## Research / Publications

This was an exciting and prolific period for Department Research led by Professor Dympna Waldron. There were numerous publications across an array of topics reflecting the diversity of patient issues we encounter in our day to day clinical practice. (see *publications* section)

## Roscommon University Hospital

We look forward to the new 8 bedded Palliative Care/ Support Care Unit which is due to commence in March 2020. The opening of this unit in the future which will facilitate admissions of palliative care patients from the community for symptom management and end of life care and step down of palliative care patients from other hospitals in the region to allow Roscommon patients to receive the comprehensive care they need, in an appropriate setting, closer to home.

## 2019 Activity

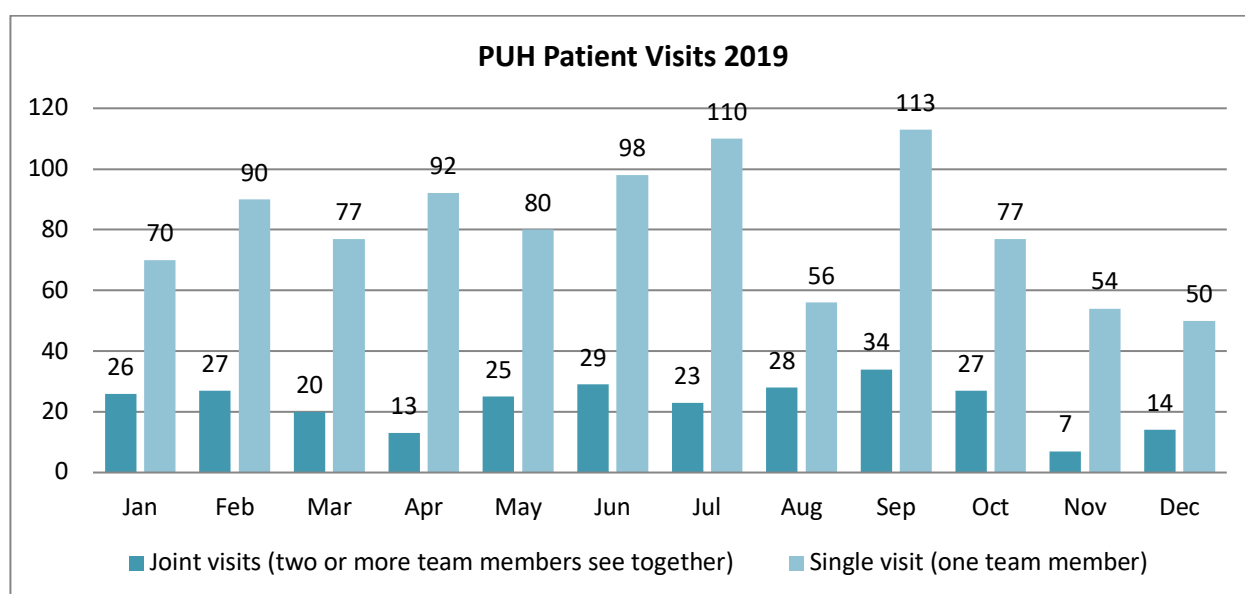
	UHG	RUH
<b>Total Referrals</b>	1258	115
<b>New Referrals</b>	865	
<b>Malignant Diagnosis</b>	570	
<b>Death</b>	441	55
<b>Discharges</b>		43

## Portiuncula University Hospital

The palliative care service in Portiuncula is a hospital liaison service, providing assessment and support for patients with advanced life limiting illness. The service is attended by Dr Sharon Beatty and Dr Kathleen Cronin, Helen Ely CNS and Barbara Flynn CNS.

In 2019 there were a total of 223 referrals to the specialist palliative care service. 91 were malignant and 132 non-malignant. Of those patients referred, 48 % died in hospital and 38% were discharged to community palliative care services for further follow up.

The team delivered 'Final Journeys' training for hospital staff and small group teaching on palliative and end of life care for NCHDs. In 2019, a hospital wide survey of staff confidence and competence was completed, to guide further educational initiatives. Staff from PUH, with the support of the end of life care committee won nine individual quality improvement grants through the Hospice Friendly Hospitals QI programme. These developments were put in place to support quality improvement initiatives for end of life care in the hospital. The Bi-annual remembrance service was well attended by relatives of those deceased in the previous 6 months.





## eHealth initiative (NCIS)

The National Cancer Information System (**NCIS**) system training has commenced for Pharmacy staff which will ensure that there is much more timely clarity where patient treatment is concerned with all prescribing, drug manufacture and treatment being coordinated on one system across medical, pharmacy and nursing interfaces. We hope to go live with this system in 2020.

## Pharmacy functions

The pharmacy supports cancer patients in UHG with five distinct but complimentary services:

**A technical compounding** (aseptic preparation). All medicines are aseptically prepared onsite to a prescriptive order in our Pharmacy Aseptic Services Unit (PASU) assuring the microbiological integrity of the final preparation. The oncology nurse is therefore protected from any unnecessary drug manipulation at ward level. The technical service currently prepares approximately 1,600 items per month, making it one of the busiest pharmacy aseptic units in the country.

**A clinical service**, 'near patient' service. It is similar to that provided by clinical pharmacists to other specialities in the hospital. This service is currently involved in improving chemotherapy/SACT protocols to meet the needs of the ambulatory care nurse led service and also in supporting prescribers in making effective and timely decisions in the prescriptive orders.

**A clinical trials service**, cancer chemotherapy or SACT being a major component of their work. Their role involves the management of clinical trials medicines, their receipt, safe storage, rigorous legal and investigational documentation and the supply of trial medicines, either to the technical service for preparation or in the case of oral cancer medicines direct dispensing and supply to the patient.

**A further dispensing service** for oral and compounding service for intravenous medicines that are supplied on a 'compassionate basis' (typically after a phase III trial has finished but before full availability as a licensed medicine has been achieved), or available licensed medicines waiting for HSE funding approval (High Tech scheme) whereby the cost if obtained from a community pharmacy would be prohibitive to the patient (typically €5000 to €7000 per month).

The more **traditional supply** of other medicines, and pharmaceuticals required by the cancer wards and ambulatory day care.



**Dr Joe Martin**

*Consultant Radiation Oncologist  
Lead Clinician*



In 2019 the department continued to develop its services.

The High Dose Rate (HDR) brachytherapy treatment for prostate cancer, which is a joint initiative of SAOLTA and the NCCP, continued to develop and expand. The Radiotherapy department at UHG continued to lead the national roll-out for HDR brachytherapy.

Deep Inspiration Breath Holding for left sided breast treatments was rolled out. This system delivers the treatment only when the patient has held their breath. This results in a reduced dose of radiation to the heart and reduces a chance of long term heart complications.

The Physics team completed acceptance testing for collapse-cone planning on the units planning system in 2018 and commenced using this method of dose calculation in 2019.

In 2019 a Research Agreement was signed with a company called VisionRT. This enabled installation of a Surface Guided Treatment system on one LINAC. This system monitors alignment of a patient on the treatment couch, using 3 alignment cameras positioned in the ceiling of the LINAC room, with their position during CT scanning. This increases the accuracy of the patient's treatment. We were the first public hospital in the Country to use this system.

In January 2018 East Galway and Midlands Cancer Support commenced a new daily bus service from Ballinasloe to the Radiotherapy department. This has proved to be an invaluable service to patients in the Ballinasloe area. This has now been followed in 2019 by Cancer Care West (CCW) commencing a weekly bus service from Mayo. The bus brings patients to stay at Inis Aoibhinn the CCW lodge on a Monday and back to Mayo on the Friday.

Enabling works commenced for the construction of the Phase 2 Radiation Oncology build, this is one of the Government Priority Projects in the HSE Capital Plan for 2018 - 2021. This will provide state-of-the-art facilities for the patients of the West and North West, and an appropriate environment for staff to deliver optimal care.

In preparation for the new radiotherapy centre multidisciplinary teams were formed who have been tasked with ensuring the smooth and safe transition to the new radiotherapy centre. These teams will allow the department to be able to take full advantage of the expanded treatment options that will become available with the new centre.

All staff groups in the department continued to keep themselves up to date with current and future development through in-house CPD sessions, National and International Conferences, different training events, workshops, and seminars.

Radiotherapy nursing remained very active in 2019 with on treatment reviews, ambulatory care which included intravenous fluids and blood product replacement. Increased complexities of treatments have increased ambulatory care activities which in turn minimize hospital admissions. They have also continued to develop specific multi-institutional nursing metrics in ambulatory radiation oncology. This is a very exciting project developed in 2018 involving all public radiation oncology centres and aims to standardise quality nursing care. The numbers transferred to telephone follow-up with the Advanced Nurse practitioner continue to increase on an annual basis. In collaboration with urology colleagues the ANP led erectile dysfunction clinic also continues to grow.

The department continued its fund raising activities holding numerous coffee morning in support of COPE, St Vincent De Paul Society, The Bewleys Coffee morning and others. Each event raises €800-€1000 for the particular cause.

Activity levels are currently around maximum capacity, and are detailed below. Our compliance to the "ready to treat" NCCP KPI was 86% for 2019.

In addition to clinical services, the department is a centre for national training for oncology nursing, radiation therapists, clinical dietetics, speech-and language therapy, medical physics and radiation oncology specialist trainees. Further posts for Galway from the Workforce Plan for Radiotherapy were released in 2019.

	2019
New referrals to Radiation Oncology	1462
Review Clinics (UHG, SGH, MGH & Portiuncula)	3852
Registered Advanced Nurse practitioner Virtual follow-up, telephone clinic	1558
RANP Erectile Dysfunction Clinic- new referrals	145
Patients treated with EBRT (External Beam Radiation Therapy)	1054
Patients treated - Orthovoltage	28
Patients treated - Brachytherapy Prostate Seeds	39
HDR-Brachytherapy	67
Total number of patients treated	1271
Ultrasound Biopsy (Requires Anaesthetics)	39
Number of Fractions Treated on LINACS - EBRT	20422

### Patients treated – Brachytherapy Gynae

Description	2019	
	Patients	Activities
HDR Intravaginal (15312-00 No Anaesthetic Requirement)	27	68
HDR Intrauterine (15304-00 Anaesthetic Required)	0	0
HDR Intravag & Auterin (15320-00 Anaesthetic Required)	18	54
	45	122

\* RANP phone follow up clinics not counted in Review Clinics

\*\*2019 Patients treated with EBRT – patients commencing treatment on multiple areas on the same date are counted as one patient start as per NCCP guidance.

\*\*\*A cohort of patients had brachytherapy and EBRT as their treatment plan

## Radiotherapy Physics

The NCCP workforce plan resulted in an additional principal physicist and dosimetrist joining the team. Preparations for the Phase-2 expansion saw the initiation of multi-disciplinary groups to focus on technology developments and advancements in treatment techniques. Members of the Physics Dosimetry and Engineering team contributed to these groups.

