



OLLSCOIL NA GAILLIMHE
UNIVERSITY OF GALWAY

CANCER CENTRE ANNUAL REPORT 2020





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 Cancer MCAN

Chair, Cancer Strategy Group

Saolta University Health Care Group



The Saolta Cancer MCAN was established in January 2020 shortly before the onset of the COVID-19 pandemic that presented major challenges. However, despite the enormous impact of the pandemic, the Saolta Cancer MCAN was fully committed to supporting the cancer programme across the region in an adaptive and responsive manner in what was an unprecedented and rapidly changing landscape.

2020 was an extremely challenging year for the health services in general, but particularly impacted on the cancer programme for our region. A report led by the RCPI (Royal College of Physicians of Ireland) in December 2020, *“Deploying Data-Driven Intelligence to measure the impact of COVID-19 on cancer care and cancer patients”* highlighted the dramatic reduction in activity from March to June 2020. At this point screening services were paused and people who had cancer symptoms were afraid to present due to concerns of contracting the virus.

There was some increased presentations, diagnosis and treatment from June 2020, but overall cancer service activity never reached 2019 levels. The full impact of delayed presentations and diagnosis caused by COVID-19 on our patient outcomes is not yet known, but what we do know is that securing a timely cancer diagnosis and receiving optimal treatment as early as possible is essential to reducing morbidity and mortality.

COVID-19 has highlighted even more the urgent need for a dedicated, European accredited (OECD), Cancer Network across our region.

This will require a dedicated cancer hospital at University Hospital Galway with appropriate cancer infrastructure at the model 3 hospitals across our region. This is a necessity in order to deliver excellent, patient-centred care required to address the increasing burden of cancer in our region and enhance outcomes for our patients.

This abridged 2020 Cancer Centre Annual Report will reflect the disruption of COVID-19 on cancer services in the region, but will also more importantly reflect the extraordinary commitment of management and staff throughout our hospitals who have gone beyond the call of duty during this very difficult year.

Thank you.

Professor Michael J. Kerin

Mr Tony Canavan
Chief Executive Officer
Saolta University Health Care Group



The publication of the Annual Report 2020 for our Cancer Centre is indeed very welcome. Despite the difficulties associated with COVID-19, this report categorises the immense work of Saolta Staff across each of our hospitals and provides us with insights into the delivery of cancer care during that very difficult year.

The Pandemic made 2020 a very challenging year for all of us and resulted in the restriction of hospital services, including some cancer services for a period of time. However, despite the challenges, cancer care was maintained throughout 2020 and the activity outlined in this report is a reflection of the hard work and dedication of our speciality teams in maintaining these essential services.

In January 2020, the Cancer MCAN was launched and a team was put in place to support its work. The MCAN, Managed Clinical and Academic Network, brings all clinical services relating to the provision of cancer care under one Group-wide management structure. Prof Michael Kerin was appointed as the Director and I would like to thank Prof Kerin for his continued leadership, and for his dedication in advocating for cancer services for the West and North West of Ireland.

Construction of the new Radiation Oncology Unit at University Hospital Galway continued throughout 2020. This unit, which is part of the National Programme for Radiation Oncology, is a very important development in cancer services for patients in the West and North West and is now near completion. It will become operational in early 2023.

Finally, I would like to thank all involved in the preparation of this report.

Dr Pat Nash
Chief Clinical Director
Saolta University Health Care Group



From an integrated governance perspective, the most significant development for Cancer Services within the Saolta University Healthcare Group in 2020 was the establishment of the Managed Clinical and Academic Network (MCAN).

In January 2020, Professor Michael Kerin took up the role as Director of the Saolta Cancer MCAN supported by Olive Gallagher as Director of Nursing and Geraldine Cooley as General Manager. This new governance structure has the potential to strengthen clinical governance across the region and further develop academic linkages between the Saolta University Health Care Group and the National University of Ireland, Galway.

The Saolta Cancer Programme has the foundation of a world class cancer network, quality assured through an extensive multidisciplinary programme hosted from the cancer centre at University Hospital Galway, with personalised treatment plans for all cancer patients agreed. Complex Care is provided at University Hospital Galway complemented by an extensive programme of cancer care across the region through the hub and spoke model.

In 2020, the delivery of the cancer programme, like all other clinical programmes, was severely disrupted by the COVID-19 pandemic and was reduced in many instances to time sensitive urgent cancer care. In 2021, we will be putting a COVID recovery plan in place to address the impacts on waiting lists.

On my own behalf and on behalf of the Saolta Group Management Team, I wish to thank most sincerely all our staff across the Saolta Group who worked tirelessly to deliver safe care to our population during what can only be described as an unprecedented time.

Mr Gerry McManus

*Chairperson of the Board of Directors
Saolta University Health Care Group*



On behalf of the Board of Directors, I am very pleased to welcome the publication of the 2020 Saolta Group Cancer Centre Annual Report. 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 during the intensely difficult COVID -19 period.

Professor Ciarán Ó hÓgartaigh

*President
University of Galway*



As President of the University of 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.

2020 was a challenging year for all - as a University we give particular credit to our clinical colleagues and students in the College of Medicine, Nursing and Health Sciences as they worked at the front line of the pandemic providing care to the people of our region, supporting their teams and graduating their students.

We are proud of our clinical and scientific researchers who remained research active and productive and were the first staff and students back on campus working in restricted environments throughout 2020.

I welcome the establishment of the Cancer Managed Clinical Academic Network. The next few years offer exciting opportunities for our University and for this region. Through the research and academic activities of our colleagues and the education of healthcare providers of the future, UNIVERSITY OF GALWAY Galway makes a meaningful contribution to cancer care for our region, meeting our flagship goal of improving health and wellbeing.

Dr Kevin Clarkson
*Group Clinical Director
Perioperative*



In conjunction with the Chief Clinical Directors Office and in line with the Saolta Integrated Governance Strategy we have continued to progress with the initial phase of the Theatre Optimisation Project. Although this was significantly delayed by the pandemic, the overarching strategic aim of this group project is to review the current delivery of surgical services across the Groups southern network i.e. GUH, PUH, MUH and RUH.

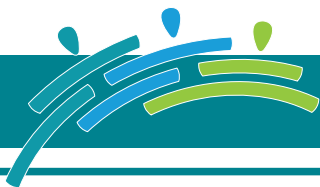
Virtually all disciplines provide both interventional or outpatient care in both model 3 and 4 hospitals. This has allowed a significant proportion of UHG ambulatory care to be delivered in model 3 locations albeit up to 90 minutes commute for staff. This has assisted the group in delivery of complex cancer care in UHG.

The onset of the global COVID-19 pandemic put significant additional pressures on the health system. The Perioperative Directorate adapted rapidly to provide safe pathways for patients to continue to access the system. Much of this process has now been rationalised and pathways have reverted to a more normal pattern. Post Anaesthesia Care Units exist in two group hospitals but are more developed in UHG. PACU in UHG admits in the region of 700 patients annually for elective surgery - mostly cancer related. Nonetheless, access is significantly restricted by the unpredictability of scheduled hospital admissions and deficits in theatre nursing resulting in ongoing scheduled closures of up to 30% of theatre capacity. The difficulty in recruiting theatre nursing personnel is probably by the far the greatest challenge to delivery of surgical services nationwide. All hospitals have processes to address their particular needs but the overriding emphasis is to facilitate time sensitive cases – largely cancer related.

We have worked closely with the Cancer MCAN specifically around increased access and infrastructural ambitions and it is our key objective to continue to endeavour to improve access and to provide an integrated quality service to our patients.



Clinical Care Services



Mr Ray McLaughlin

Consultant Breast Surgeon

Lead Clinician, Symptomatic Breast Unit



Patients are seen at Triple Assessment Clinics held at the Symptomatic Breast Centre at University Hospital Galway and 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 joint multidisciplinary meeting.

Despite the onset of the COVID-19 pandemic in March 2020, 10,889 patients were seen at the Symptomatic Breast Service across the Saolta University Health Care Group and 465 new breast cancers were diagnosed. Additionally 85 women were diagnosed with breast cancer by the BreastCheck Programme. This makes a total of 550 cancers diagnosed across the region in 2020. From March 2020 to September 2020 Breastcheck screening was paused and a number of Breastcheck staff supported the Symptomatic service throughout this period.

The pandemic necessitated new ways of working with patient appointments facilitated by the establishment of virtual clinics. Social distancing brought its challenges with clinic size reductions.

There were 2,110 patient discussions at the Symptomatic Breast virtual multidisciplinary meetings in 2020 despite the pandemic. The MDM ensures patients are diagnosed, staged and treated in a timely manner and have a better experience and improved outcomes overall. The ongoing contribution from radiology, pathology, radiation oncology, medical oncology, surgery and nursing ensures a successful multidisciplinary approach and better outcomes for patients.

In Letterkenny, the breast service continued to see new patients throughout 2020 whilst many review appointments were deferred in line with COVID-19 social distancing guidelines.

The major impact of COVID-19 like many other programmes has resulted in waiting lists for patients who need to be seen at triple assessment breast clinics.

Symptomatic Breast Outpatient Clinic Attendance 2020

Outpatient Clinic Statistics	UHG	LUH	Total
New patients	4703	1998	6701
Review patients	3261	927	4188
Total No. of patients seen	7964	2925	10889

Of the 3261 review patients at UHG, approximately 378 patients were followed up virtually by phone.

Symptomatic Breast Service Cancer diagnoses 2020

Performance Parameter	UHG	LUH	Total
No. of new patients diagnosed with cancer	362	103	465

Symptomatic Breast Cancer Surgical Interventions (Data Source: SBU)

Surgical Intervention	UHG	LUH	Total
Wide Local Excision	197	47	244
Excision of Margins	25	0	25
Mastectomy	62	15	77
Sentinel Node Biopsy	197	29	226
Axillary Clearance	53	16	69
Breast Reconstruction procedures (immediate)	16	4	20
Breast Reconstruction procedures (delayed)	1	-	1
Total	551	111	662

Number of Breast MDM Discussions

Year	Number of MDM Discussions	Number of Patients Discussed at MDM
2020	2110	1327



Breast Screening Programme

Dr Aileen Larke

*Clinical Director & Lead Consultant Radiologist
BreastCheck West*



*Mr Karl Sweeney, Lead Surgeon
Dr Catherine Glynn, Radiologist
Dr Michael Click, Radiologist
Ms Jennifer Kelly, Unit Manager
Ms 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. By 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.



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

Performance Parameter	Western 2020
Number of women screened	10,327
Number of women re-called for assessment	696
Re-call rate	6.73%
Number of women diagnosed with cancer	85

In 2020, 13,425 women were invited for a screening mammogram and 10,327 attended; 696 women had an abnormal mammogram and were recalled to triple assessment clinic.

As a result of the COVID-19, pandemic screening was paused in March 2020 until September 2020 and again in January 2021, during this period of pause, BreastCheck clinical and administration staff provided support to the Symptomatic Breast Clinic and in total, approx. 1,800 symptomatic patients were seen by BreastCheck during this time. BreastCheck staff were also deployed to facilitate the rollout of the vaccination clinics in GUH and supported in the areas of data entry and validation.

In 2020, the BreastCheck Western Unit diagnosed 85 women with breast cancer. This cancer detection rate is similar to other national and international breast screening services.

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 2020, the age extension project concluded with women aged 69 now included in the programme.