Following the first ten patients, the Physics team participated in an audit of the newly launched HDR prostate treatment programme. The results of commissioning work were presented at the IAPM Annual Scientific Meeting. A total of 26 patients received this treatment by end of 2019.

A new treatment planning system, Elekta Monaco, was installed to replace the OTP system, which reaches its end of support in May 2020. This system allows both collapsed cone and Monte Carlo calculations of dose thus producing more detailed dose data for patient treatment plans. The collapsed cone algorithm was released clinically for thorax planning during 2019.

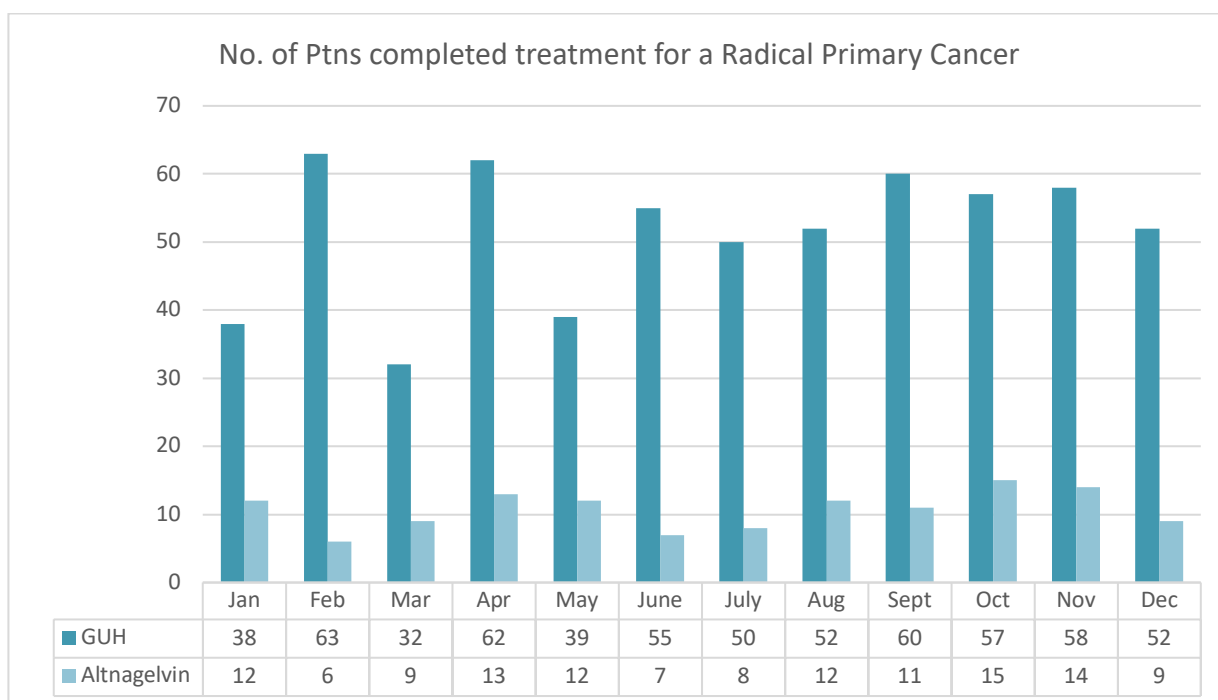
Deep inspiration breath-hold (DIBH) is a treatment technique aimed at reducing the radiation dose to the patient's heart tissue when treating left-sided breast cancer. This technique was developed and commissioned by the Physics team using a spirometry-based breath-hold monitoring system (SDX) and rolled out clinically by the radiation therapists.

In November of 2019, a surface guidance system (Vision-RT SGRT) was installed in one of the linac bunkers. This technology uses optical light surfaces to assist with aligning patients accurately in the correct treatment position for optimal treatment. Commissioning and testing of this system was carried out by the Physics team prior to applications training and go-live for the treatment team in December of 2019.

The team carried out a 90-day trial of an artificial-intelligence based auto segmentation software system (Mirada) in the summer of 2019. This system uses AI technology to delineate patient organs within CT scan image sets to assist with treatment planning. This system also included deformable image registration (DIR) and dose warping software, which was studied and tested as part of an MSc project examining optimising treatment plans for patients receiving retreatments.

Two second-year physics residents underwent training in Galway during 2019 and both had their work published at the IAPM Annual Scientific meeting and abstracts published in the European Journal of Medical Physics.

*See Publications (section 12) for Medical Physics Publications*







**Dr Clare Roche**  
*Group Clinical Director*



The Radiology Programme for the Saolta Group provides an extensive diagnostic, therapeutic and palliative Interventional Radiology Service facilitating staging and surveillance imaging (CT, Ultrasound, MRI, Nuclear medicine) while supporting a large number of multidisciplinary meetings.

Radiology group activity continues its rise exponentially every year, especially the demand for Oncological Imaging.

## Saolta Activity 2019

2019	UHG	RUH	Totals
Breast Imaging	14502	-	14502
CT	25229	4598	29827
General Imaging	112496	16593	129089
Interventional Radiology	4116	124	4240
MRI	7126	-	7126
Nuclear Medicine	2288	-	2288
Fluoroscopy Radiology	1205	-	1205
Theatre	3403	-	3403
Ultrasound	15145	3030	18175
<b>Totals</b>	<b>185,510</b>	<b>24,345</b>	<b>209,855</b>

Certain modalities have seen major increases e.g., CT has increased by 24.8% in UHG since 2016. CT in particular is becoming a group wide directorate priority as increasing workload on a background of staffing shortages and inadequate ageing equipment has resulted in waiting lists for CT across the group. The need for additional and replacement equipment is an absolute priority.

MRI activity has remained at a consistently high level across the region since 2016. Demand for MRI have only been achieved by extra weekend and extended day insourced and outsourced working. While this has been successful in reducing the long waiting times for MRI over the past few years, the existing MRI units are at maximum capacity. A second MRI is planned for UHG hopefully coming on line in 2020.

The ever increasing demand for diagnostic and Interventional oncology radiology requires an expansion of the services on all sites across the group. Having already maximised existing equipment usage HSE investment is considered the most cost effective long term solution to delivering a high quality timely service, addressing and

integrating diagnostic imaging and Interventional oncological care within our region.

In order to optimise patient care, in general but especially for Oncology, discussions have commenced about implementing NIMIS on the UHG and RUH sites to join the other hospitals within Saolta LUH, SUH, MUH and PUH, all already on the national system.

Work continues on the roll out of the managed clinical and academic networks, a single group patient identifier, IPMS a single group RIS/PACs and order coms system will allow for integration of OncoRadiology services across the group. Matching capacity and need will see improvements for the Oncology services and ultimately and most importantly the patients.

The Radiology departments across the group support a large number of Oncology MDMs, in many cases with real time cross group input from several of the departments at the same meetings.

Cancer Site	Frequency	Outside Link Up
Endocrine	2 per month	No Link Up
Myeloma	Fortnightly	UHG, SUH
Haematology	Weekly	No Link Up
Skin	3 per month	No Link Up
Lung	Weekly	RUH, MUH, SUH
Combined Oncology	3 per month	UHG
Urology	Fortnightly	LUH, SUH
Symptomatic Breast (excl. BreastCheck)	Weekly	LUH, SUH, MUH
Colorectal Screening ( <i>Polyp</i> )	Weekly	SUH, RUH
Gynaecology	3 per month	UHG, MUH
Lymphoma	2 per month	UHG, SUH
Gastrointestinal Cancer	Weekly	LUH, MUH, SUH, RUH, PUH
Head & Neck	Weekly	No Link Up
Oncology	Weekly	UHG, SUH, PUH





# Health and Social Care Professionals

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**Grainne O'Byrne**  
*Dietetics Manager*

*June Barrett, Dietitian Haematology/Oncology*  
*Ruth Kilcawley, Senior Dietitian Haematology/Oncology*



## Clinical Nutrition & Dietetic Service to Haematology Oncology and Radiotherapy

Patients with cancer are amongst the most malnourished of all patient groups, with up to 80% receiving multimodal therapy experiencing unintentional weight loss. Unintentional weight loss and muscle protein depletion can effect tolerance to cancer treatments, treatment outcomes and quality of life.

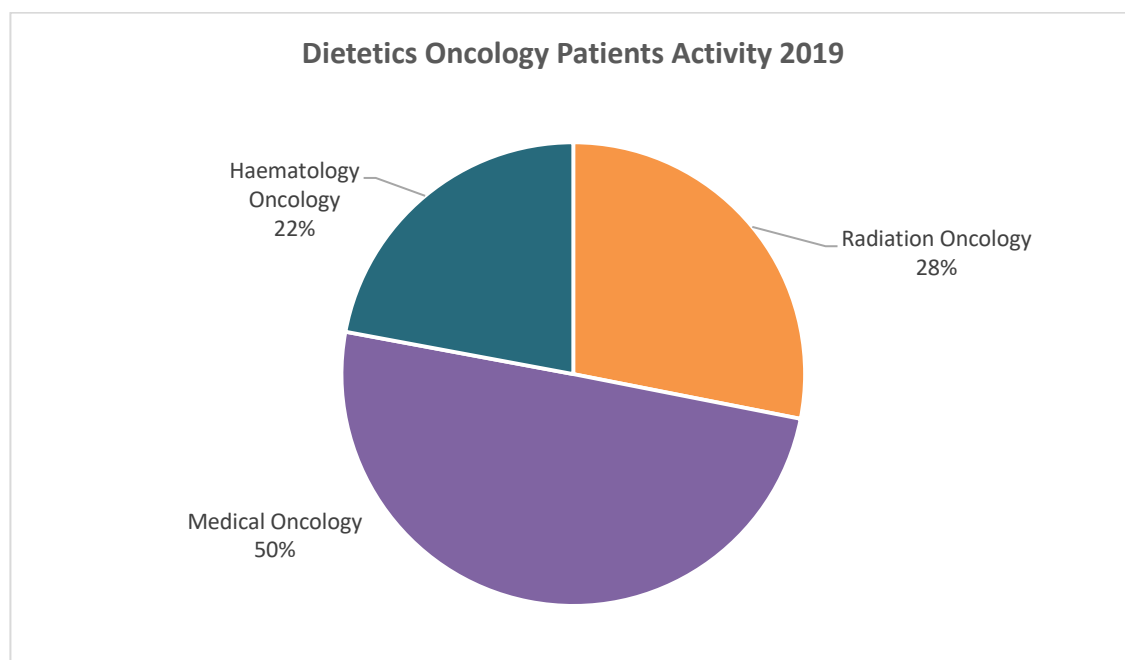
Oncology Dietetics aims to maintain and improve the nutritional status of patients undergoing anticancer treatment. In UHG, Medical Oncology and Haematology share 1.0 WTE Senior Dietitian, providing inpatient support only. Radiation Oncology has a 1.0 WTE Senior Dietitian post for inpatient and outpatients.