Mr Mark Regan
Consultant Surgeon
Lead Clinician

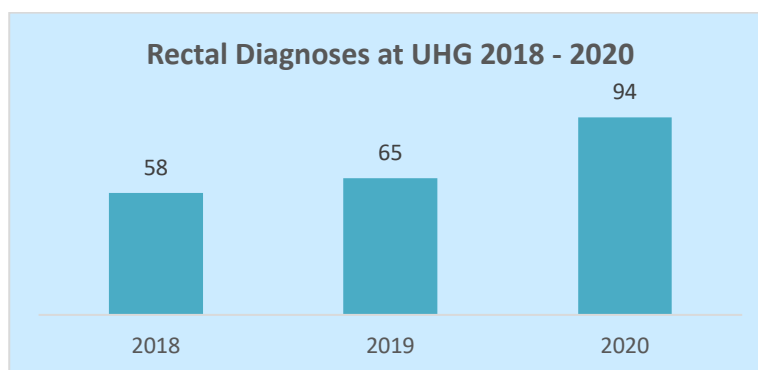


The Colorectal Cancer Programme at UHG and its associated services across the Saolta University Health Care Group aim to provide an effective, safe, high quality and patient centred regional cancer service to the population of the Saolta region. This programme provides high quality care to all its patients,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

In 2020, fifty multisite Multidisciplinary Meetings (MDM) occurred with 1,625 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 are 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. We were delighted to welcome Mr Babak Meshkat to the team here in 2020.

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 and Claire Ryan for their 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.



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

NCCP Rectal Cancer Returns 2020	UHG Jan-Jun	LUH Jan-Jun	UHG Jul-Dec	LUH Jul-Dec	Full Year 2020
Newly diagnosed rectal cancer patients referred to the cancer centre	58	11	33	6	108
Newly Diagnosed Primary rectal cancer patients who had a primary radical surgical procedure (incl. APR)	21	3	14	4	42
Total number of BowelScreen Patients with newly diagnosed primary rectal cancer who underwent radical surgery (incl. APR)	6	n/a	2	n/a	8

Colorectal Stoma Care GUH

Mary Quigley, Stoma Care CNS

Aisling Dunne, Stoma Care CNS

The stoma care therapy service, a critical component of the colorectal service, continued to provide an extensive programme of support to all colorectal patients in 2020 including mentoring and after care.

This programme is multifaceted and includes:

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

This year saw an increase in our virtual outpatients and we have learnt to adapt our service and strive to work closely with public health nurses and GP practices in order to keep patients out of hospital throughout the pandemic. As can be seen from the table below our telephone triage support and counselling was substantial as we all maintained social distance and prioritised minimising physical contact during this challenging year.

Colorectal/Stoma Care Activity 2020	Number
Pre-assessment clinic activity	35
Pre- op siting/counselling (no stoma created)	56
New Stoma created (68% oncology related)	177
Reversal of stoma	27
In-patients review (established stoma with problems, e.g. Chemo/Radiotherapy related)	175
Outpatient activity (Nurse Led Clinic)	293
Intracutaneous fistulae/wound	6
Telephone triage/support counselling	2,090

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

In 2020, there were **50** new cases of colorectal cancer diagnosed in Portiuncula University hospital (**15** rectal cancers and **35**-colon cancers). 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 be performed either in PUH or in GUH.

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.

In 2020, the care and management of ostomates was reduced due to redeployment during the COVID -19 pandemic. This programme includes

- Siting pre operatively, 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.

Dr Eoin Slattery
Consultant Gastroenterologist
Lead Clinician



The primary goal of BowelScreen is to reduce mortality from colorectal cancer in men and women aged 55 - 74 in Ireland. The Saulta 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 Saulta Group hospitals are BowelScreen centres: UHG, LUH, SUH & RUH.

Like other screening programmes, the BowelScreen programme was faced with patient safety challenges during COVID-19 finding a balance between bringing healthy people into an environment where they could potentially be at risk of contracting the virus. BowelScreen services, therefore, paused nationally from March 2020 for a number of months and resumed in summer.

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.

All BowelScreen patients are pre-assessed by the BowelScreen 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 Dr Diarmuid Manning (Consultant Gastroenterologist).

Since the last publication, we have said goodbye to Ms Amy Forde RANP and would like to wish Amy all the best with her career in Mayo University Hospital. We also wish Mr Liam McMullin well on his retirement.

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

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

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 Indicators as set out by the National Screening Service.

Although 2020 was a very challenging year due to the COVID-19 Pandemic, RUH continued to provide Endoscopy / BowelScreen services, however at a lesser capacity than previous years.

Roscommon University Hospital BowelScreen End of Year Activity Report 2020

BowelScreen Activity	2020
Number of index and surveillance BowelScreen colonoscopies performed	175
Number of repeat procedures performed	24
Total number of BowelScreen procedures performed	199
Number of patients referred from CTC either direct from pre-assessment or following an incomplete colonoscopy	2
Number of patients referred for EMR	1
Number of patients with pathology referred for discussion at the BowelScreen MDM	143
Numbers of cancers confirmed	3



Dr Marcia Bell

*Consultant Endocrinologist
Lead Clinician*



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.

Dr Marcia Bell leads the Programme at UHG 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 standardise 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 radioiodine 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.

Impact of COVID-19 Pandemic

Coronavirus disease 2019 (COVID-19), which is caused by SARS coronavirus 2 (SARS-CoV-2) was declared a pandemic by WHO on 11 March 2020. Reallocation of resources to treat COVID-19 patients challenged healthcare services worldwide, leading to hospital bed and staff shortages, and prioritising cases to reduce transmission and relieve healthcare systems altered the standard of care for many illnesses. The NCCP issued guidance/advice for the management of thyroid cancer during the period of COVID-19 restrictions, which were based on NPHET, HSE and DoH advice.

These guidelines affected both surgery and RAI treatment for differentiated thyroid cancer.

RAI: it was recommended that RAI be deferred until such a time that an admission to hospital for isolation is considered safe and that RAI could be deferred for 3 months (up to 6 months depending on the clinical situation). Decisions were advised to be made on a case-by-case basis.

Surgery: it was recommended that decisions regarding the requirement for surgery be made by the MDT. Imminently life threatening thyroid cancers such as those that posed significant morbidity relating to local invasion or exhibited aggressive tumour biology, patients with significant symptoms and/or rapidly

progressive disease were able to access surgery. For patients with cancers categorised as “low risk” (where progression is considered slow) surgery was delayed until a time when it was considered safer to proceed. Surgery was also deferred for patients considered susceptible to severe COVID-19 infection or who may have needed intensive care monitoring after surgery. Local numbers of COVID-19 patients and staff availability also affected the provision of surgery.

Key priority for 2021

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.

Endocrine	Total for 2020
MDM Discussions	572
No of Cancers Diagnosed	91



Mr Michael O'Leary
Consultant Gynaecology Surgeon
Lead Clinician



A tertiary referral gynaecological oncology service 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.

2020 continued to be a busy year for the gynaecological Oncology service. Despite the restrictions to service, which resulted from the first wave of the COVID-19 pandemic, every effort was made to accommodate new referrals of patients with gynaecological cancers to UHG. Both consultants made use of theatre lists in the Galway clinic to perform surgery twice weekly. Patients were also referred to the Mater hospital where capacity was available.

Number of Gynaecological Surgeries per Cancer Type

Year	Endometrial	Ovarian	Vulval	Cervix	Total Surgeries
2019	42	52	1	6	101
2020	37	55	13	15	120

Ms Orla Young

*Consultant Otolaryngologist, Head & Neck Surgeon
Lead Clinician*



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 Otolaryngology, Head and Neck Department (ENT) and the Department of Maxillofacial Surgery provide the Head and Neck cancer programme at UHG.

The ENT Department consists of five consultant surgeons; Professor Ivan Keogh, Mr John Lang, Ms Mona Thornton & Ms Orla Young, Mr Thava Subramanian and a team that includes 2 SpRs, 4 registrars, two SHOs and 2 interns. 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 GUH and PUH.

In 2020, the Head and Neck Oncology Multidisciplinary Team was extremely busy with 819 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 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.

Trans Oral Laser Microsurgery (TLM) 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 and Speech and Language Therapy support and Palliative Care services means that patients attending the Head and Neck Oncology Programme at UHG have direct access locally to world-class care at University Hospital Galway.



Dr Amjad Hayat

National Clinical Lead NCCP

Consultant Haematologist

Lead Clinician

Licensed Responsible Person (RP) of the Blood and Tissue Establishment – GUH



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 HPRA licensed 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 University Hospital Galway (UHG) with supportive care provided at regional centres at Letterkenny University Hospital 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.
- The Health Products Regulatory Authority (HPRA) licenses the Galway Blood & Tissue Establishment (GBTE) in UHG. It is the only licensed hospital based Blood Establishment outside of the Irish Blood Transfusion Service (IBTS) in the Republic of Ireland and it is one of very few Tissue Establishments. It is also the only hospital-based site in Ireland to have achieved a GMP manufacturing license, which it uses for the production of Autologous and Allogenic Serum Eye Drops for patients on a national level. It is also uniquely licensed for Bone Marrow and Lipo aspirate procurement. The GBTE complies with strict EU Blood, Tissue and GMP regulatory laws and is inspected for adherence to these at regular intervals.
- Haematologists have a strong track record of involvement in high quality clinical trials, which have led to continuous improvement in malignant haematological outcomes.

Saolta Haematology Clinical Programme

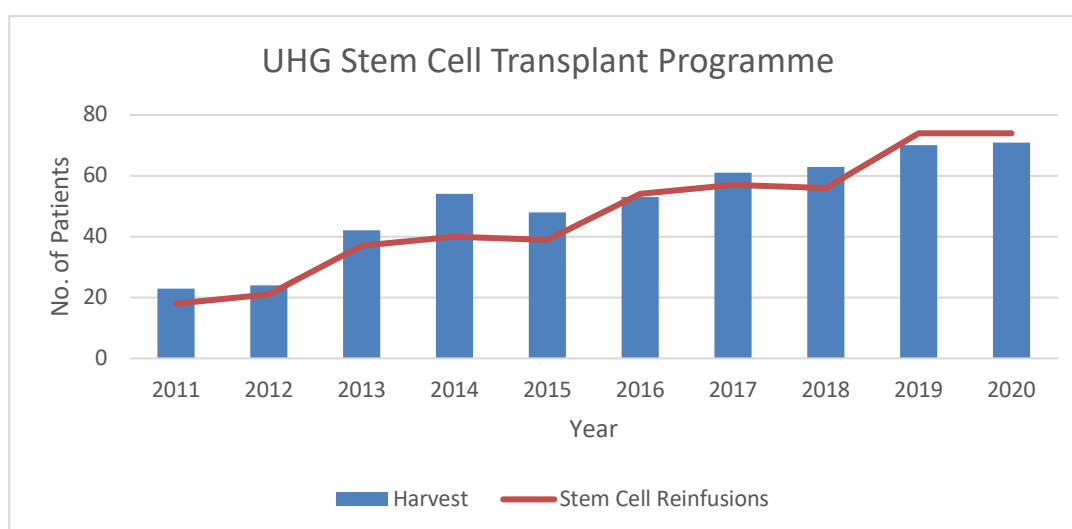
Hospital	Stem Cell Transplant Programme	Inpatient services	Day Ambulatory Treatment	Outpatient Services
UHG	Yes	Yes	Yes	Yes
LUH	-	Yes	Yes	Yes
MUH	-	-	Yes	Yes
PUH	-	-	Yes	Yes
SUH	-	Yes	Yes	Yes

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 Hospitals. 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 Roscommon University Hospital 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 meetings at UHG on an ongoing basis to discuss individual patient cases and plan treatment pathways.