In 2019 367 patients were referred through the medical oncology, haematology and radiation oncology teams for nutritional assessment and support: 65% Oral nutrition support, 15% enteral nutrition support, and 20% parenteral nutrition support.

### Achievements:

Lung cancer patients: 40-60% of lung cancer patients experience unintentional weight loss and cancer cachexia occurs in approximately 50% of cancer patients. Recommendations are that all lung cancer patients undergoing radiotherapy are seen by the dietitian. Capacity prevents the radiotherapy dietitian seeing all these patients. In 2019, we started to screen all lung cancer patients receiving radiotherapy, with patients identified as high nutritional risk receiving dietetic intervention on their first week of treatment. All lung cancer patients were also presented with valuable nutrition literature before treatment commenced which aimed to maximise their nutritional status based on common side effects from treatment and increased their awareness.

Continued communication within the multidisciplinary team in a timely manner to ensure artificial feeding was commenced without delay.





**Pamela Normoyle**

*Health Ireland Lead, Galway & Roscommon University Hospitals*

## Summary of 2018 Healthy Ireland – Health & Wellbeing Activity

Actions	Outcomes
<b>3.0 Health Literacy</b>	<ul style="list-style-type: none"> <li>- All written communication leaflets are NALA approved.</li> <li>- Guiding tool established using the European Clear Communication index.</li> </ul>
<b>3.2 Implement Self Care Programmes</b>	<ul style="list-style-type: none"> <li>- Type 1 and Type 2 Diabetes Adult Education sessions.</li> <li>- COPD clinics in line with National framework.</li> <li>- Referral to cardiac rehabilitation programmes for all cardiac risk patients.</li> <li>- Prostate cancer information evenings- survivorship programme.</li> <li>- Implementation of Healthcare Behaviour Change model “Making Every Contact Count”.</li> </ul>
<b>3.3 Patient Advocate Liaison Service</b>	<ul style="list-style-type: none"> <li>- Provision of general information to patients and families.</li> <li>- National Patient Experience Survey</li> <li>- Patient Experience Fair Day- to inform patients, their families and carers that we are acknowledging their feedback and implementing improvements.</li> <li>- Supporting butterfly scheme, with the aim to improve patient experience of clients with dementia in acute hospital settings.</li> <li>- Supporting roll out of #hellomynameis campaign.</li> </ul>
<b>4.2 Tobacco</b>	<ul style="list-style-type: none"> <li>- .5 WTE post in place.</li> <li>- 6 smoke free campus committee meetings.</li> <li>- Multiple referrals to smoking cessation service.</li> <li>- Information stand on world no tobacco day.</li> </ul>
<b>4.3.3 Nutritional Standards</b>	<ul style="list-style-type: none"> <li>- Patient menus reviewed in line with National policy on food and nutritional care in hospitals.</li> <li>- New patient menus established and implemented on both sites.</li> </ul>
<b>4.3.4 Calorie Posting</b>	<ul style="list-style-type: none"> <li>- HSE calorie posting policy implemented in UHG</li> <li>- Breakfast and snack items implemented in Merlin Park. Awaiting implementation of lunch items.</li> </ul>
<b>4.3.4 Vending</b>	<ul style="list-style-type: none"> <li>- HSE Healthy Vending policy implemented on both sites.</li> </ul>
<b>4.3.5. Nutrition Assessment</b>	<ul style="list-style-type: none"> <li>- Nutrition Screen tool implemented in UHG.</li> <li>- Protected mealtimes established.</li> <li>- Red Tray initiative continues.</li> </ul>
<b>4.4 Active travel</b>	<ul style="list-style-type: none"> <li>- Continued promotion of active travel options, including <a href="http://www.hospitalwalks.com">www.hospitalwalks.com</a> website.</li> <li>- Weekly staff Pilates classes.</li> <li>- Launch of “End PJ Paralysis” initiative , which promotes physical activity amongst our service users.</li> <li>- Additional bike shelter provided by NTA to accommodate secure and safe bike parking during the working day.</li> <li>- Love life, love walking. Numerous staff members participated in physical activity awareness day.</li> <li>- World physiotherapy day- promoting physical activity for life.</li> </ul>
<b>4.7 Breastfeeding</b>	<ul style="list-style-type: none"> <li>- .5WTE currently in place.</li> <li>- Annual report for 2018 submitted to national BFHI office.</li> <li>- Awareness day on benefits of breast feeding in world prematurity day.</li> <li>- Parent Education sessions</li> <li>- Antenatal Breastfeeding workshops.</li> </ul>
<b>4.9 Positive Mental Health</b>	<p>Promote awareness of supports available &amp; information on positive mental health, stress, addiction and other mental health issues for staff</p> <p>Expand mindfulness &amp; stress management training for staff</p> <p>Staff health and wellbeing day highlighting existing supports in physical activity, diet and stress management.</p> <p>Lunchtime mindfulness sessions every Monday, Wednesday and Friday.</p> <p>Staff Choir in Merlin Park and UHG.</p>



Health Protection and improvement with the Launch of our flu vaccine campaign for Healthcare workers in UHG.  
Pictured in photo includes a large number of nurses and midwives trained to deliver the flu vaccine to fellow healthcare workers.



Staff Pilates sessions in UHG.  
Picture outlines some staff members who participated in class.



Outlines the launch of "End PJ paralysis". A health promotion initiative to encourage patients and service users to remain physically active whilst admitted to hospital.





**Ms. Ciara Breen**

*Interim Occupational Therapy Manager in charge III*

*Elaine Feely, Senior Occupational Therapist*



Although there continues to be no designated Occupational Therapist for Oncology in UHG, Elaine Feely, Senior Occupational Therapist in Radiotherapy and Radiation Oncology, continues to support patients under the overall umbrella of Oncology in a single-handed and challenging role. Due to the competing demands of the role, Elaine focuses most of her time on in-patient care, but does offer a small amount of out-patient input. This year that was primarily focused on delivering a pilot group intervention as part of a launch survivorship programme.

Occupational Therapy interventions in the in-patient setting often focus on maximising the person's independence, maintaining their quality of life and assisting in discharge planning using a person-centred approach.

**Interventions may include:**

- Assessment of activities of daily living, evaluating the impact of cognitive, motor and or sensory limitations experienced by the person with cancer.
- Assessment of seating needs to promote and maintain independence in posture/mobility.
- Assessment of splinting needs to prevent deformity and control pain.
- Assessment of a person's equipment needs to promote independence, maximise quality of life and facilitate home discharge and liaison with community (PCCC) services regarding provision and follow up.
- Interventions and rehabilitation to maximise functional performance in everyday activities/occupations.
- Provision of specialist advice in adapting occupations/activities of daily living to assist patients to cope with their illness e.g. relaxation technique, anxiety management, fatigue management, breathlessness management maximising patient and family coping skills to facilitate a home discharge.

**Out-patient interventions may include:**

- Advice and guidance about home adaptation or equipment requirements

- Off-road driving assessment and onward referral and liaison with on-road providers
- Splinting and management of hand function or other functional issues as a result of peripheral nerve injury or damage
- Supporting the person with cancer to achieve their functional goals in the areas of work, self-care or leisure
- Anxiety and stress management
- Fatigue management and energy conservation
- Assessment and intervention to address cognitive sequelae post cancer treatment

**Activity Level**

In 2019, 240 referrals were received. The service continues to be busy with supply exceeding demand throughout the year.

**Service & Professional Development in 2018**

- Occupational Therapy pathway for Cancer patients presenting with metastatic spinal cord compression is at implementation stage with inputs from OTs across multiple areas of the hospital.
- We are continuing to enhance our links with the Occupational Therapy services in Galway Hospice and in Primary, Community and Continuing Care in order to provide a streamlined pathway, and to optimise referral processes among services.
- A MDT Survivorship programme was piloted among lung cancer survivors, with OT components addressing fatigue management, pain and activity re-engagement. The COPM results indicated clinically important positive changes - mean change in performance score was 2.57 and change in satisfaction was 3. The COPM is an individualised measure designed for use by Occupational Therapists to detect self-perceived change in occupational performance problems over time. Studies suggest that changes in scores over two points are clinically important changes (Wressle et al., 1999, Law et al., 2014) indicating that this intervention achieved positive outcomes in the functional goals that patients set for themselves, and with their satisfaction.



## Catherine O'Sullivan

Physiotherapist Manager III UHG

Miriam Flatley Senior Physiotherapist,  
Fionnuala Ginty Physiotherapist



Staffing consists of 2.5 WTE Physiotherapists (2 Senior, 0.5 Staff Grade), providing a service to oncology, radiotherapy and haematology patients.

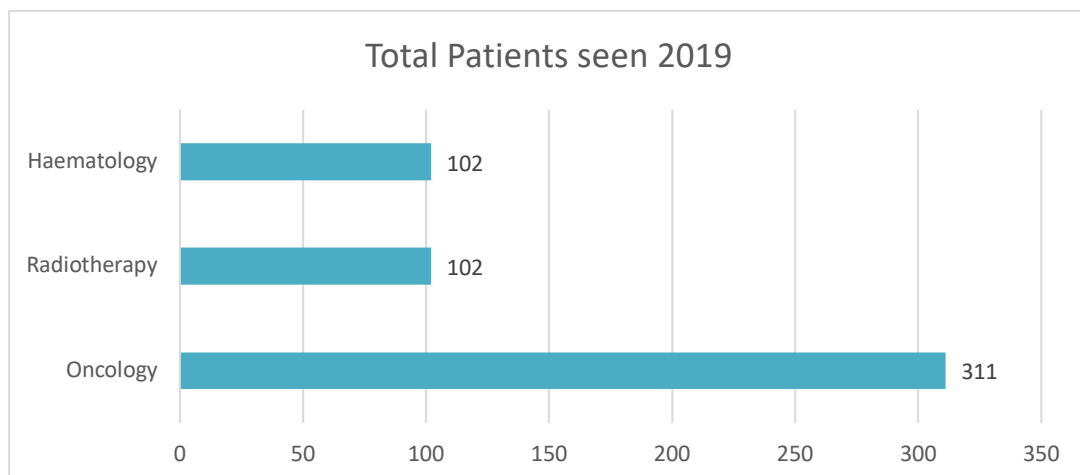
Physiotherapy plays a key role in the holistic management of patients throughout the cancer journey. The primary goal of rehabilitation is to assist the patient in achieving maximum physical and psychological functioning within the limits imposed by disease or treatment. There is widespread evidence to show the benefits of taking part in moderate levels of exercise through a cancer diagnosis and treatment.

In UHG, we provide a cancer rehabilitation service to patients at both a ward based level and gym rehabilitation as appropriate. Cancer rehabilitation is medical care that should be integrated throughout the oncology care continuum and delivered by trained rehabilitation professionals who have it within their scope of practice to diagnose and treat patients' physical, psychological and cognitive impairments in an effort to maintain or restore function, reduce

symptom burden maximise independence and improve quality of life in this medically complex population. Cancer Rehabilitation addresses the musculoskeletal, cardiopulmonary and functional impairments expected with cancer, cancer treatment, survivorship, advanced disease and end of life. We participate in weekly multidisciplinary team meetings with the focus on patient centred goal setting. This is integral to ensure the safe and timely discharge of patients from the acute setting and aid patient flow in a busy oncology service.