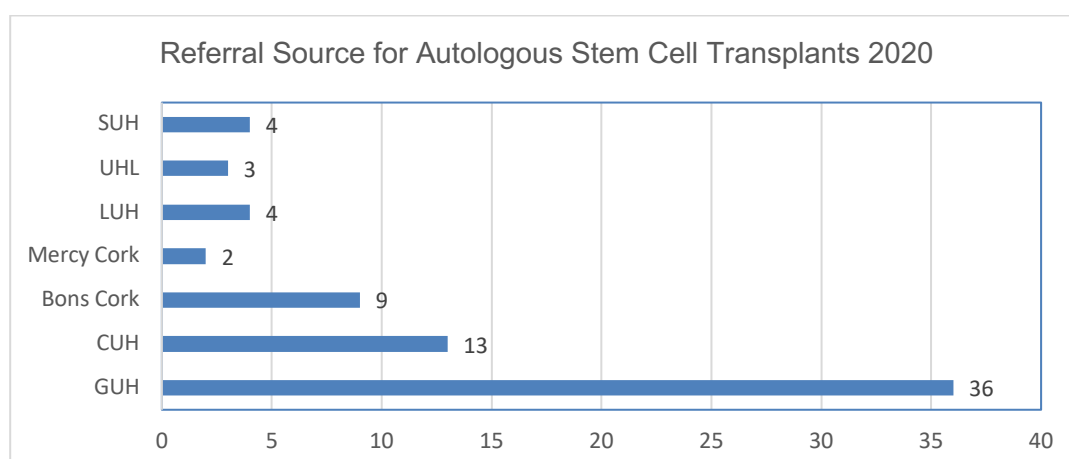
UHG has been the primary specialist centre for Autologous Stem Cell Transplantation for people with haematological malignancies from the West of Ireland since 1993 and more recently, the South of Ireland since 2013.

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



In 2020, the programme accepted referrals from Saolta Group Hospitals and from the South / South West Hospital Group.

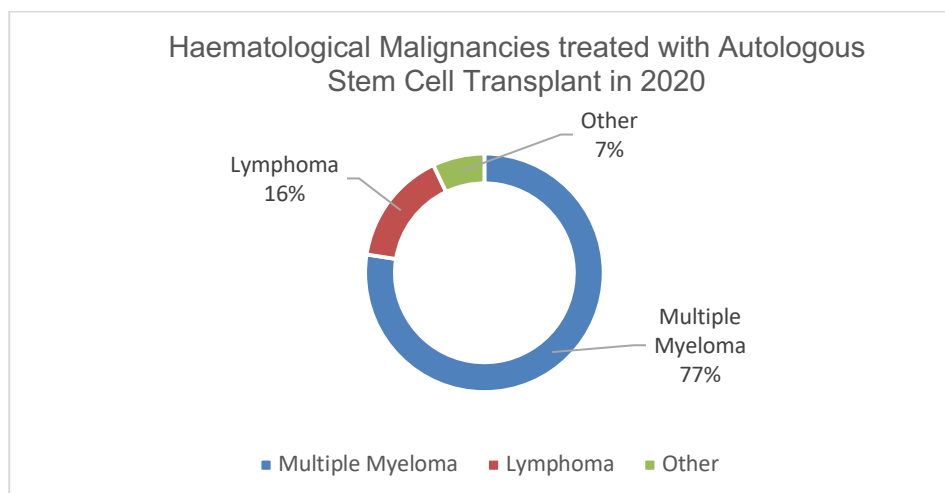
The UHG Stem Cell Transplant Programme involves a team of experienced consultant Haematologists working with a diverse expert multidisciplinary team including clinical nurse specialists, specialist registrars, biomedical scientists, specially trained nursing team & pharmacists.



The Stem Cell Transplant Programme in UHG, treating multiple myeloma, lymphoma and other cancers has grown exponentially at +350% in the years from 2011 – 2020.

In the last five years 2016-2020, 315 patients have received an autologous stem cell transplant through the programme in UHG.

In 2020, 77% of transplants were for the treatment of Multiple Myeloma, 16% 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 ensures 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 GBTE Laboratory on site.

Haematology Outpatient Activity UHG 2020

Despite the restrictions imposed during the pandemic, Haematology Outpatient Activity at UHG in 2020 increased by just over 500. As well as attendance in person, video and telephone consultations became a new way of facilitating patient interactions.

UHG Haematology Outpatient Activity 2020

Description	Attendance
New Patient Attendances	646
New Patient Telephone only	105
New Patient video only	6
Review Patient Attendances	2929
Review Patient Telephone only	2011
Review Patient Video only	675
Total	6372

National Cancer Control Programme (NCCP) 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 2020, the overall Group performance averaged 89% with UHG's average over the year being 76%. The key deficit at UHG is capacity, requiring intensive local management on a daily basis in the interim while awaiting the proposed new Ambulatory Care Centre.

Challenges & Quality Improvements

Patient flow & Resource Utilisation

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 the availability of timely treatment 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 2020-2025.

Stem Cell Processing & Storage Laboratory

The licensed Blood and Tissue Establishment is an essential aspect of the stem cell transplant programme as this clinical service is dependent on continued licensing and compliance with EU Blood, Tissue and GMP Directives. In that respect, this facility requires complete replacement and validation. This has been included in the UHG capital expenditure plan. Work has yet to begin on this essential project.

Haematology Ambulatory Care

The UHG 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 UHG 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 Systemic Anti-Cancer Therapy (SACT) in line with the balanced regional development plan and Sláintecare. 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.

Saolta Haematology Outpatient New & Review Attendances (excluding virtual contacts)

	2019	2020
University Hospital Galway New	955	646
University Hospital Galway Review	4913	2929
University Hospital Galway Total	5868	3575
Mayo University Hospital New	22	4
Mayo University Hospital Review	637	625
Mayo University Hospital Total	659	629
Sligo University Hospital New	248	232
Sligo University Hospital Review	1500	1401
Sligo University Hospital Total	1748	1633
Letterkenny University Hospital New	248	232
Letterkenny University Hospital Review	1965	1521
Letterkenny University Hospital Total	2213	1753



Lung Cancer & Thoracic Surgery



Dr David Breen

*Consultant Respiratory Physician
Lead Clinician, Interventional Pulmonologist*



Mr Alan Soo

*Consultant Thoracic Surgeon
Thoracic Surgery Lead*

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 yearly 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 comorbidities 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.

Rapid Access Lung Clinic (RALC) History

The National Cancer Control Programme (NCCP) was set up to re-organise 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, which 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.

Meet our team

Dr D Breen, Consultant Respiratory Physician & Interventional Pulmonologist, leads the RAL programme at UHG. He is the clinical lead of the lung cancer service in the Saelta Group and the chair of the NCCP Lung Leads Group. Respiratory SpRs and a specialised nursing team in the rapid access clinic support him.

Nurse Imelda Fleming completed her master's degree in 2019 is now 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 lung cancer survivors. 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 providing patients with great support. She integrates specially focused education sessions for her patient group and ensures 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.

In 2020, the service was further expanded with the addition of Janet Cline as the CNS for the RALC. Janet has spent over 12 years working as a lung cancer nurse in Ireland. Her wealth of experience is evident in the support

she provides for this vulnerable patient group. Janet is a core member of the MDT. She coordinates the patient pathway and acts as the key worker for the patients going through their diagnosis journey. She is always at the end of the phone for her patients.

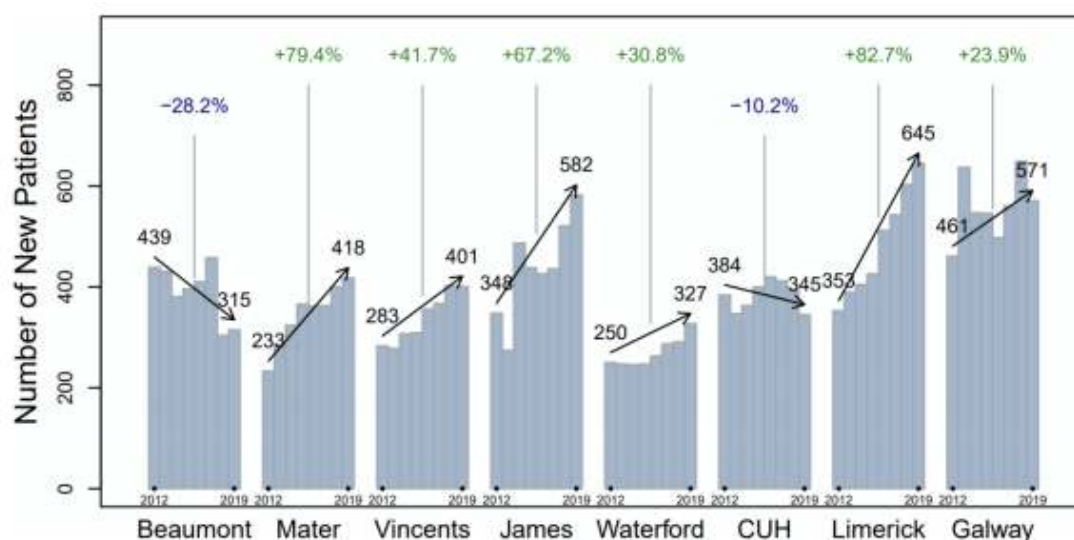
Together with staff nurse Jacinta Murphy, this team of nurses bring an abundance of experience and skills to the service. Jacinta has worked in the RALC for 7 years. She attends the RALC and the joint thoracic clinic. She has her completed smoking cessation course in 2020 and has enjoyed adding this skill to her practice.

Nainsi Corcoran is the Lung Cancer MDM coordinator. She enables the efficient running of the MDM and her assistance to the service is invaluable.

GUHs 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, one of the RAL nurses meets them. This first meeting is often a difficult time for the patient. The RAL nurses act a support for the patient 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.



As demonstrated in the above table the number of referrals sent to the RAL are increasing every year. This is reducing the number of inpatient diagnosis of lung cancer. Keeping patient out of hospital is ideal for reducing patient anxiety.

Throughout 2020, it was very difficult to meet the 10 day KPI, Clinics had to be capped to ensure patients were socially distanced. Despite the challenges, the RALC has continued to have 95% of their patients seen within the 10 days. We aim to improve on this for 2021, hoping to have 100% of our patients in for their first review on target.

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 the 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 treatments that are more effective 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 dyspnoea 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 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 MPH for their diagnostic activity. Here professional nurses who care for them on the day of their procedure meet the patients. 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.

Below are the activity number for biopsies performed by Dr Breen via Unit 8 in 2020. Despite the effects of the COVID-19 pandemic on the health service, this demonstrates that essential procedures have continued.

Unit 8 Merlin Park Statistics 2020

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
Bronchoscopies	24	26	18	13	20	18	23	25	18	23	24	12	244
Endobronchial Ultrasound	16	32	20	18	24	19	20	31	23	25	23	28	279

Throughout 2020, any additional measures were taken to ensure patient safety. Screening patients prior to attending medical appointments, ordering COVID swabs on patients prior to procedures and lung function tests, additional cleaning measures and referring patients for their vaccines.

Multi-Disciplinary Team Meetings

The MDM is held in UHG on Mondays and joined via video link by Sligo, Mayo & Roscommon University Hospitals. A panel of experts including specialities of respiratory medicine, Thoracic surgery, Medical Oncology, Radiation oncology, Radiology and Pathology, discusses patients from across the Saolta Group. 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 will be recommended based on the expert opinions of the team.

Joint Thoracic Clinic

After their discussion, the patients are brought to their follow up appointment in the Joint Thoracic Clinic. At this clinic the patients have access to multiple specialist consultants. Our CNS Janet arranges the clinic in a way that it acts as a one-stop shop for the patients as they only have to attend one appointment to see these specialists as opposed to multiple appointments.

COVID-19

2020 was a particularly challenging year for the health service. The COVID-19 pandemic has had a significant impact on all cancer services and lung cancer in particular. Cancer patients are more susceptible to infection. This is due to systemic immunosuppression caused by both the cancer and associated treatments. Lung cancer patients are not more likely to contract the virus; however, they are more likely to develop complications should they manifest COVID-19. This is due to their average older age, decreased pulmonary function and respiratory comorbidities. During the pandemic, fewer patients sought out medical help with GP attendance figures down. This had the potential to delay cancer diagnosis. It is important that patients are aware that they need to seek medical help should they require it.