### Specific Service Areas

Physiotherapy can take place before or after surgery or it can accompany chemotherapy or other cancer treatments to improve patient survival. In UHG we provide services including pre operative assessment and rehabilitation for patients with a range of cancer diagnosis.



## Breast Cancer

Physiotherapy provides a limited service to patients during their breast cancer journey. As an inpatient, the focus is primarily on post operative shoulder exercises and lymphoedema risk

reduction. Outpatient treatment is directed towards musculoskeletal dysfunction, scar tightness and shoulder rehabilitation.

## Colorectal



*Deirdre O'Dowd, Clinical Specialist Physiotherapist in Critical Care*

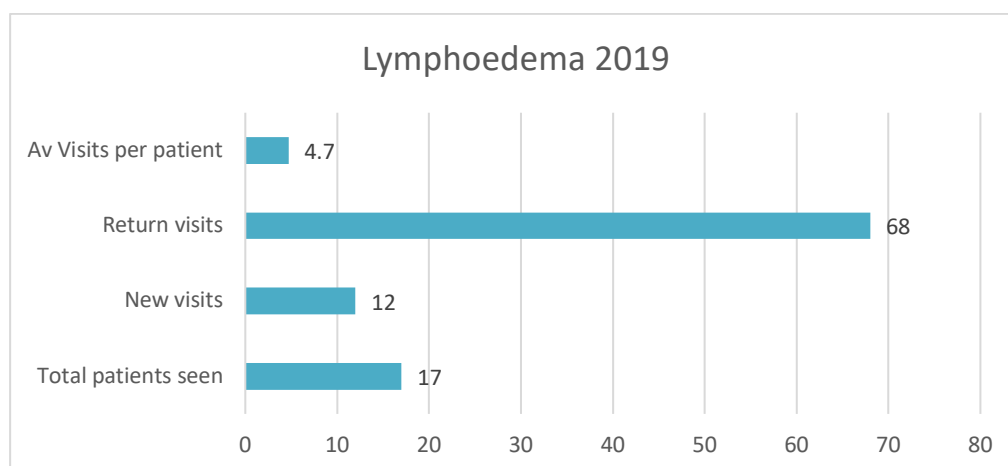
In 2019 physiotherapy were involved in developing a multidisciplinary team (MDT) led enhanced recovery after surgery (ERAS) programme for patients admitted to UHG for elective colorectal surgery. ERAS is the standard minimum care provided to patients following colorectal surgery internationally. Patients who

follow an ERAS program have been shown to have reduced post-operative complications and shorter length of stay. With the initial plan to integrate an ERAS program with the traditional post-operative pathway for Ms Hogan's patients, the long term goal is to expand across all colorectal and GI surgery in UHG.

## Lymphoedema

Lymphoedema is a well know side effect of cancer treatments including; surgery, chemotherapy, radiation therapy and endocrine therapies, which can adversely impact the lymphatic system. It is a chronic, progressive condition which becomes more complex when left untreated. It can cause swelling, pain, skin changes, cellulitis and reduced function which can be very distressing and

adversely affect quality of life. The exact incidence of lymphoedema is unknown in Ireland. It is estimated that more than 1 in 5 women who survive breast cancer will develop arm lymphoedema. Physiotherapy interventions for lymphoedema consists of exercise, skincare advice, complete decongestive therapy and garment prescription.



## Lung Cancer

Niamh Duignan Senior Physiotherapist Chronic Respiratory



International studies have shown that enhanced recovery after surgery (ERAS) programmes reduce post-operative length of stay (LOS) by 3-4.5 days.

Physiotherapy continues to support the rapid access lung clinic ERAS programme by providing exercise tolerance testing of patients diagnosed with lung cancer in unit 8 Merlin Park. The numbers referred to this service are growing incrementally- 8 patients per month initially to 40 patients now.

### Lung Survivorship Pilot Programme

A multidisciplinary programme was devised to address survivorship issues for lung cancer patients post thoracic surgery. Our aim was to improve exercise tolerance and quality of life. An eight-week

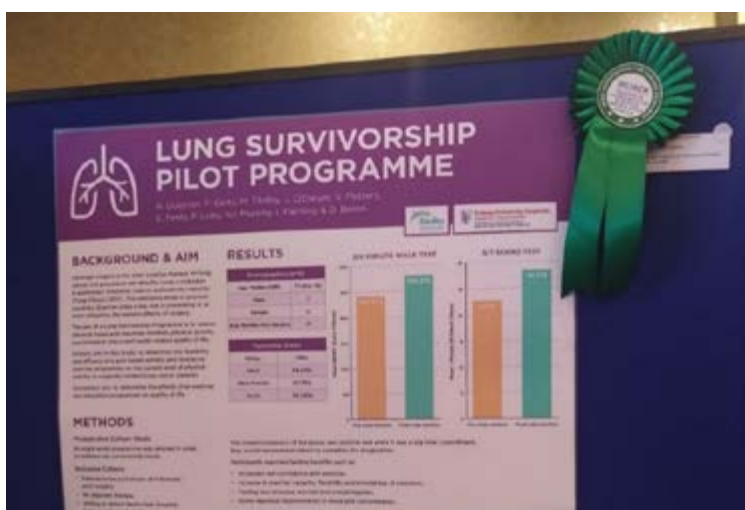
programme was created which addressed key survivorship issues.

10 participants attended a twice weekly programme (education x 1 session and exercise x 2) This was followed by a 45-minute interactive educational talk. Topics covered included diet, exercise education, monetary and legal advice, fatigue management, smoking cessation, shortness of breath management, and the personal impact of a cancer diagnosis.

Results: The majority of physical outcomes showed clinical significant improvements, Quality of life measures were largely positive including excellent feedback from our focus group



We presented our research at IACR (Irish Association of Cancer Research) in Feb 2020. Our poster was shortlisted for Best Poster Presentation in the Allied Health Grouping.



## Prostate



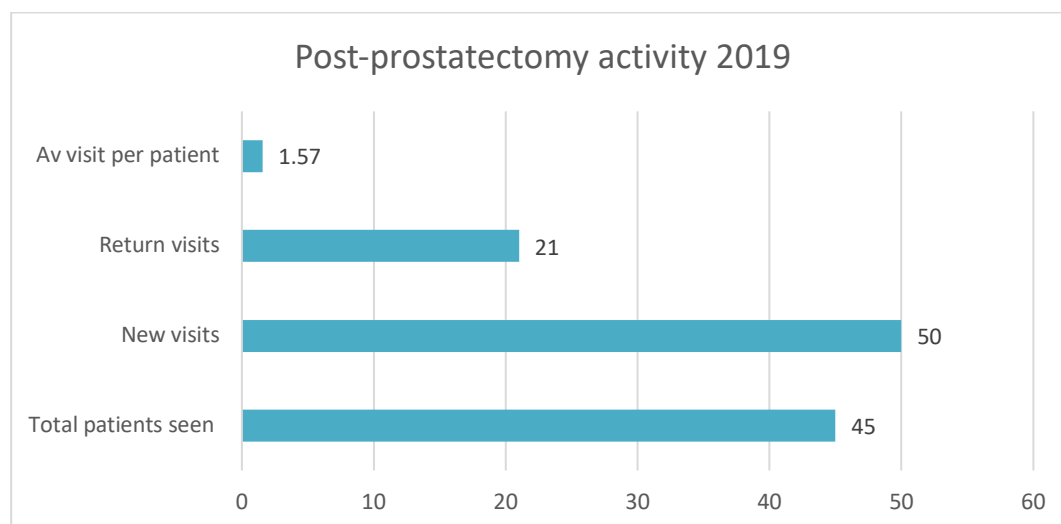
*Thomas Samuel, Senior Physiotherapist General Medicine*

Increasing cancer survivorship demands urological expertise in rehabilitation of incontinence and sexual dysfunction, and management of radiation co-morbidities such as haematuria and voiding dysfunction. Prostate Cancer UK Best Practice Pathway Support 2018 reported that 68% of men reported urinary incontinence. This has a major negative effect on quality of life in terms of mental and physical health, and social interactions. Often, it can be associated with long term conditions like skin irritation and skin breakdown, urinary tract infection, falls, and increased hospital stays. 67% of men reported fatigue.

The Prostatectomy Service started in 2011 due to increasing demand for Physiotherapy access to patients who have had radical prostatectomy surgery. Urinary incontinence and erectile dysfunction are two major complications from prostate surgery, treatment for which is mainly comprised of pelvic floor exercises and medication.

Physiotherapists with training in continence rehabilitation are best placed to provide training and re-education of the pelvic floor. The prostatectomy service provides opportunity for information, education and treatment once a week at a Joint Nurse/Physio Clinic where patients from Galway, Mayo, Roscommon and Sligo are reviewed jointly by the Prostate Survivorship CNS and Physiotherapist 6 weeks post operatively. This clinic runs once a week for 2 hours on a Wednesday afternoon.

There is a significant gap in services being provided. Between January 2019 and April 2019, of 50 prostate patients who attended the pre assessment clinic, only 21 (42%) could be reviewed by Physiotherapy due to competing demands due to the lack of a dedicated physiotherapy service for prostate patients. As a centre for excellence in Urology, a structured system is required in order to meet the evolving needs of the service.



**Rachel Macken**

*Senior Radiation Oncology Social Worker*

*Maire Lardner, Medical Social Worker, Medical Oncology*

*Patricia Luby, Medical Social Worker, Medical Oncology*



There may be times when an oncology diagnosis or illness gives rise to concerns, problems or worries for patients and their families. The oncology social worker who works with the oncology team is there to meet with the patients and/or family members to provide support, advice and counselling on these matters.

The service offers:

- Counselling for individuals and families who are coping with new diagnosis, personal and/or family issues or experiencing trauma, abuse or other crisis.
- As part of the team of professionals involved in patients care, the oncology social worker provides practical information to the patient

and family to consider all options related to him/her and their discharge.

- Provision of counselling for patients, families and carers to cope with loss, lack of independence and long term care issues.
- Advice on practical and financial matters regarding discharge.
- Knowledge of a wide range of support organisations, both locally and nationally.

There are less than 3 WTE social workers covering patients undergoing chemotherapy and radiotherapy treatment at University Hospital Galway.





**Gerardine Keenan**

*Speech & Language Therapy Manager*

*Karen Malherbe, Senior Speech and Language Therapist*



Speech and Language therapy involvement in both Ear, Nose and Throat (ENT) and Oral Maxillo Facial services (OMFS) is a well-documented requirement of a best practice service. This is the mark we strive to achieve as a Centre of Excellence here at University Hospital Galway.