In April 2020, CNM Ashling Coyne was redeployed to the Corrib ward to act as the assistant CNM on the COVID-19 assessment Ward. This meant that the service had to quickly adapt at a difficult and challenging time. Clinics were difficult to operate at full capacity and many patients were very fearful of attending the hospital during this time. Our staff really stood up during this time and incorporated new policies into practice with determination and professionalism. For a time clinics were mostly virtual and additional infection control measures were put into place to protect both patients and staff.

COVID-19 impacted many people's lives personally and I would like to take this opportunity to reflect on the lives lost and changed forever. Dr Breen, Janet, Jacinta, Imelda and Ashling have all worked tirelessly to keep our patients safe and to continue our objective of diagnosing patients quickly and getting them on a treatment pathway in a timely manner.

The Future

With the addition of the clinic coordinator role, we will strive to track our KPIs more closely and use these to improve our service. Janet aims to complete a patient satisfaction survey that will also look for areas of possible improvement/development.

Dr Breen and Ashling have been working with different stakeholders to bring CT navigation into the service. We are also hopeful to include nodule surveillance software within the RALC. Both of these will assist the service greatly.

COVID-19 has given us some surprising opportunities. We have embraced the opportunity to introduce virtual work up's for the patients. This in turn has afforded us the ability to see patients after their CT scan. It reduces the number of physical contacts with the patients and helps to speed up the process. We hope to expand on this possibility further.

The RALC is looking forward to the future. The overall aim is to provide continued service improvements and therefore the best possible service to patients with (presumed) lung cancer.



Prof Chris Collins
Consultant Surgeon
Lead Clinician



The Upper GI Surgical Programme in GUH, one of the 4 NCCP designated centres for Oesophago-Gastric Cancers, has had a very active period in the year 2020. Prof. Chris Collins, Prof. Oliver McAnena, and Mr. Paul Carroll deliver the service.

Early 2020 saw the first wave of the COVID-19 pandemic strike Ireland with a catastrophic initial impact. Surgical services were dramatically impacted as the health service struggled to understand and contain the virus. With judicious care, the Upper GI programme recommenced in March 2020 with minimal delay. Our thanks and praise must be extended to the Intensive Care Team who helped to safeguard our cohort of cancer patients during the pandemic.

The Minimally Invasive Upper GI Resection programme headed up by Mr. Carroll, started in earnest with introduction of Thoracoscopic/laparoscopic Oesophagectomy and Laparoscopic Total Gastrectomy. This has demonstrated reductions in morbidity, shorter length of stay, and better quality of life for patients, a benefit for the patient and the hospital.

The incidence of advanced cancers has been recognised towards late 2020 with increased interventions required for late diagnosis cancers. These include stent placements, intestinal bypasses and alternate feeding access procedures.

Our gratitude, as always must be extended to our CNS, Ms. Aoife Quinn. The CNS supports the patients coming through GUH 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 team are seeking to expand our CNS team to manage the increasing workload.

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. ESO-DATA is an ongoing international collaborative, gathering data on oesophagectomy outcomes. The Periop-OG trial, a prehabilitation study, concluded in late 2020. The final results are awaited. Other studies included COVID-19 related outcomes in oesophageal and gastric cancers during the pandemic, which were recently published.

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

Establishment of an Early Upper GI Mucosal Neoplasia Programme

In mid-2020, the Endoscopic Ultrasound service was established in UHG with the procurement of the necessary equipment. In conjunction with Dr. Farman Muhammad, these patient assessments can now be provided formally on the UHG campus. The Endoscopic Submucosal Dissection (ESD) programme was initiated in 2020. These techniques (allowing for wider endoscopic dissection of early oesophageal and gastric cancers), in conjunction with radio-frequency ablation (RFA), and EMR techniques with Eoin Slattery, Consultant Gastroenterologist has allowed for the treatment of premalignant Barrett's oesophagus and early cancers. This will help prevent people from requiring complex major surgery. This programme needs dedicated theatre access to be fully functional and requires executive support.

Theatre Access/Capacity

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

Recruitment/Robotic Surgery/ERAS

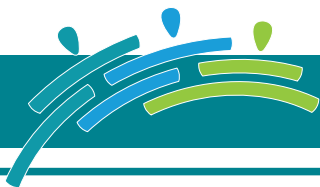
The Upper GI programme must establish a Robotic arm to its surgical technical capability to move forward with the Minimally Invasive programme. There will be a need for a further surgeon to be brought on board to assist in the expansion of the programme over the next number of years.

Finally, integral to improving outcomes is to develop and enhance recovery after surgery (ERAS). Establishment of an ERAS Nurse with prehabilitative and rehabilitative support from dietetics and physiotherapy will improve survivorship in our patient cohort. The Upper GI programme is examining outcomes through a quality improvement initiative through the introduction of Minimally Invasive surgeries. A preoperative clinic where patients are seen by dieticians and physiotherapists is required to help drive improvements.

UHG Upper G.I. NCCP KPIs (Data Source: KPI Returns 2020)

Parameter	Jan - June	July – Dec	Full Year
New Diagnosis Patients	62	76	138
Newly diagnosed patients with radical surgery as their first treatment	5	6	11
GI Surgery 2020			
*Total number of Upper GI surgeries	20	21	41
Direct to surgery T1/T2	5	6	11
Neo adjuvant	15	15	30

*includes oesophageal, oesophago junctions and gastric surgery for curative intent only



Mr Niall McNerney

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 of NMSC will double. Melanoma is expected to follow suit, with the prevalence rate increasing significantly (Source: National Cancer Registry Ireland).

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. The numbers were seen to reduce in 2020 with 2,518 skin cancers detected. This may be related to COVID-19 as some individuals did not wish to attend the hospital from March 2020 onwards, but also clinics ceased for a period of time.

Skin Cancer Data 2020 (Data Source: Pathology)

	Basal Cell Carcinoma	Squamous Cell Carcinoma in situ	Squamous Cell Carcinoma	Melanoma in-situ	Invasive melanoma	Total Skin Cancer
2019	1621	208	812	193	168	3002
2020	1284	182	684	173	195	2518

In RUH, two skin cancer surveillance clinics take place every week. One plastic surgeon and three advanced nurse practitioners run this service. They saw approximately 655 skin cancers (including BCC's) in 2019 and 606 in 2020 (Source: Skin Cancer ANP, RUH). A dedicated skin triage clinic and skin cancer surveillance clinic is run in UHG by a dermatologist. Also, in UHG, there is a plastic procedure unit where suspicious lesions can be excised. 2,147 cases went through this unit in 2019 and 1,451 in 2020 (Source: CNM2 in the PSP department).

In early 2020, a Skin Cancer Nurse Specialist was appointed in University Hospital Galway. Her role includes following up patients with skin cancer in both the dermatology and plastics remit. She organises the Multidisciplinary Team Meeting for the entire Saolta Group. She acts as a support for the patients and works alongside the teams to assist with the patient's care.

COVID-19 impacted skin cancer worldwide from early 2020 onwards. In Galway, the private hospitals were utilised to reduce the delays that COVID-19 was causing nationwide. Between May and September 2020, more than six-hundred lesions, which were suspicious of skin cancer, were excised in the Bons Secours Hospital.

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. Similarly, 773 discussions took place in 2020 (Source: MDM programme in UHG). This meeting comprises of the hospitals within the Saolta Group as well as many referrals from Limerick University Hospital.



Ms. Catherine Dowling
Lead Clinician
Urological Cancer Lead
Consultant Urological Surgeon



Mr Paddy O'Malley
Lead Clinician
Rapid Access Prostate Clinic
Consultant Urological Surgeon

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 that meets fortnightly with videoconferencing linkages to LUH & SUH that enables clinical experts to discuss urological cancer cases for the regions. One of our key objectives for 2020 was to develop a dedicated Prostate MDM to support the programme this commenced in September 2020.

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 In Patient day case procedures.
- In addition, more specifically, an increasing demand on our Prostate, Kidney and Bladder cancer programmes, alongside Cancer Survivorship.

Rapid Access Prostate Clinic (RAPC)

The Rapid Access Prostate Clinic was established at UHG in 2009 and since then men with suspected prostate cancer are referred by GP's across the Saolta University Health Care Group and are seen within 20 working days of receipt of referral. The programme has grown exponentially since opening and it now stands as the busiest RAP service in the country. 2020 brought the RAPC new challenges with an ever-increasing demand yet the need to maintain social distancing and prioritise patient and staff safety during the pandemic.

The number of review patients in our clinics continues to rise. The rapid access service takes 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 an individual treatment plan is agreed.

Patients diagnosed with prostate cancer may be treated with any one of the following interventions; sometimes a combination of treatments may be required. Prostate cancer surveillance and treatment options may include active surveillance, watchful waiting, robotic assisted radical prostatectomy, external beam radiation therapy, brachytherapy, HDR brachytherapy, androgen deprivation therapy and chemotherapy. Patients receive an individualised treatment plan tailored to appropriately treat their prostate cancer. Donegal patients are referred for external beam radiotherapy to Altnagelvin under a national Service Level Agreement but have seed brachytherapy at UHG.

Mr Garrett Durkan is the consultant surgeon who runs the RAPAC in Limerick along with his nursing team Sheila Keily ANP & Mary Cremin CNS.

UHG Rapid Access Prostate Clinic Activity 2018 - 2020

Activity	2018	2019	2020	
OPD	11,386	12,603	11,848	
Rapid Access Prostate (RAP) New	669	844	638*	595 OPD 43 Virtual
Rapid Access Prostate (RAP) Review	3447	4385	5,917*	3,393 OPD 2,524 Virtual

**2020 COVID-19 Pandemic Clinics were ran via OPD & Virtual Appointments*

Rapid Access Prostate Surgical Activity 2020

Total number of new primary diagnoses	223
Total number of Prostate Surgeries	149

UHG Bladder Cancer Surveillance: Flexi cysto day case activity

In 2020, there was a total of 923 outpatient/day case flexible cystoscopy procedures in the urology unit. Robert McConkey provides an ANP led intravesical chemotherapy and cystoscopy service.

Of these, 325 were bladder cancer surveillance (Increase of 32% over 2019 as during the pandemic we developed 'COVID-19' protocols to safely utilise the cystoscopy service in the urology unit for all consultants high risk bladder cancer patients, including those who would normally have been done in the SDW and elsewhere). Bladder cancer installations decreased by 13% in 2020 compared to 2019 due to impact of pandemic and subsequent change in protocols.

	2016	2017	2018	2019	2020
Immunotherapy Instillations	173	203	329	358	336
Chemotherapy Instillations	57	85	102	71	35
Total	230	288	431	429	371

Nursing Programme Rapid Access Prostate Service

Rachael Dalton, Candidate advanced nurse practitioner (cANP) 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. Our dedicated nursing team supports this clinic. We aim to provide men and their families with care, advice & education both prior to and following treatments for prostate cancer.

The nursing team provide men and their families with support following a prostate cancer diagnosis. This support begins when patients receive their results at their clinic appointment. The specialist nursing team meets with the patient and their family following their consultation with the medical team. At this point we introduce ourselves as one of the patients' main point of contact. We provide our patients with appropriate literature from the Irish cancer society, information on their local cancer support groups & contact details for our dedicated prostate cancer nurse support telephone line. The nursing team assist the coordination of staging investigations and subsequent patient follow up in clinic to optimise efficiency within the unit.

Importantly, we communicate with patients and their families to appropriately assess patients' needs and provide relevant support. The candidate advanced nurse practitioner 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 survivorship and physiotherapy, active surveillance and post prostatectomy PSA surveillance clinics moved to a virtual platform in 2020 due to the COVID-19 pandemic. In this way, we continued to closely monitor our prostate cancer patients for cancer recurrence and appropriately treat & support those men following treatment for prostate cancer.

The nurse led survivorship and physiotherapy clinic runs once a week on a Wednesday. In early 2020, these clinics were deferred due to the pandemic. During early summer, these clinics were reinstated with the support of our physiotherapy colleagues, Debbie Fallows and Thomas Samuel. The aim of these clinics are to support men in their recovery with both physiotherapy and nursing assessment of patient symptoms.