In ENT, dysphonia and dysphagia are very common complaints reported in ENT Out-patient clinics, requiring further assessment and management by SLT to assist with diagnosis. In head and neck cancer patients, again difficulties with voice and swallow can exist before, during, and after surgery and during post-operative recovery. Thus the comprehensive service needs to be available for in-patient and out-patient referrals.

In OMFS, the current in-patient and fledging out-patient service tends to be more oncology based: best practice guidelines from international professional bodies recommend the input from a SLT for speech, voice and swallow before, during, and after surgery and for post-operative recovery. It is also worth noting that structural changes to the oral cavity and facial features can be a life-long challenge for the patient, with a resulting influence on SLT service provision. This will provide for a more direct review of patients after operations and consultants' plans and prognoses.

SLT will also look to re-attend the weekly Head and Neck Oncology MDM where treatment plans for patients from most corners of the west of Ireland are presented and discussed for evidence based treatment decisions, with ENT, OralMaxilloFacial Surgery, Radiation and Medical Oncology as well as Radiology and Pathology consultants.

Dysphagia is perhaps the most researched area to reflect on for service provision: it leads to nutritional deficiency, weight loss, and prolonged unnatural feeding and also has a major potential risk for aspiration. This has a significant negative impact on the patient's entire quality of life (Ihara et al., 2018). Currently, the ENT/OMFS SLT service is a specialised service established to improve communication and feeding, eating, drinking and swallowing (FEDS) outcomes for patients under the consultants relevant to this speciality. There is also a strong clinical link with Radiation Oncology SLT from whom this service was only recently separated.

**Current staffing:**

- 1.0 WTE Senior Speech and Language Therapist allocated to all ENT and OMFS inpatients and outpatients
- Due to referral numbers, this is currently reduced to head and neck oncology (ENT and OMFS) in-patients only.
- No recent additional staffing approved, despite release of 2018 ORL Model of Care through RCSI (Ireland)
- No OMFS staffing addition with doubling of consultant and theatre access
- No consistent system for patient service delivery capture of SLT out-patients/incidental OPD appointments

We look forward to building the staff compliment to build on service provision for in-patient and out-patient cancer survivors, and general ENT and OMFS improved service delivery.

### Service activity levels:

#### OMFS in-patient referrals

	2016	2017	2018	2019
All consultants	26	28	29	32

#### ENT in-patient referrals

	2016	2017	2018	2019
All consultants	48	35	19	36

### Quality Improvement Plan:

- Best practice indicates that all patients should receive an instrumental objective evaluation of swallowing prior to commencing chemoradiation. This is essential to provide a baseline of swallow function, to guide treatment of dysphagia by providing an objective picture of the patient's anatomy and physiology, to support decision making regarding the need for prophylactic tube feeding.
- All patients to receive this assessment not just those identified as very high risk of dysphagia or aspiration. To meet this requirement an additional 0.5 WTE post for a Speech and Language Therapist will be requested.
- Funding to be sought for for **specialised training** to upskill additional staff in other instrumental assessments e.g. Fiberoptic Endoscopic Evaluation of Swallowing (FEES).
- **Outreach post dedicated to SLT Radiation oncology:** Swallow functions and oral morbidities deteriorate significantly following CRT with incomplete recovery at 3 months post treatment (Ihara et al., 2018; Malandraki & Hutechson, 2018). While our current service provision has been extended until 6 weeks, this evidence indicates that this specialised speech and language therapy

service should be providing longer periods of monitoring/intervention as required. To provide this level of service provision, there is need to progress an **additional 1.0 WTE post for a Speech and Language Therapist**.

### Survivorships SLT Radiation/Oncology

- Chronic dysphagia may not present until months or even years post chemoradiotherapy (Hutcheson et al., 2012).
- Currently, SLT services within Primary Care cannot meet the need to monitor these patients. This is secondary to absence of specialised SLT training in the area of Radiation/Oncology and in some counties an absence of SLT service for patients with dysphagia.
- There is a clear need for a **dedicated SLT survivorship post** to bridge this significant gap in service provision. This dedicated post would greatly assist in surveillance, prevention and detection of chronic dysphagia, provide interventions for long term and late effects on speech, voice and swallow function and coordinate services between Rad Onc SLT specialists and primary care SLTs.
- The dedicated SLT survivorship post will be linked with the Radiation/Oncologists at UHG to provide monitoring over a 5 year period in line with the National Cancer Control Programme.



# Cancer Research and Developments

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## Cancer Research at the Lambe Institute for Translational Research & Breast Cancer Research, Developments & Achievements

Cancer is a strategic research priority at NUI Galway, engaging a wide variety of basic, translational and clinical researchers across the university campus in partnership with Saolta. The Lambe Institute, based at University Hospital Galway, is home to multiple cancer research groups, supported by the National Breast Cancer Research Institute, Science Foundation Ireland, Health Research Board, European Research Council, Irish Research Council and the Irish Cancer Society, among others. Translational and clinical research trials are integrated with the HRB-Clinical Research Facility and Cancer Trials Ireland. Researchers collaborate with frontline clinical colleagues across the spectrum of cancers with the objectives of advancing detection methods, individualising therapies and improving outcomes for patients.

### Cancer Research Themes

- Personalised Medicine – Cancer genetics and risk assessment
- Biomarker detection and prediction of response to treatment
- Tumour Immunology
- Cellular interaction in the tumour microenvironment and response to stress
- Novel Technologies for Cancer Management – imaging techniques and therapeutic methods

- Cancer Biobanking
- Cancer clinical trials
- Psychological and lifestyle interventions in cancer

### School of Medicine Summer Research Programme

Medical students take part in the Summer Research Programme at the NUI Galway School of Medicine and regional academies. The programme engages 80-90 students and ~70 academic and clinical supervisors every year. Many students undertake cancer research projects and, for the majority, it is their first exposure to understanding the vital link between research and healthcare. Summer programme “alumni” often go on to enrol in MD or PhD research degrees later in their careers.

Funding for student research has been awarded by various agencies over the years, e.g. Health Research Board, Wellcome Trust, NUI Galway School of Medicine and the National Breast Cancer Research Institute. Dr Roisin Dwyer led the Summer Research Programme from 2014-2019 and convened the intervarsity Atlantic Corridor Research Conference in 2016 and 2018. During this period, over €280,000 in competitive funding was awarded to student projects from Wellcome Trust and the Health Research Board.

## Funding

Funding Agency	Project Details	PI/Co-PI	Value
<b>NIH/SFI/HRB US Ireland Research Partnership Award</b>	The investigation of thermal therapy in the management of functioning adrenocortical tumours.	Michael Conall Dennedy, Martin O'Halloran	€3,000,000
<b>SFI Strategic Partnership Programme</b>	Precision Oncology Ireland - Consortium of five Irish universities, six Irish cancer research charities, and ten companies aiming to develop new diagnostics and therapeutics for the personalised treatment of cancer	Roisin Dwyer, Michael Kerin	€1,000,000
<b>European Regional Development Fund: Commercialisation Fund 2014-2020</b>	NEUTRO_CHECK Non-invasive quantitation of Neutropenia in cancer patients	Sanjeev Gupta, Ananya Gupta, Martin O'Halloran, Michael Kerin, Amjad Hayat	€468,939
<b>National Breast Cancer Research Institute</b>	Breast cancer research project support: <ul style="list-style-type: none"> <li>• 5-6 MD/PhD scholarships</li> <li>• 4 summer medical students</li> <li>• Cancer Biobank</li> <li>• Research staff</li> </ul>	Michael Kerin, Nicola Miller, Aoife Lowery, Roisin Dwyer, Laura Barkley	€465,000
<b>CURAM/Novo Nordisk</b>	Targeting lipid uptake and storage to deliver therapeutics via nanotechnology in the setting of adrenocortical carcinoma.	Michael Conall Dennedy	€200,000
<b>SFI-EPSRC (UK)</b>	lifETIME CDT - Joint Centre for Doctoral Training in Engineered Tissues for Discovery, Industry and Medicine	Aideen Ryan Roisin Dwyer	€125,000 €173,160
<b>Organ on a Chip Network, London</b>	Sabbatical Funding	Aideen Ryan	£25,000
<b>SFI Artificial Intelligence for Societal Good Challenge</b>	SmartAblate – A Disruptive Non-Surgical Treatment for Lung Cancer	Aoife Lowery, Martin O'Halloran	2019 Concept €20,000 2020 Seed €200,000
<b>Irish Cancer Society</b>	Research Mobility Award	Aideen Ryan	€10,000
<b>Health Research Board</b>	Summer Student Scholarship for Abdullah Alkhunaizi "Unravelling the chemo-resistant properties of tumour-associated stromal cells within the breast tumour microenvironment"	Laura Barkley	
<b>SFI: Science Foundation Ireland; EPSRC: Engineering and Physical Sciences Research Council (UK); NIH: National Institutes of Health (USA)</b>			

## Public, Patient and Educational Engagement

<b>Youth Academy NUI Galway</b>	Educational outreach for 4th-6th class primary school children. The programmes teaches how scientists and doctors work together and how scientific experiments help us understand how our bodies work.	<b>Roisin Dwyer</b>
<b>Public Seminar - Royal College of Surgeons of Ireland</b>	Presentation: "Using Blood to Unlock the Secrets of Cancer"	Roisin Dwyer
<b>Irish Cancer Society meeting, UCD "Precision Oncology: From Discovery to Implementation"</b>	Presentation: "Harnessing Intercellular Communication for Breast Cancer Therapy"	Roisin Dwyer
<b>St Annin's National School Outreach</b>	Workshop: Introducing primary school children to DNA codes and inheritance	Laura Barkley
<b>Centenary Celebrations at Ard Scoil Mhuire</b>	Panellist: Challenges for Women in Science, engaging students to choose science careers.	Aideen Ryan

<b>Young Investigator Award: Nitric Oxide Society</b>	VI International Workshop on Nitric Oxide and Cancer, New York. Prize and free registration for the 11th International Conference on the Biology, Chemistry and Therapeutic Application of Nitric Oxide 2020 Chicago, USA	Dibyangana Bhattacharyya, PhD Student (Supervisor: Sharon Glynn)
<b>Travel Scholarship</b>	25th West Coast Retrovirology Conference, California, USA	Dibyangana Bhattacharyya, PhD Student (Supervisor: Sharon Glynn)
<b>Best Poster Award</b>	25th West Coast Retrovirology Conference, California, USA	Dibyangana Bhattacharyya, PhD Student (Supervisor: Sharon Glynn)

Higher Degree	Thesis Title	Student/Supervisor
<b>PhD Thesis</b>	Urothelial Carcinoma: Molecular Profiling & Potential Application in Clinical Practice	Teresa McHale (Supervisor: Roisin Dwyer)
<b>PhD Thesis</b>	Examining the role of a novel stromal cell protein CD362/Syndecan-2 in the breast tumour microenvironment	Paul Loftus (Supervisors: Laura Barkley, Tim O'Brien) <b>(photo: 4)</b>
<b>PhD Thesis</b>	Application of NGS in the identification of clinically actionable mutations in cancer	Una McVeigh (Supervisors: Derek Morris, Nicola Miller, and Michael Kerin)
<b>PhD Thesis</b>	Factors influencing diagnosis and outcome in HER2 receptor positive breast cancer	Andrew McGuire (Supervisors: James Brown, Michael Kerin)
<b>MD Thesis</b>	Metastatic Breast Cancer: Patterns of metastasis and novel biomarkers	Peter McAnena (Supervisors: James Brown, Michael Kerin) <b>(photo: 5)</b>