Active surveillance and post prostatectomy review clinics continued within a virtual platform for Mr Garrett Durkan patients during 2020. Importantly with the advent of the cANP role, we were afforded an opportunity to expand these clinics to include patients under the care of Ms Catherine Dowling & Mr Paddy O'Malley. These clinics are essentially moving patients away from the busy RAPAC clinics to a supported nurse led service. In doing this, we aim to create more space for complex cases & new referrals within the RAPAC service.

Pre surgery education classes commenced virtually in 2020 and this continues to date. Patients who are waitlisted for surgery are sent an invitation to attend a pre surgery education class. This class runs twice a month. Within this class men are provided with further details as to what to expect prior to, during, and following their hospital stay. At this class, I introduce men to urinary catheter care and pelvic floor exercises. An animation of the robotic radical prostatectomy procedure is also presented. Following the presentation, men have an opportunity to ask questions and are once again the cANP contact phone number and email are provided. This presentation is open to all men who are listed for surgery including those men attending the RAPAC in Limerick.

Patient Feedback:

Feedback from patients who attended the virtual class has been largely positive:



"Just in response to your meeting this evening. I found it very beneficial and just to say thank you again for taking the time out to do that for us. I don't have any questions really at the moment but if I have I will keep in contact with you"



"Really enjoyed the class Rachael, great to have all this information before surgery"

The prostate cancer information and support group continued following a short hiatus in early 2020. Again, we moved to a virtual platform. The prostate cancer support and information series class is coordinated by cancer care west and the cANP. The aim of the sessions is to support men with a diagnosis of prostate cancer by facilitating specialised presentations on various topics related to the disease and its management. Facilitating these classes virtually contributed to the growth of the programme, and we saw an increase in participants from Mayo, Sligo and Donegal in attendance.

Feedback from patients who attended the virtual class has been largely positive cont.:

"Everything was explained simply and to the point".

*"relaxed professional approach of presenters. New information was helpful" "For me, when I was diagnosed with prostate cancer during the 1st lockdown in 2020, consultants were prohibited from meeting patients so I had to do a treatment consultation with ***** by phone (not even a virtual call) so it was nice to be able to see him during the information evening."*

"Not a fan of online! But better than a 4-hour round trip to Galway!"

"I had hoped for a better Q+A afterwards. It's always good to hear the experiences of others. I realise that I am partly responsible for the lack of this - maybe it will improve in the future when we become used to this format."

Rachael's role as adjunct lecturer continued in 2020. This close link with the University of Galway facilitated many teaching & moderation opportunities over the year.

2020 was a difficult year for all staff and patients. Within urology day services we tried tirelessly to ensure our patients did not feel alone in what was a very isolating and lonely year. I believe our clerical, nursing and medical team rallied together to the best of our ability, in difficult circumstances to achieve this. This year did provide great learning; we changed many of our processes and patient support events, many of which will continue in this new format going forward.



Prof Margaret Murray

Clinical Director Laboratory Directorate



The Laboratory Directorate is pivotal in the provision of cancer care throughout the 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 Programmes e. g. Breast Check and the Bowel Screen Programme. Apart from its role in the Screening Programmes other departments also provide 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 Group but the other departments within the laboratories throughout the Group contribute crucially also to the prevention, diagnosis, monitoring and assessment of treatment outcomes.

The high volume departments of Clinical Biochemistry, Haematology and Immunology in GUH processed near 13.5 million (FBC counted per test) tests, and LUH and MUH processed near 4.17 and 3.18 million tests (FBCs counted per profile) respectively. Approximately one quarter (GUH) and one-tenth (LUH & MUH) respectively of these were associated with some aspect of the cancer care programme. In MUH in 2020, 68,206 tests (6,305 samples) and 4501 requests were received by the Biochemistry and Haematology Departments respectively from MUH Oncology Department, equating to approx. 3.5% and 2.5% of the Biochemistry and Haematology activity respectively.

The **Haematology department** in GUH and LUH, through its special haematology service and supported by Table 5 and 6 below, processed 579 bone marrow samples and 229 respectively (of which 110 of 229 provided positive diagnosis of lymphoma/Leukaemia), 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, GUH processed 662 samples. GUH processed 449 tests to assess the adequacy of stem cell collections to support high dose chemotherapy. PUH Haematology supports 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 (231), Lymph panels (384) and CSF flow (47): **Total is 662**. 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: 449. This includes multiple counts on some patients, so therefore the number of patients is less.
- Number of Bone Marrows: 579.

The **Blood Transfusion** Departments across all Saolta Laboratories offer a Blood and Blood product clinical service that supports in 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.

The Tissue license allows GBTE to perform Stem Cell harvests, processing, and storage and follow on reinfusion which forms part of the treatment of many haematology patients. In 2020, 120 Harvests (70 patients) and 77 Reinfusions (69 patients) 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.

The **Clinical Biochemistry** speciality across the Saolta Group processes tumour marker tests (**Table 1**), a key component of the diagnosis and monitoring of cancers. An indication of the demand for this service sees a demand of 201,709 tests respectively across GUH, LUH and MUH Laboratories in 2020. SUH, RUH and PUH (TPSA) perform similar tumour marker tests in-house and/or refer externally to other Saolta Laboratories as applicable, and are included due to the considerable administrative efforts locally associated with it. PUH Clinical Biochemistry Department receives and reports on U&E's and Creatinine samples from the Oncology Day Ward daily.

Specialist Clinical Biochemistry testing is facilitated across all Saolta Laboratories and **Table 2** demonstrates the 2020 demand in GUH Clinical Biochemistry for same

The **Immunology Department** in GUH performed 41,064 and LUH laboratory performed 16,356 related tests (57,420 tests as per **Table 4** below) for the diagnosis of Myeloma and the immunodeficiency, which can occur either from treatment or as a result of many malignancies particularly haematological.

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 to 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. The impact of such requires continuous development and enhancement of services.

GUH Biochemistry Tumour markers analysis - 2020

Table 1: In-house Testing

Tests\Site	GUH	LUH	MUH
LDH	49,401	15906	
PSA	42,207	*17109	*28,449
CEA	8,351	3535	Ref. to GUH
CA125	7,522	2904	Ref. to GUH
CA199	6,736	1491	Ref. to GUH
hCG	6,487	2333	
AFP	4,311	1056	Ref. to GUH
CA153	3,437	474	Ref. to GUH
Sub-Total	128,452	44,808	28,449
Saolta Group Total	201709		

*TPSA in LUH & MUH

Table 2: GUH Total Specimens Received by Speciality

Speciality	2020
Oncology	20,294
Haematology	15,318
Radiation Oncology	3,579
Total	39,191

Biochemistry External Referrals 2020

Table 3: Biochemistry External Referrals

Tests	GUH	LUH
Thyroglobulin	397	50
Plasma metanephrines	284	139
Chromogranin A & B	164	45
Urinary metanephrines	137	26
Urinary 5-HIAA	89	14
Thiopurine methyltransferase activity	83	0
Deoxypyridinoline dehydrogenase mutation analysis	65	0
Inhibin B	24	19
Total	1243	293

Immunology Cancer related testing - 2020

Table 4: Immunology Cancer related testing

Test	GUH	LUH
Immunoglobulins	15,200	9,560
Serum electrophoresis	15,015	4,196
Serum immunofixation	2,883	1,603
Urine electrophoresis and immunofixation	1,240	641
Serum free light chain estimation	6,278	1411 <i>Referred to GUH</i>
Beta 2 microglobulin	448	356
Sub-Total	41,064	16,356
Saolta Group Total	57420	

GUH Haematology Cancer related testing - 2020

Table 5: GUH Haematology Internal Tests

<i>Marrow</i>	<i>Viscosity</i>	<i>Acute Panel -Flow</i>	<i>Lymph Panel -Flow</i>	<i>CSF -Flow</i>
579	212	231	384	47
<i>Stem(Harvest & Peripheral Blood)</i>	<i>Lupus</i>	<i>Thrombophilia Screen</i>	<i>Factor Assays</i>	<i>Morphology</i>
449	819	589	50 approx.	2737

External Referrals

Table 6: GUH Haematology External Tests

<i>BCR - ABL</i>	<i>CAL-R</i>	<i>Jak-2</i>	<i>Fish – Lymphoma/CLL</i>	<i>Fish Myeloma</i>
158	30	188	26	81
<i>MRD CLL</i>	<i>B Marrow Cytogenetics</i>	<i>Myeloid Gene Scan</i>	<i>HTA*</i>	
48	195	43	242	

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



University Hospital Galway

Dr Síne Phelan

*Consultant Pathologist
Lead Clinician*



Five anatomical pathology departments within the region, namely GUH, SUH, PUH, MUH and LUH, provide Saolta histopathology and cytology diagnostic services. Each department strives to reduce cancer morbidity and mortality with accurate diagnoses in a timely manner.

University Hospital Galway houses the largest of these and now employs nineteen histopathologists (four in temporary positions) in addition to sessions provided by two consultant histopathologists based at Portiuncula University Hospital, with a combined WTE of 16.7 pathologists. The UHG department of anatomic pathology (DAP) is also responsible for the delivery of surgical pathology for Roscommon University Hospital. The subspecialty areas covered by the service provide an interesting range of histology and cytology and include gastrointestinal, urology, dermatopathology, gynaecological pathology, cardiothoracic, head and neck and endocrine pathology. A significant proportion of pathologist resource is delivered to review of material for multidisciplinary team meetings across these subspecialty areas. Cancer services are supported by provision of pathology for the National Screening Services for breast, cervical and colorectal carcinoma. The department provides autopsy, immunofluorescence and tissue molecular diagnostics and facilitates referral opinions on a specialty basis. In addition, a specialist perinatal pathology service is onsite. There is an ongoing participation in the Royal College of Physicians of Ireland (RCPI) Faculty of Pathology's National Quality Improvement Programme. Non-consultant hospital doctor training is provided in conjunction with the RCPI accredited training programme.

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

In 2020, the Histopathology service embarked on an ambitious plan to develop a strategy for the delivery of a state of the art prognostic and predictive testing service, across the Saolta group. To this end, a Precision medicine Working group has been established.

This service has been led by Dr Sean Hynes and includes histopathologists from across the Saolta group.

COVID-19 had a major impact on the health service as a whole in 2020 and the histopathology service was no different. At the onset of the pandemic in March-April 2020, we saw a sharp decrease in our incoming caseload. In particular screening services, such as breast screening ceased entirely for some months. However, this was offset somewhat by a marked increase in activity in the latter part of the year, reflecting increased clinical activity, in an attempt to catch-up. Overall, there was a 21% decrease in core biopsy specimen numbers and a 14% decrease in cancer resection specimen numbers from January to June 2020, as compared with 2019. These large variations in incoming work created significant challenges for the departments in maintaining Turn Around times.

Activity

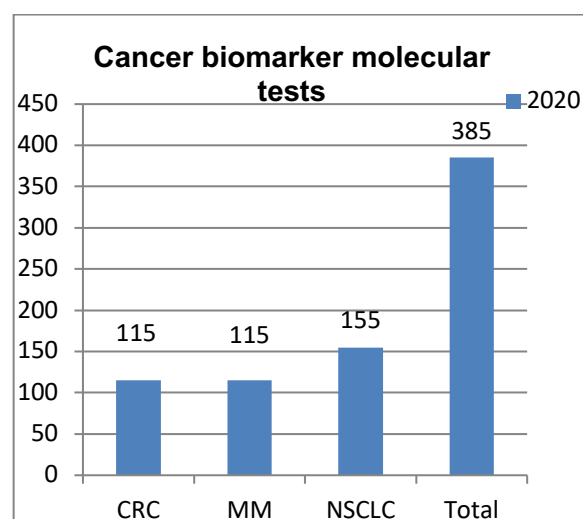
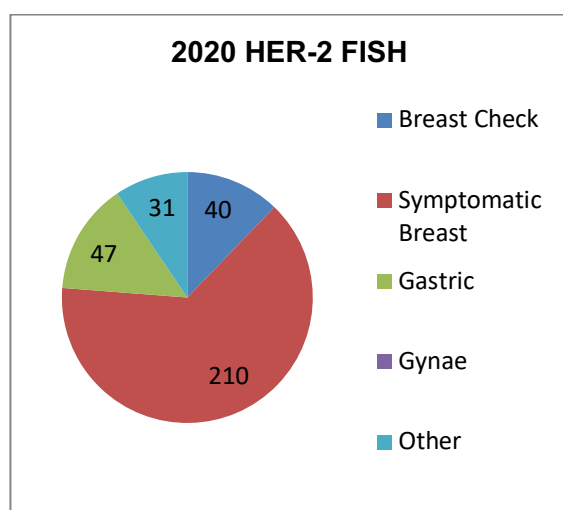
Data relating to GUH has been obtained from the departmental laboratory information system and from the DAP Molecular Laboratory. (Acknowledgements: Jennifer Ruane and Dr. Allan O'Keeffe).

Division of Anatomic Pathology Workload at GUH 2020 (Data source: Pathology GUH LIS)

P Code	Procedure codes	Cases	Specimens
P01	Small biopsy	5770	11799
P02	GI biopsy	9543	20745
P03	Non biopsy Cancer resection	2025	4667
P04	Non biopsy Non Cancer resection	13421	17562
P05	CSF	151	151
P06	Non Gynae Cytology FNA	688	1314
P07	Non Gynae Cytology Exfoliative	1242	1516
P10	Autopsy Coroner	315	315
P11	Autopsy Other	29	29
Total	All procedures	33184	58098

Pathology Cases Details 2020 (Data source: Pathology GUH LIS)

Malignancy Cases		Cases Discussed at MDM	
Surgical	5784	Surgical cases	4334
Cytology	336	Non Gynae cytology cases	420
Referral	296	Referred cases	232
Total Malignant Cases	6416	Total no. discussed/reviewed	4904
Cases referred to the Division of Anatomic Pathology for testing/review/opinion/MDM discussion		520	



There were **231 PD-L1** requests in 2020

Letterkenny University Hospital

Dr Gerry O'Dowd

Consultant Pathologist

Laboratory Directorate and Cancer MCAN aCD



Histopathology LUH Overall Workload 2020

P Code	Procedure codes	Cases	Specimens	Blocks
P01	Small biopsy	2601	3410	3631
P02	GI biopsy	2424	5577	5634
P03	Non biopsy Cancer resection	110	313	1896
P04	Non biopsy Non Cancer resection	1896	2180	5254
P05	CSF	36	36	0
P06	Non Gynae Cytology FNA	51	77	30
P07	Non Gynae Cytology Exfoliative	334	394	54
P10	Autopsy Coroner	141	141	2060
P11	Autopsy Other	0	0	0
Total	All procedures	7593	12128	18559

Pathology Cases Details 2020 (Data source: Pathology LUH)

Malignancy Cases		Cases Discussed at MDM	
Surgical	1727	Surgical cases	773
Non Gynae Cytology	75	Non Gynae cytology cases	10
Total Malignant Cases	1802	Total no. discussed/reviewed	783
Cases referred to the Division of Anatomic Pathology for testing/review/opinion/MDM discussion		783	

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

Intra-Departmental Consultation

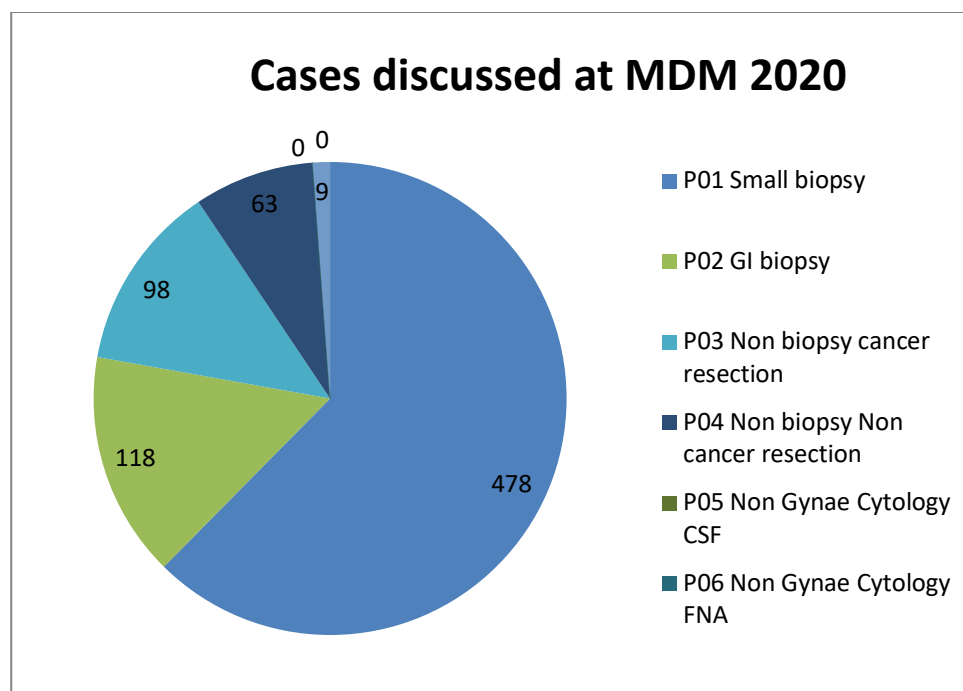
Histology (P01-P04)	10.18%	(716 cases)
Non Gynae Cytology FNA (P06)	21.57%	(11 cases)
Non Gynae Cytology Exfoliative (P07)	4.79%	(16 cases)
Inter-institutional Consultation	2.86%	(214 cases)
Cases received for review	0.01%	(1 case)
Cases referred for opinion	0.21%	(16 cases)

LUH Histopathology Cancer related testing

	No. of Cancer Related Tests
Major Cancer Resections	110
Breast Core Biopsies	383
Prostate needle core biopsies	56
Bone Marrow Trephines	226
Lung needle biopsies	87
Lymphnode needle biopsies	46
Soft tissue needle biopsy	105
Liver needle biopsy	57
Bladder biopsies	38
Immuno stains (Inc. Controls)	
Special stains	
TOTAL	1108

MDM cases discussed by procedural code 2020

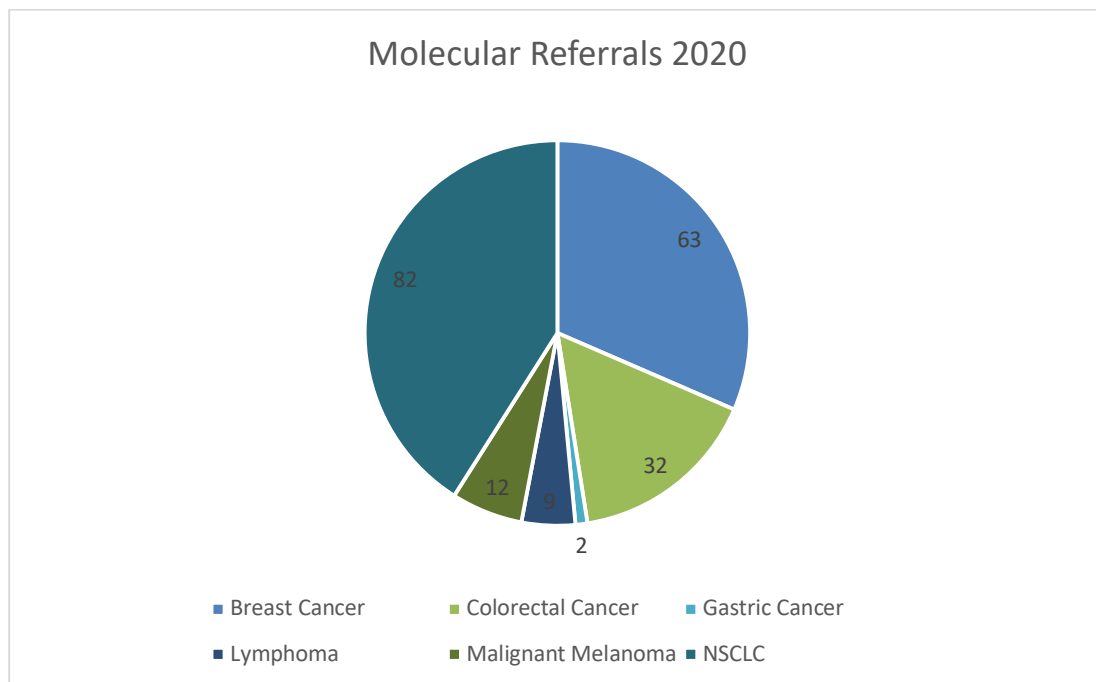
P code	
P01 Small biopsy	484
P02 GI biopsy	123
P03 Non biopsy cancer resection	98
P04 Non biopsy Non cancer resection	68
P05 Non Gynae Cytology CSF	0
P06 Non Gynae Cytology FNA	1
P07 Non Gynae Cytology Exfoliative	9
Total	783

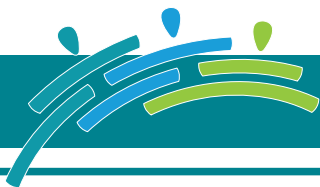


Molecular Service

Molecular Referrals 2020

Specimen Type/Mutation Test	2020 Total\Test	Cancer Diagnosis	2020 Total\Cancer
FISH	50	Breast Cancer	65
Oncotype DX	15	Breast Cancer	
KRAS	13	Colorectal Cancer	32
MSI	7	Colorectal Cancer	
MLH1 Methylation	0	Colorectal Cancer	
NRAS	12	Colorectal Cancer	
DDISH	2	Gastric Cancer	2
C-MYC	8	Lymphoma	8
BRAF	12	Malignant Melanoma	12
ALK	22	Lung Cancer	82
PD-L1	25	Lung Cancer	
ROS-1	12	Lung Cancer	
EGFR	23	Lung Cancer	





Professor Paul Donnellan

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



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.

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.

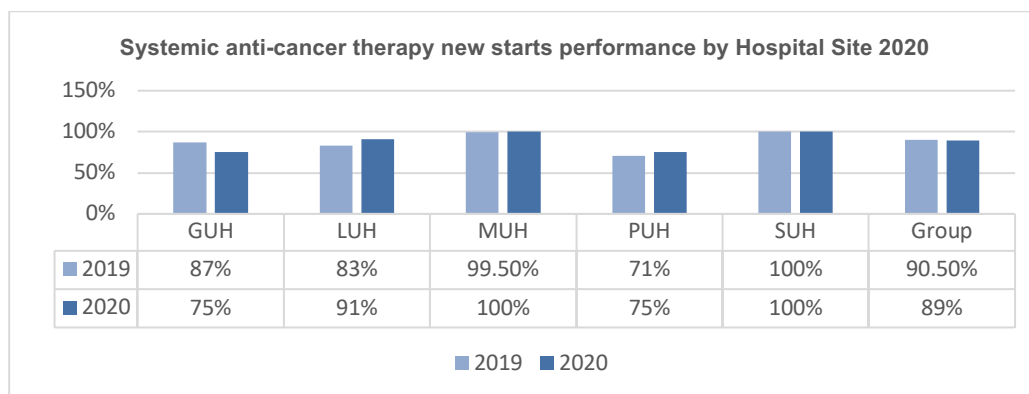
Eight Medical Oncology consultants lead the Saolta Medical Oncology across the Group, four located at UHG with sessions in both Mayo University Hospital and Portiuncula University Hospital. There are two medical oncologists located at Sligo University Hospital and a further two at Letterkenny University 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. 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.