#### New collaborations, partnerships or trials

<b>Michael Conall Dennedy</b>	<ul style="list-style-type: none"> <li>• Prof Irina Bancos, Department of Endocrinology, Mayo Clinic Rochester Minnesota.</li> <li>• Prof Mark Gurnell and Dr Eric Schoenmakers, Metabolic Research Centre, University of Cambridge</li> <li>• Dr Constanze Hantel and Prof Felix Beuschlein, University of Zurich</li> <li>• Prof Wiebke Arlt, University of Birmingham</li> <li>• Prof Punit Prakash, Department of Experimental Bioengineering, Kansas State University.</li> <li>• Prof Marie Christine Zennaro, INSERM Paris.</li> </ul>
<b>Roisin Dwyer</b>	<ul style="list-style-type: none"> <li>• Celtic Advanced Life Science Innovation Network (CALIN). Member of NUI Galway academic team lead by Prof Frank Barry to facilitate university-industry collaboration</li> <li>• Omnispirant Therapeutics - Developing Regenerative Gene Therapies with the Potential to Transform Respiratory Medicine (Horizon 2020, EIT and CALIN supported)</li> </ul>
<b>Laura Barkley</b>	Dr Pilib Ó Broin and Barry Digby, School of Mathematics, Statistics and Applied Mathematics and NUI Galway
<b>Aideen Ryan</b>	<ul style="list-style-type: none"> <li>• Prof Fran Balkwill, Barts Cancer Institute QMUL</li> <li>• Dr Emma Kerr, Queens University Belfast</li> <li>• Dr Oliver Pearce, Barts Cancer Institute QMUL</li> <li>• Dr Daniela Loessner, Monash University, Australia</li> </ul>
<b>Emer Bourke Michael Kerin</b>	Professor Sharon Stack and Dr Andy Bullock, University of Notre Dame Harper Cancer Research Institute "Fighting Irish – Fighting Cancer Research Partnership" <b>(photo: 6)</b>
<b>Roisin Dwyer Michael Kerin</b>	Precision Oncology Ireland consortium - 5 Universities, 11 industries, 6 charities <b>(photo: 7)</b>
<b>Michael Kerin Nicola Miller</b>	Cathal Seoighe, SFI funded Centre for Research Training Genomics Data Science at NUI Galway
<b>Sharon Glynn</b>	<ul style="list-style-type: none"> <li>• Dr Elizabeth Ryan, Biological Sciences, University of Limerick (UL)</li> <li>• Prof Stephen T. Wong, Biomedical Engineering, Houston Methodist Weill Cornell Medical College</li> <li>• Dr Adele McCormick, Life Sciences, University of Westminster</li> </ul>





**“Irish Cancer Society: Research Paper of the Year”**  
Aideen Ryan



**“Irish Association for Cancer Research:  
AOIFA Mobility Award”**  
Clodagh O'Neill, PhD Student (Supervisor: Roisin Dwyer)



**PhD Thesis**  
Paul Loftus  
Supervisors: Laura Barkley, Tim O'Brien



**MD Thesis**  
Peter McAnena pictured with his father  
Prof. Oliver McAnena



**“National Breast Cancer Research  
Institute Research Showcase”**  
Roisin Dwyer, Prof. Michael Kerin,  
Prof. Aoife Lowery, Laura Barkley,



**“Fighting Irish – Fighting Cancer Research Partnership”**

Professor Sharon Stack and Dr Andy Bullock, University of Notre Dame Harper Cancer Research Institute



**“Precision Oncology Ireland consortium - 5 Universities, 11 industries, 6 charities”**



# Cancer Charities

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**Inis Aoibhinn Residence**  
University Hospital Galway

**Cancer Care West Support Centre**  
72 Seamus Quirke Road  
[www.cancercarewest.ie](http://www.cancercarewest.ie)



*Cancer Care West is a registered charity, dedicated to supporting cancer patients and their families in the west and northwest of Ireland. Cancer Care West's vision is that no one will go through cancer alone.*

Cancer Care West is a West of Ireland charity providing professional community-based practical and emotional support services, free of charge, to anyone affected by cancer and to their families. Our services fall into two categories: support services covering a range of offerings in our support centres in Galway and Letterkenny and accommodation services for patients on radiotherapy offered from our lodge in University Hospital Galway. Outside of the services we also fund a number of specific, patient focused research projects as well as co-funding projects which advance cancer patient treatments.

In 2019 demand increased for our services with almost **3,500** people visiting our premises or otherwise

availing of our offerings. This represents a significant level of service, provided by a small number of employees and contractors with specialist expertise in cancer support.

Cancer Care West is strongly committed to ensuring that the best treatments and services are available to patients in the region. To support this commitment the charity donated €350,000 in 2019 to the cost of the procurement of a new DaVinci surgical robotic system for University Hospital Galway. During 2019 the DaVinci robot operated on over **200** cancer patients at UHG greatly enhancing their experience and reducing the length of stay for inpatients at the hospital

2019 Activity	
Individuals availed of our service	3477
Meals served at Inis Aoibhinn	19176
Bed nights provided to cancer patients & their families	9588
Visits to cancer Support Centres	10710

One of the highlights of 2019 was the launch of our Mayo Bus Service transporting radiotherapy patients to and from Mayo and the Inis Aoibhinn residence in UHG. To fund the running costs of the service the charity launched the highly successful Mayo Bus Appeal. Over **350** cancer patients and their families have travelled on the new Mayo Cancer Care West bus since it commenced service.



Cancer Care West Mayo bus passengers Enda Gallagher and PJ Kenny

Cancer Care West operates two cancer support centres, in Galway and Donegal. Since Galway opened in 2009 followed by Letterkenny in 2016 the centres have grown to be among the leading support centres in Ireland offering the most comprehensive service across all the key disciplines. In 2019, **2,200** patients interacted over **10,700** times with the centres, a significant increase over the previous year and a vivid reminder of the need for our services.



Committee of Ball of Balls who raised over €7,000 for Cancer Care West

### Highlights in 2019 include:

- The launch of an Anxiety Management Programme for cancer patients
- The rollout of the Cancer Thrive and Survive programme in conjunction with the National Cancer Control Programme (NCCP).
- The extension of rehabilitation physiotherapy services to include a pre-surgery clinic for oesophageal cancer patients run in conjunction with UHG and a colorectal intervention group post treatment also run in conjunction with UHG
- A new fatigue workshop to educate patients on the physiological and psychological impact of fatigue and to offer practical suggestions about coping strategies.
- The instigation of Focus Groups around the survivorship programme to ascertain the effectiveness and outcomes of this intervention for the purposes of service development.
- The further development of our children's service, now including support to schools where children are coping with a cancer diagnosis and the establishment of significant links with the Paediatric Psycho-Oncology services at Crumlin Children's Hospital who now refer children diagnosed with cancer who live in the west of Ireland to Cancer Care West.

Specifically in Donegal, we launched a bi-monthly Colo-Rectal Support Group run in partnership with LUH and a new brain tumour support group

### Activity Support Centre 2019

	Number of Client Visits	Number of Clients	Total Client usage incl. talks, events, etc	Drop in Visits
Galway	9027	1471	9027	4121
Donegal	1683	435	909	774
Total	10710	1906	9936	4895



### Cancer Care West Residential Services – Inis Aoibhinn

Our accommodation services support patients and their families by providing residential and short term accommodation, at no cost, for patients who are undergoing radiotherapy treatment at UHG.

Inis Aoibhinn is our residential lodge located in the grounds of UHG. At Inis Aoibhinn patients can stay with a family member or friend for the duration of their

treatment where they have complete independence as well as the comfort of 24 hour nursing care.

Referrals to Inis Aoibhinn are made through the Radiotherapy department at University Hospital Galway. The residence operated at full capacity in 2019, providing accommodation and meals for 322 cancer patients, with a waiting list in operation at certain times of the year.

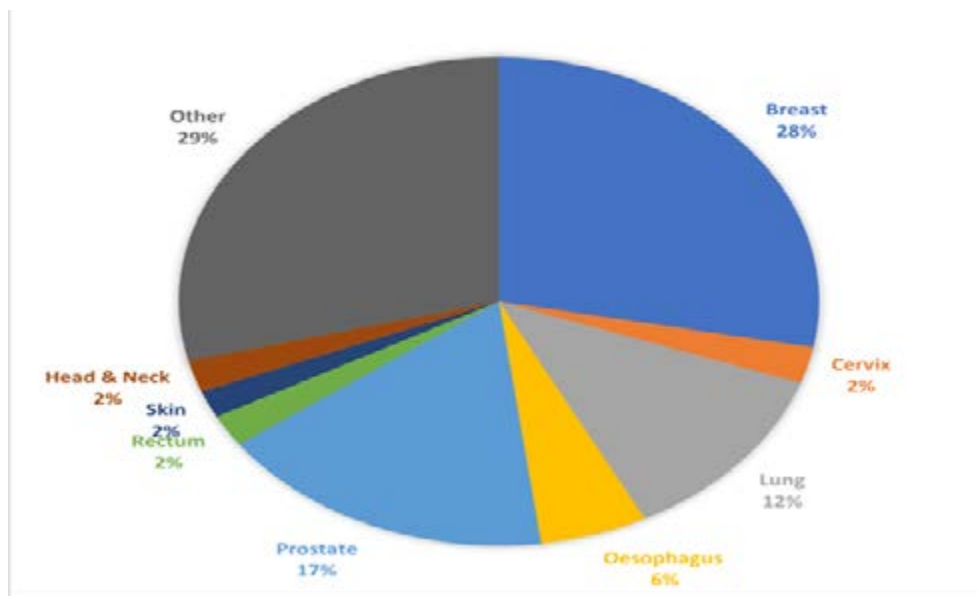
## Family Support Services

Families can also avail of long-term accommodation close to University Hospital Galway when a family member is receiving cancer treatment in hospital. Eligible families who don't live in Galway but want to stay close to their loved one will be found local accommodation at no cost to them. In 2019, 50 families were supported with a total of 200 nights' accommodation in apartment or bed and breakfast accommodation.

### Breakdown of Inis Aoibhinn residents by County

County	Number
Mayo	121
Donegal	45
Galway	19
Sligo	59
Leitrim	24
Roscommon	40
Other	24

### Breakdown of Inis Aoibhinn residents by diagnosis.







The National Breast Cancer Research Institute is a national charity that funds a comprehensive research programme at the National University of Ireland, Galway lead by Professor Michael Kerin.

Launched in 1991, the key objective of the charity is to fund relevant, ethical research into the biology of breast cancer. This research investigates the causes of this disease and helps to improve treatments and outcomes for patients.

Breast Cancer is the highest cause of death in middle aged women in Ireland. Research is at the core of finding out more about this disease. The Breast Cancer Research programme based at the Lambe Institute for Translational Research, NUI Galway, is patient-focused, involving clinicians and scientists and contributes to new knowledge, treatments and better outcomes. Translational Research, i.e. bringing lab findings to the clinical setting, is a long-term commitment and expensive.

Our research team collaborate with genetic scientists, clinical trial lists, medical technology engineers and Big Data engineers at universities and hospitals here and abroad. Our research is not only impacting breast cancer here in Ireland, but across the globe.

Our researchers are currently working on major national and international projects to improve the

diagnosis and treatment of breast cancer. This research spans the continuum from bench to bedside and includes exciting developments addressing the genes that are responsible for breast cancer, newer molecular treatments, role of stem cells in breast reconstruction and innovative new diagnostic devices.

Cancer remains a great global burden and research is at the centre of improvements in the outcome for patients. Our cancer research programme is currently working on the biomarkers of response to treatment, newer therapies within the personalised medicine arena and continuity to major international consortia on cancer genetics and interacts with medical devices development and runs clinical trials on newer treatments.

The charity relies on voluntary contributions and does not receive direct funding from the government. We raise funds for research from charity events, community-based fundraising, and support from individuals and companies.

2019 was another busy year for the charity with great support coming from 'Mayo Pink Ribbon', 'Play in Pink' Golf, Pink Ribbon Tour and other volunteer led groups nationally. Galway Racecourse hosted their 'Race in Pink' day in 2019 and together with the 'Win a BMW' car raffle that took place on the day raised a staggering €150K for the charity.



*Sinéad-Cassidy-Philip-Duffy-Prof.-Michael-Kerin-Michael-Moloney-and-Aisling-OShea.-  
Photographer-Julia Monard.-1200x540*



University Hospital Galway  
Letterkenny University Hospital



## Activity Report for 2019

The Irish Cancer Society Daffodil Centres are hospital based local cancer information and support centres. In these centres enquirers will find cancer nurses and trained volunteers on hand to answer cancer related questions, to provide a confidential listening ear and to provide information on everything from local support groups to help for the travel or financial problems cancer can create.

The Daffodil Centres are open to the public and all are welcome whether they have a cancer diagnosis, are worried about cancer, are visiting on behalf of a friend or relative or are a healthcare professional looking for the information and support for patients/clients. An appointment or referral is not necessary and the Cancer Nurse will take the time to listen and provide tailored information, advice and support.

The Cancer Nurses provide free and easy to understand information on Cancer types.

- Tests and investigations used to diagnose cancer.

- Cancer prevention and early detection.
- Screening and early detection of cancer.
- Cancer treatments and side effects.
- Local cancer support services.
- End of life services.
- Life after cancer treatment.
- Financial and practical supports.

The Daffodil Centres in University Hospital Galway and Letterkenny University Hospital are staffed by 3 qualified Irish Cancer Society Nurses and 2 teams of specially trained volunteers.

Currently there are 13 Daffodil Centres in Ireland and 51,695 people had contact with the Daffodil Centres around Ireland in 2019. The Centres in Galway and Letterkenny have strong working relationships with their hospitals which builds a successful partnership between the Irish Cancer Society and the Saolta Group.

## Daffodil Centres Activity

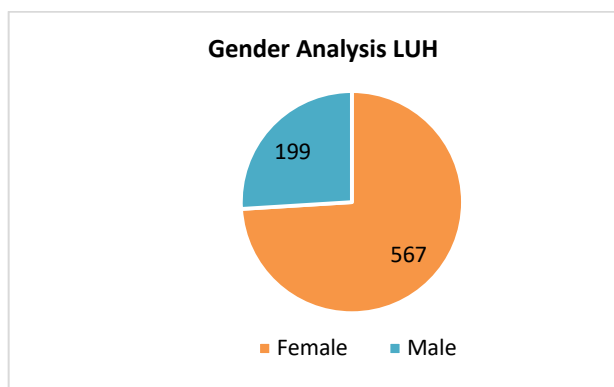
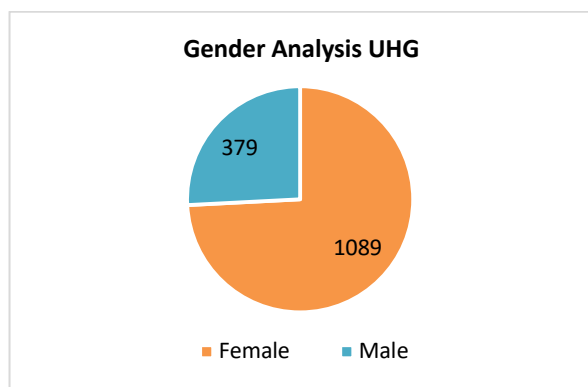
The total number of contacts to the Daffodil Centres in UHG and LUH during 2019 was 5,602 and the contacts included:

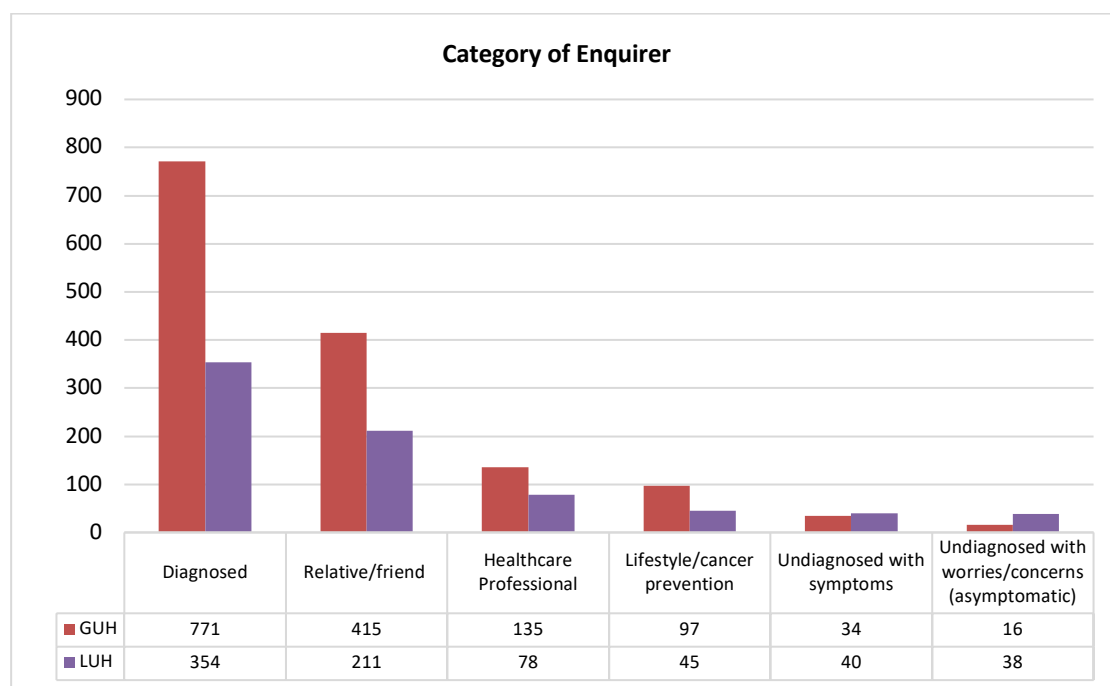
- Enquirers
- People who attended chemotherapy and dietetics education
- Browsers
- Awareness stand attendees

**Enquirers** are those who visit the centres and spend 5 minutes or more with the nurse or volunteer. This time is spent addressing concerns they may have and answering questions about cancer and related supports.

- 43% were first time enquirers
- 57% had visited before
- 15% of all enquirers worked in the hospital

## Breakdown of Activity





### Dealing with Enquiries

The nurse and volunteers provide information and support that is tailored to an enquirers needs whether that entails - talking through a question, giving an information leaflet, finding information for the enquirer online and directing them to reliable cancer information websites.

The top 5 ways enquiries were dealt with:

- Listening/emotional support
- Information booklet/leaflet

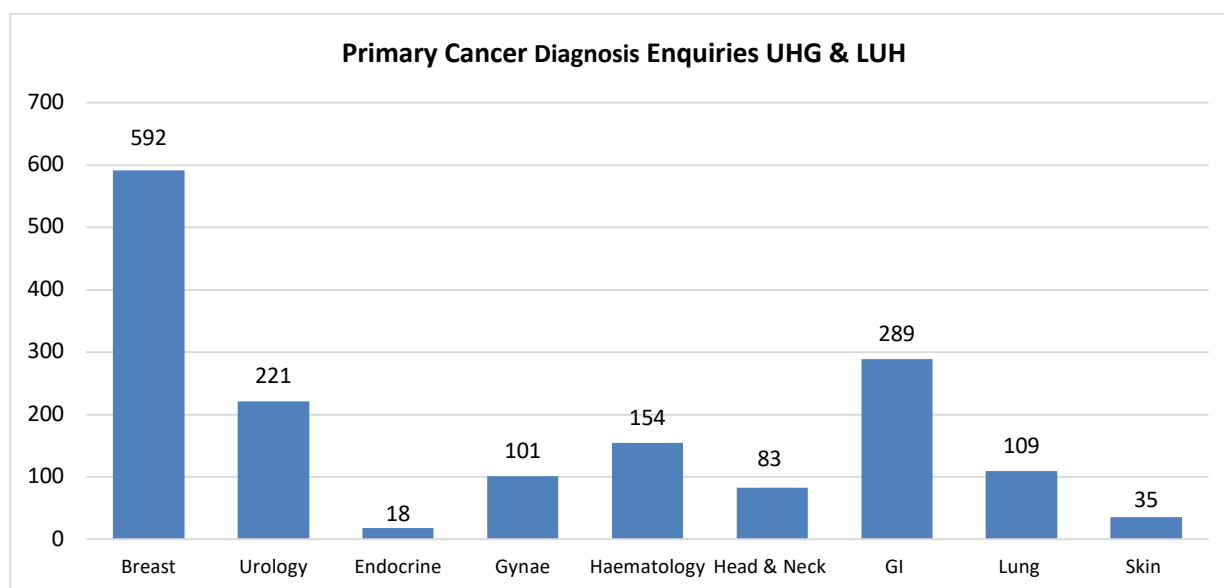
- Referred to services within the hospital
- Referred to services within community
- Referred to a cancer support centre/group

### Advocacy

The work of the Daffodil Centre does not just revolve around information about cancer. It also brings up many other parts of people's lives that are affected by cancer. Cancer patients are affected financially, practically and emotionally. We have captured some of the issues that people encounter while having treatment for cancer.