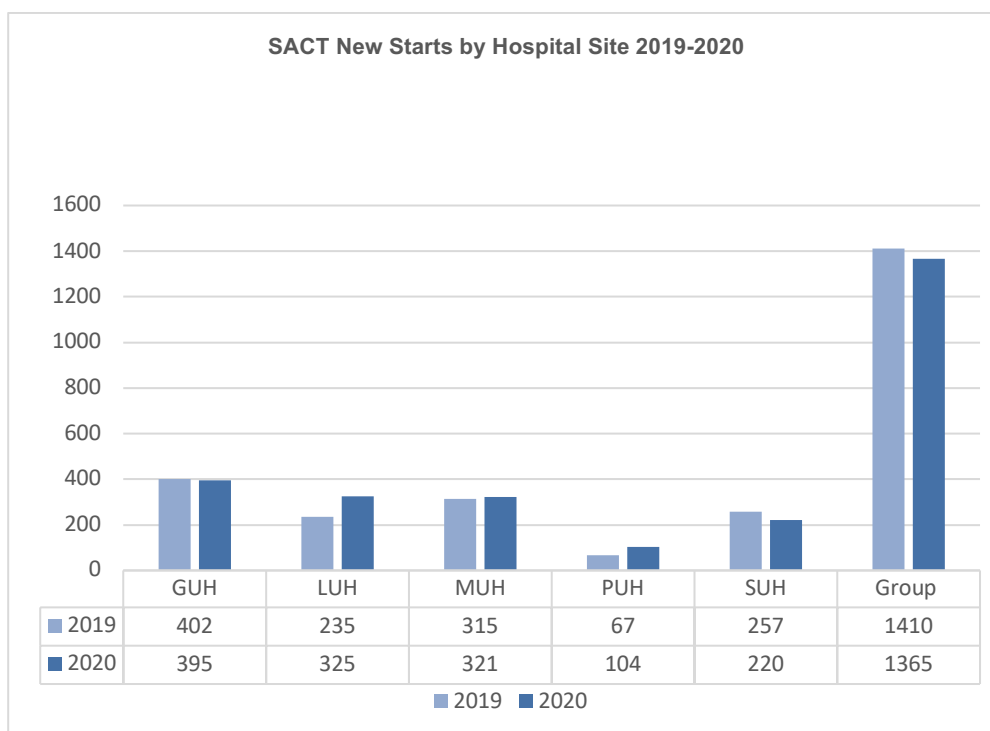
The challenges presented by COVID-19 were particularly evident when dealing with those requiring systemic anti-cancer therapy. The infrastructural constraints in our day ward in UHG in particular was the most critical issue as the pandemic emerged. In order to treat patients safely the day ward was extended into the outpatients department allow for adequate social distancing.

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. 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. This issue is becoming increasingly evident across all of the Haematology Oncology Day wards as demand exceeds capacity.

The tables below illustrate the KPI performance for New Systemic Anti-Cancer (SACT) starts for Saolta Group Hospitals





Medical Oncology Outpatient attendance New and Review 2019-2020

	2019	2020
University Hospital Galway New	850	708
University Hospital Galway Review	5657	3752
University Hospital Galway Total	6507	4460
Mayo University Hospital New	139	129
Mayo University Hospital Review	1616	1756
Mayo University Hospital Total	1755	1885
Portiuncula University Hospital New	39	54
Portiuncula University Hospital Review	814	483
Portiuncula University Hospital Total	853	537
Sligo University Hospital New	230	190
Sligo University Hospital Review	1787	1378
Sligo University Hospital Total	2017	1568
Letterkenny University Hospital New	347	314
Letterkenny University Hospital Review	1223	1242
Letterkenny University Hospital Total	1570	1556
Total all Saolta Group	13,552	10,006

Janice Richmond

ANP Medical Oncology



Oncology and Haematology Nursing in Letterkenny University Hospital

In 2020, the work of oncology/haematology nursing in Letterkenny University Hospital required innovative adjustment. Since the advance of the COVID-19 pandemic in March 2020, significant changes were required to be able to safely continue patient care. We are thankful of the efficient response that the nursing department was able to provide to the pandemic and on reflection; some adaptations expedited positive changes to patient care.

At the outset can we as a nursing team give our condolences to CNS Geraldine Mullan on the tragic loss of her husband and two children on the 20th August 2020. We are thankful that Geraldine returned to work and welcome her into the position of Acute Oncology/Haematology CNS. We congratulate her on this promotion and this innovative post has already improved patient care.

Congratulations to Caroline Clancy who took up position as a CNS Oncology in 2019 into a much needed role. Additional staff changes are anticipated as staff retire and are promoted however, this was the extent of changes in 2020.

With the advent of the COVID-19, the Oncology/Haematology Day had to adapt significantly to ensure social distancing in an environment already tight for space. To achieve social distancing and more importantly to improve patient care, the CNS's now perform the pre-education for cancer patients prior to commencing systemic anti-cancer therapy. This not only maintains CNS continuity in the patient's journey but increases capacity in the Day Unit. Furthermore, when changes were required by the pandemic, the Day Unit staff requested that the ANP Oncology perform virtual assessments on those who were on oral anti-cancer treatment, which immediately reduced footfall through the unit. With time, this evolved so that these individuals now have a hybrid approach to care, with a combination of virtual and physical reviews by the ANP depending on requirements for patient safety, need and preference. This is performed adjacent but external to the Day unit. This not only helps with Day Unit capacity but for patients who physically attend, it is an area convenient and accessible and is managed so that there is no waiting time for patients.

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. Commencement of this research was delayed in part due to the COVID-19 pandemic, but adaptations to care that was required for the pandemic has actually facilitated advancement of this research, which commenced in September 2020.

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.

The 'Moving on Initiative', which was a personalised self-management programme to improve physical and psychological health of cancer survivors, was completed and published in 2020 (supported by a research grant from the Irish Cancer Society). Funding for a co-ordinator for rollout of this has been obtained (from the Irish cancer Society) and we await this post being appointed. 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. This is an exciting initiative and in the midst of a global pandemic, increasing workload and ongoing challenges in the HSE it is important to keep striving to improve patient care.

Mayo University Hospital

The Oncology/Haematology service at MUH continued to be very busy throughout 2020 with the added challenges of COVID-19. The following outlines the activities and changes to service during the year.

In total 4029 patient day ward attendances were recorded by HIPE for the administration of SACT's and supportive therapies. The total combined number of haematology and oncology outpatients was 2552 (1885 Oncology, 667 Haematology). These reviews were a combination of attendances and virtual which were done via phone consult to reduce hospital attendance.

633 in-patient reviews took place by the CNS liaison nurse. This number was reduced from previous years due to the restrictions on visiting patients during COVID-19. On average between 5-10 inpatients in MUH weekly were under active oncology or haematology management. 47 of these were new referrals to the service from inpatients.

Due to COVID-19 and in line with NCCP recommendations a new patient entrance was established which was nearer the day ward and avoided transfer through the main hospital entrance. This involved the ward manager and hospital management making some logistic and structural changes to allow this process to be implemented seamlessly to avoid any disruption for patients and families.

By relocating the ANP's office off the unit a single patient treatment room was created where patients could be isolated if infection was suspected. The implementation of longer opening hours from 0830 to 1930 Monday to Friday was introduced to decrease overcrowding and facilitate social distancing. This was complemented by an increase in the nursing WTE with a new staff nurse joining the team.

The implementation of the National Clinical Information System, NCIS, which began in 2019 continued in 2020, although at a slower pace than planned due to COVID-19. A staff nurse within the unit was allocated dedicated hours to the process that greatly enhanced the rollout.

The NCCP *time to treatment* KPI, which is the number of patients referred who commence treatment within 15 working days of referral, has a 95% target. MUH achieved above this level in 2020. In total for NCCP's *new treatment starts* KPI there were a total of 321, and 285 from cycle 1 onwards (blood products, bisphosphonates etc. are not included in this number). Delay in CT scan timing continues to be a major concern for the service and this problem was compounded during COVID-19. A second CT scanner is the only solution to this ongoing problem.

The KPI for breast cancer patients receiving adjuvant treatment post-surgery are returned to GUH and sent from the group to NCCP. 17 patients commenced adjuvant treatment for breast cancer. Many other patients received neo-adjuvant treatment. The recommendation by the NCCP of patient pre-assessment via phone consult on day before treatment was introduced very successfully and is ongoing.

The nurse led oral SACT clinic set up in 2019 in response to an identified service need due to the increased number of oral SACTs and growing pressure in the day ward for spaces and treatment slots continued. This clinic takes place every two weeks and is co-ordinated by the Oncology CNS and ANP. The cohort of patients attending thus far includes those with diagnoses of prostate, colorectal, renal and hepatocellular cancer.

In 2020, there were 248 reviews, 17 of which were new patients compared to 92 reviews in 2019.



Pictured from left to right Emer Murphy SN, Yvonne Ruane SN, Anne Hussey SN, Deirdre Allen CNM2, Mary Hannigan ANP, Madeline Gallagher CNS, Anne Campbell CNS, Bernie Kelly Haematology CNS and Sharon O'Malley Pharmacist.

Sligo University Hospital

The Haematology / Oncology Service at Sligo University Hospital (SUH) reports a very active year in 2020.

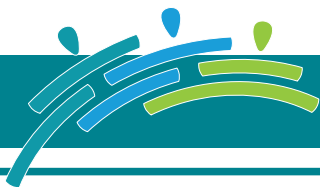
Our Haematology / Oncology day ward treated a record number of patients, and our 16 bedded inpatient unit reflects a high level of activity.

Two Consultant Medical Oncologists lead the Haematology / Oncology service at SUH: Dr Michael Martin and Dr Ala Yousif, and two Consultant Haematologists: Dr Andrew Hodgson and Dr Aine Burke. Two Advanced Nurse Practitioners support the Consultants: Anne Mullen (Oncology), and Geraldine Walpole (Haematology). The nursing team also includes Clinical Nurse Specialists, Clinical Nurse Managers and Research Nurses. This year we secured an Acute Oncology Nurse to support the service. There are also highly experienced nurses working on the day ward / inpatient unit. SUH has eight nurse prescribers and one (nurse) x-ray prescriber.

Specialist pharmacists from the aseptic unit also support the Systemic Anti-Cancer Therapies programme.

The Haematology / Oncology MDM's link with various disciplines in UHG including Breast, Respiratory, Gastrointestinal, Genitourinary, and Haematology. These MDM's continue to grow in numbers, and we are proud to say that we are delivering on our KPI's and continue to have no waiting lists for systemic anti-cancer therapy (SACT). Our KPIs for new start chemotherapy remain consistently at 100%.

Building links with our community partners continues. We work closely with the Sligo Cancer Support Centre, who offer our patients a counselling service and weekly Bio Energy therapies (inpatient unit). In conjunction with the Sligo Support Group, we have also set up a Myeloma Support Group. Our local charity SHOUT continues to grow, providing ongoing support for patients and families.



Multidisciplinary Team Meetings

Ms Cathy Walsh
MDM Co-ordinator



The primary purpose of the multidisciplinary meeting (MDM) is to ensure best practice and to standardise patient care. 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.

Multidisciplinary team meetings are considered the hallmark of high quality patient centred care, providing personalised treatment plans for all cancer patients. The National Cancer Strategy 2017 - 2026 that outlines the direction and focus for cancer services in Ireland in the coming years drives multidisciplinary working.

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 one of the busiest in the country. An extensive schedule of meetings are held on a regular basis covering 12 cancers specialties with an additional meeting for combined medical oncology.