### Advocacy Queriers

Financial	UHG	LUH	Health	UHG	LUH
Transport	203	77	Unmet Psychological needs	40	94
Parking Charges	99	20	Treatment side-effects (physical)	29	43
Cost of side-effects caused by treatment	82	9	Aids and Appliances for side-effects	6	13
Childcare Costs	2	8	Access to Community supports	16	10
Getting a Medical Card	29	8	Delay for Diagnostic Cancer Tests	8	9
Accessing Social Welfare Entitlements	40	6	Delay in Surgery or Treatment	20	7
Heating Costs	1	4	Quality of Care	2	5
Government Levied Health Charges	1	3	Delay in access to Out Patient Apt	9	4
Employment Issues	7	3	Access to Clinical Trials	1	-
Over the Counter Medication Costs	3	3			
Community Welfare Officer	6	.			
GP Visits/Cost	1	-			
<b>Total Financial</b>	<b>474</b>	<b>141</b>	<b>Total Health</b>	<b>130</b>	<b>185</b>



### Chemotherapy Education Programme - Understanding Chemotherapy

A recognised and established education programme provided by Cancer Nurses in many Daffodil Centres throughout the country, this group educational session is for patients and families about to start chemotherapy. The session focuses on providing the right tools and knowledge to cope with chemotherapy and its side effects. The session is a mix of didactic and visual educational elements (DVD) incorporating written information specific to each hospital. The Cancer Nurse from the Daffodil Centre facilitates the group education session incorporating short oral presentations and practical demonstrations.

#### In UHG

- The session is also attended by Oncology Dietician Ruth Kilcawley, who provides patients with information about being proactive in relation to diet and cancer treatment.
- In 2019 there were 66 Chemotherapy Education sessions with an attendance of 234 patients and family members.
- There is continuous evaluation of the programme amongst attendees and for 2019 100% of respondents rated their overall experience of attending a session as very good or excellent.

#### In LUH

- An alternative version of the Chemotherapy Education Programme was introduced and commenced in Letterkenny University

Hospital in 2018. It is currently available to inpatients and their carers on the Haematology/Oncology ward.

- In 2019 there were 12 sessions attended by 20 people.
- There is continuous evaluation of the programme amongst attendees and for 2019 100% of respondents rated their overall experience of attending a session as excellent.

### First Steps BMI Project

The First steps BMI Project commenced in 2018 and is jointly facilitated by the Daffodil Centre Cancer Nurse and the Letterkenny University Hospital Oncology Nurses. The project involves the promotion of healthy lifestyles to cancer patients in their post treatment phase. The Daffodil Centre Cancer Nurse provides ongoing support with each individual through regular weight and waist measurements and follow up phone calls.

The results for a total of 17 patients (three male and 14 female) who attended the centre showed a combined total weight loss of 20.5kgs and a combined waist circumference decrease of 21cms. All participants who visited the nurse more than twice lost weight and reduced their waist circumference.

This programme was nominated for the Irish Healthcare Awards and a poster outlining the aims, results and methods of the programme was developed and displayed at the UKON's Cancer Care: Staying Safe Conference in Telford and at the Letterkenny University Hospital Research Symposium.



# Appendix

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## Cancer Research Publications

### Palliative Medicine

Disturbing and distressing: a mixed methods study on the psychological impact of end of life care on junior doctors H

Linane, F Connolly, L McVicker, S Beatty, O Mongan, E Mannion, D Waldron. Irish Journal of Medical Science (1971-) 188 (2), 633-639 2019

Mycobacterium goodii pneumonia: An unusual presentation of nontuberculous mycobacterial infection requiring a novel multidisciplinary approach to management R Waldron, D Waldron, E McMahon, L

Reilly, UN Riain, C Fleming. Respiratory medicine case reports 26, 307-309 2019

An Intervention Using Quality of Life and Symptom Information as a Clinical Tool in Patients with Advanced Cancer. E Mannion, MK Molony, L Reilly, D Waldron. International Journal of Innovative Research in Medical Science (IJIRMS) 4 (08) 2019

Depression or Adjustment Disorder? A pilot study to assess stress induced low mood in a high-risk population. E McMahon, C Salmon, L Reilly, D Waldron, AM Doherty IRISH JOURNAL OF MEDICAL SCIENCE 188, S27-S28 2019

Waldron R, Waldron D, McMahon E, Reilly L, Riain UN, Fleming C, O'Regan A. Mycobacterium goodii pneumonia: An unusual presentation of nontuberculous mycobacterial infection requiring a novel multidisciplinary approach to management. Respiratory medicine case reports. 2019 Jan 1;26:307-9.

Linane H, Connolly F, McVicker L, Beatty S, Mongan O, Mannion E, Waldron D, Byrne D. Disturbing and distressing: a mixed methods study on the psychological impact of end of life care on junior doctors. Irish Journal of Medical Science (1971-). 2019 May;188(2):633-9.

McMahon E, Salmon C, Reilly L, Waldron D, Doherty AM. Depression or Adjustment Disorder? A pilot study to assess stress induced low mood in a high-risk population. INIRISH JOURNAL OF MEDICAL SCIENCE 2019 Jul 1 (Vol. 188, pp. S27-S28).

McInerney V, Mannion E, Molony MK, Reilly L, Waldron D. An Intervention Using Quality of Life and Symptom Information as a Clinical Tool in Patients with Advanced Cancer. International Journal of Innovative Research in Medical Science (IJIRMS). 2019 Aug;4(08).

McInerney V, Mannion E, Moses A, Molony K, Waldron D. A Guide to Selecting a Measurement Tool for Quality of Life Assessment. population.;16:18-20. Med Clin Res. (2019) May 7;4(5):1-6.

Kelly L, O'Shea N, Azhar M, Gaffney L, Beatty S, Brennock J, Mannion E, Waldron D. Patients with Covid-19 at the End of Life. Age. 2021;79(69):86.

D Waldron, A Stenson, N O Shea, D Lappin, M Bell. Phone Photograph confirms source of pain in a semiconscious dying patient: 'A picture paints a thousand words.' (in print Int J of Clinical and Medical images)

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Mannion, E., Gilmartin, J., Donnellan, P., Keane, M., & Waldron, D. (2014). Effect of chemotherapy on quality of life in patients with non-small cell lung cancer. *Supportive Care in Cancer*, 22(5), 1417-1428. doi:10.1007/s00520-014-2148-9,1

O'Sullivan GJ, Waldron D, Mannion E, Keane M, Donnellan PP. Thrombolysis and iliofemoral vein stent placement in cancer patients with lower extremity swelling attributed to lymphedema. Journal of Vascular and Interventional Radiology. 2015 Jan 1;26(1):39-45.

Colleran M, Walsh D, Mannion E, Waldron D. Advanced cancer and sexuality-the hidden dilemma. Psycho-oncology. 2015 Apr;24.

Gorman KM, Cary H, Gaffney L, Forman E, Waldron D, Al-Delami F, Lynch BJ, King MD, Allen NM. Status dystonicus due to missense variant in ARX: Diagnosis and management. European Journal of Paediatric Neurology. 2018 Sep 1;22(5):862-5.

Murtagh C, Mannion E, Flaherty G, Waldron D. End-of-life enhancement: a novel introduction of medical students to palliative medicine. Journal of palliative medicine. 2012 Sep 1;15(9):965-6.

Waldron D, Grummell M, Daniels F, Mannion E. A retrospective review to test the hypothesis that "opioid toxicity", developing in an otherwise stable patient heralds imminent sepsis. Palliative Medicine. 2008 Jun;22.

Rees, J., Clarke, M. G., Waldron, D., O'Boyle, C., Ewings, P., & MacDonagh, R. P. (2005). The measurement of response shift in patients with advanced prostate cancer and their partners. *Health and Quality of Life Outcomes*, 3(1), 21. doi:10.1186/1477-7525-3-21

Rees J, Waldron D, O'Boyle C, Ewings P, MacDonagh R. Prospective vs retrospective assessment of lower urinary tract symptoms in patients with advanced prostate cancer: the effect of 'response shift'. BJU international. 2003 Nov;92(7):703-6

Rees, J., Waldron, D., Amp, Apos, Boyle, C., & Macdonagh, R. (2002). Response shift in individualized quality of life in patients with advanced prostate cancer. *Clinical Therapeutics*, 24, 33-34. doi:10.1016/S0149-2918(02)85111-1

McCarthy D, Waldron D, Moriarty M. 33 Does pilocarpine treatment improve subjective quality of life and xerostomia in head and neck cancer patients following radical radiotherapy?. *Radiotherapy and Oncology*. 2000(57):S31-2.

Hayes A, Waldron D, "An Evaluation of the effects of Touch Therapy on patient's Perceptions of their Quality of Life in a Palliative Care setting." 2000, Report to Dept for Health, Ireland

Waldron D, O'Boyle CA. in, Joyce, Charles Richard Boddington, Hannah M. McGee, and Ciaran A. O'Boyle, eds. *Individual quality of life: Approaches to conceptualisation and assessment*. Taylor & Francis, 1999. (pp 197-212)

O'Boyle, C. A., & Waldron, D. (1997). Quality of life issues in palliative medicine. *Journal of Neurology*, 244(4), S18-S25. doi:10.1007/PL0000772

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Dowling, M., Hunter, A., Biesty, L., Meskell, P., Conway, A., O'Boyle, G., Morrissey, E. & Houghton, C. (2019) Driving and disabling factors of noncurative oral chemotherapy adherence: A qualitative evidence synthesis. *Oncology Nursing Forum*, 46(1), 16-28.

Duggan, C., Murphy, L., Costello, V., Leary, E.O., Yousif, A.D., Blazkova, S. & Dowling, M. (2019) Oral loratadine in the management of G-CSF-induced bone pain: A pilot study. *British Journal of Nursing*, 28(4), S4-S11.

Fahy, P., Smalle, M., Houghton C., & Dowling, M. (2019) Health care professionals' views and experiences of palliative care for adult patients with a haematology malignancy: a qualitative evidence synthesis. Haematology Association of Ireland Annual Meeting 2019. (Study funded by Irish Cancer Society).

## Radiotherapy: Medical Physics

**Commissioning process for high dose rate prostate brachytherapy:**S. Larkin, S. Leonard, A. Zuchora **European Journal of Medical Physics**, Volume 67, November 2019, Page 198  
<https://doi.org/10.1016/j.ejmp.2019.09.189>

Superficial X-ray therapy beam measurements using a liquid-filled chamber array. **K. Davey, M. Moore, S. Cleary.** **European Journal of Medical Physics**, Volume 67, November 2019, Page 197  
<https://doi.org/10.1016/j.ejmp.2019.09.184>

Off-axis dose distribution with stand-in and stand-off configurations for superficial radiotherapy treatments **Keith Davey, Margaret Moore, Sinéad Cleary, Christoph Kleefeld, Mark J. Foley** **Journal of Applied Clinical Medical Physics** **Volume 20, Issue 10 p. 142-151 (12 October 2019)** <https://doi.org/10.1002/acm2.12730>

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