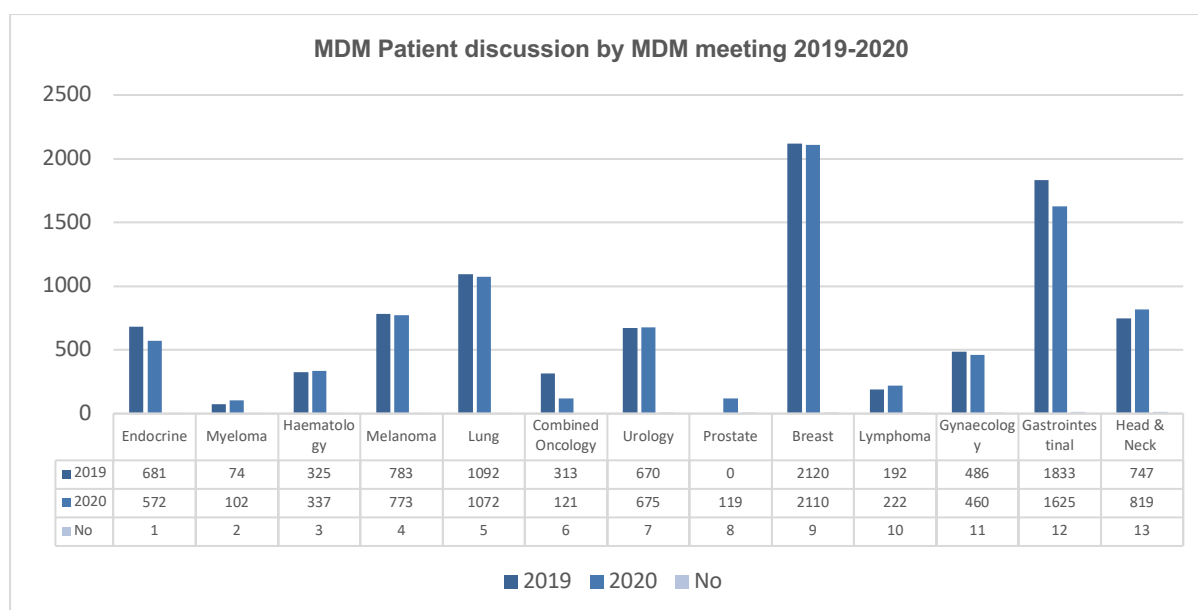
The National Cancer Information System was piloted in UHG in 2020 and the MDM module was introduced initially within the Head and Neck MDM, which went live in October 2020, and has been successfully implemented.

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. Due to the need for social distancing early in 2020 the MDMs were moved to a virtual platform ensuring all members of the team could participate in a safe co-ordinated manner.

The team would like to take this opportunity to thank Brid Gavin O'Connell for her service to the MDM team over the years and wish her well in her new role.

As can be seen from the table below the MDM programme continued at a consistently high level despite the pandemic.

The following table shows the MDM activity for 2020. There were a total of 9,316 patient discussions in 2019 and 9,007 in 2020.





Olive Gallagher

Director of Nursing, Saolta Cancer MCAN



2020 was a significant year for nursing on many fronts: we saw the publication of the first State of the World's Nursing report and the WHO designated it as 'the Year of the Nurse.' This was not only in honour of the 200th anniversary of the birth of Florence Nightingale but also in recognition of the global contribution of nursing to health and well-being.

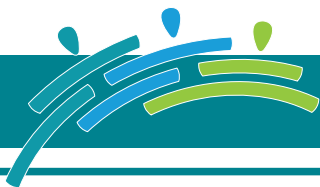
Who could have known the challenges that were ahead in 2020 with the COVID-19 pandemic and the leadership nursing would demonstrate throughout the year.

The cancer nursing profession displayed both professional and personal courage in their dedication to care of cancer patients during a time of uncertainty. Their endless resilience and ability to adapt in multiple ways demonstrated their care, compassion and commitment to delivering a cancer service in as safe an environment as possible to preserve patient outcomes in the short and long term despite the COVID-19 pandemic.

Many services were adapted including the development of a pre-assessment and triaging system to minimise the risk of contracting the virus in line with NCCP guidance. Shift patterns were altered to preserve staffing numbers and minimize potential exposure that could have resulted in the cessation of services, virtual clinics were implemented and careful scheduling of treatment times maximised patient safety at every opportunity.

2020 saw the development of an Acute Oncology Service in five hospitals across the Saolta Group due to the vision and support of the NCCP in the allocation of five Acute Oncology/Haematology CNS roles. The primary focus of these roles was to provide cancer patients with a dedicated support for acute treatment related toxicities and where possible avoid the need for ED attendance. 2020 also saw the allocation of a CNS in Psycho-oncology for the Cancer Centre in GUH, the first step in building the psycho oncology services in GUH.

While 2020 brought many challenges, it also demonstrated resilience, ability to respond and commitment to caring for our patients. Much of the knowledge gained during the COVID-19 pandemic continues to inform our practice and ways of working.



Dr Dympna Waldron

Consultant Palliative Medicine
Lead Clinician



Galway University Hospitals

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).

During the COVID-19 pandemic we continued to deliver a 24/7 liaison palliative care service to over 1,200 patients referred to our UHG service and 24/7 telephone support to palliative care patients in PUH and RUH. In response to the pandemic, we re-structured our clinical team to provide dual site cover to Oncology patients in the Galway Clinic and continued seamless clinical cover to all other medical, surgical and paediatric patients in UHG. During this time, we developed and delivered targeted educational initiatives for medical and nursing staff in UHG and MPUH. We published our clinical experience of providing end of life care during the restrictions of COVID-19. We ensured regular staff support and debrief to protect against burnout. We ran an Intern education workshop on end of life care and communication skills and remained actively involved in hospital educational initiatives.

During 2020, we received 1210 new referrals. 100% of patients were seen within two days of referral. 880 (72.7%) of these patients were new to our service and 572 (47%) of patients referred had a diagnosis of malignancy. 30% of our patients died during admission, 46% were discharged to community palliative care for ongoing clinical care at home and 8.7% of patients were transferred to the Galway Hospice Foundation Inpatient Unit.

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*)

2020 Activity

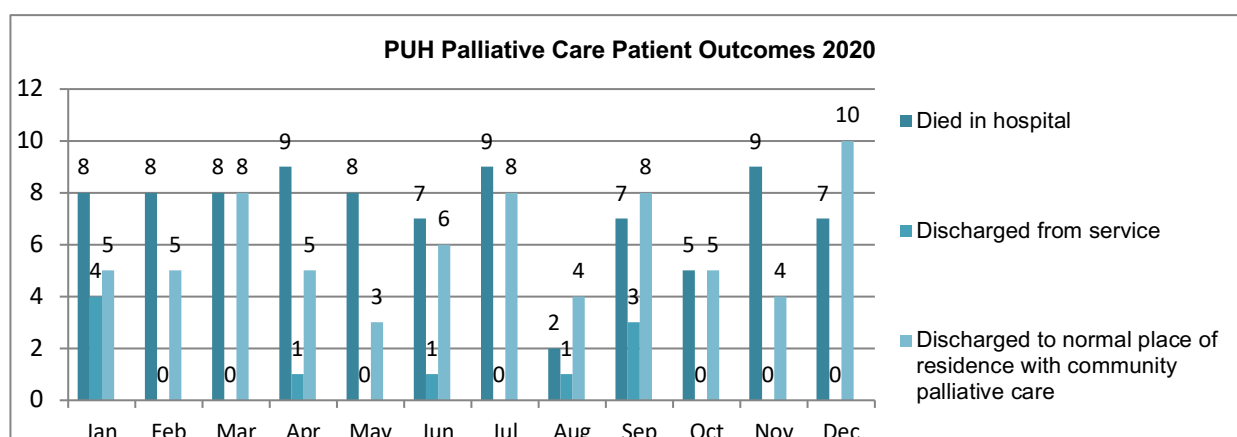
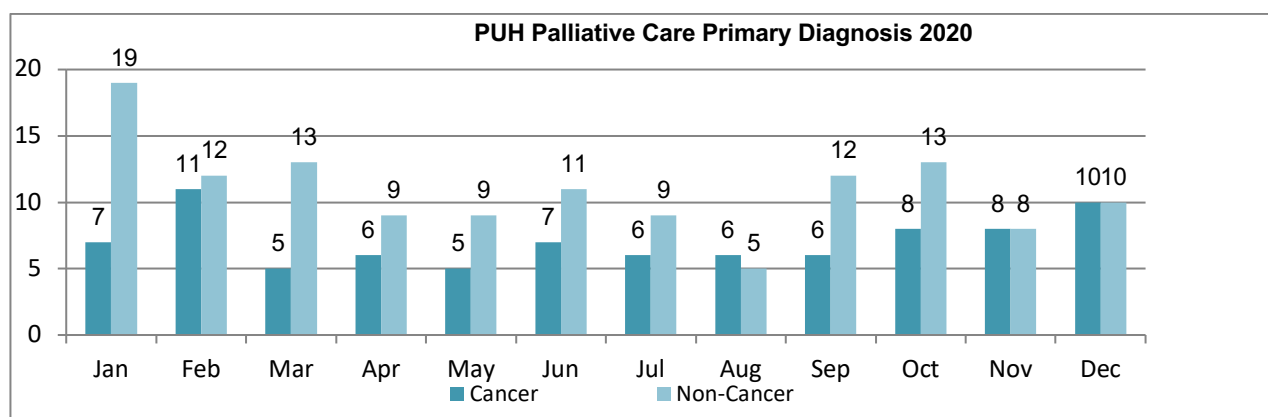
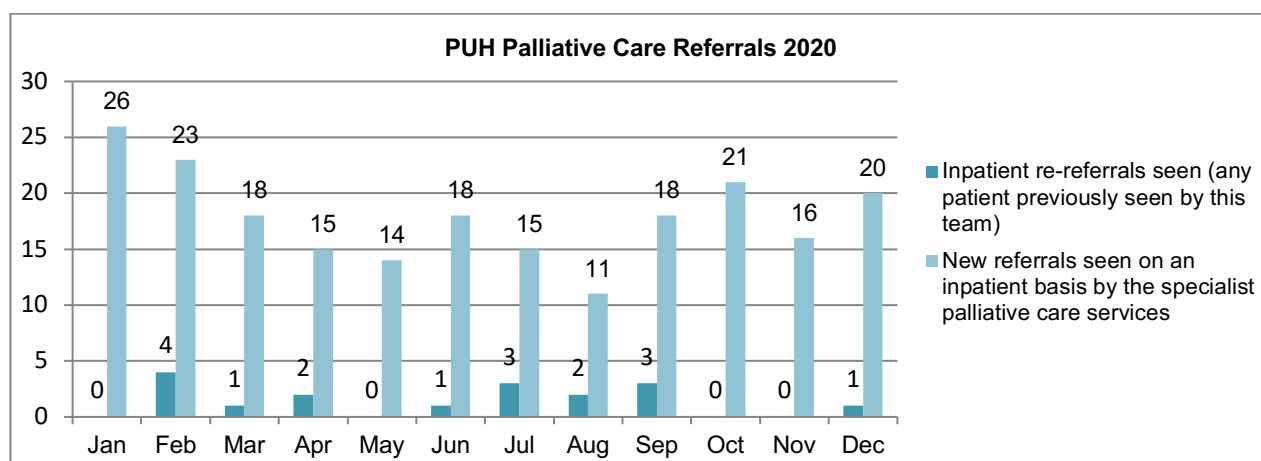
	UHG	RUH	PUH
Total Referrals	1210	133	232
New Referrals	880	116	215
Malignant Diagnosis	572	74	85

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. In 2020, the service was attended by Dr Sharon Beatty, Dr Kathleen Cronin, Helen Ely CNS and Barbara Flynn CNS.

In 2020 there were 232 referrals to the specialist palliative care service, 215 patients were new to the service. 85 patients referred to the service had cancer. Of the patients referred, 37.5% died in hospital and 31% were discharged to community palliative care services for ongoing care.

During the COVID-19 pandemic, we adapted to increasing service demands and changes in service provision. We supported PUH staff in the provision of end of life care planning, participated in hospital hub board meetings for inpatients and developed and delivered targeted teaching sessions for medical and nursing staff. We developed and circulated a bereavement pack for bereaved families during COVID-19 including pieces from chaplaincy, palliative care and hospital staff.



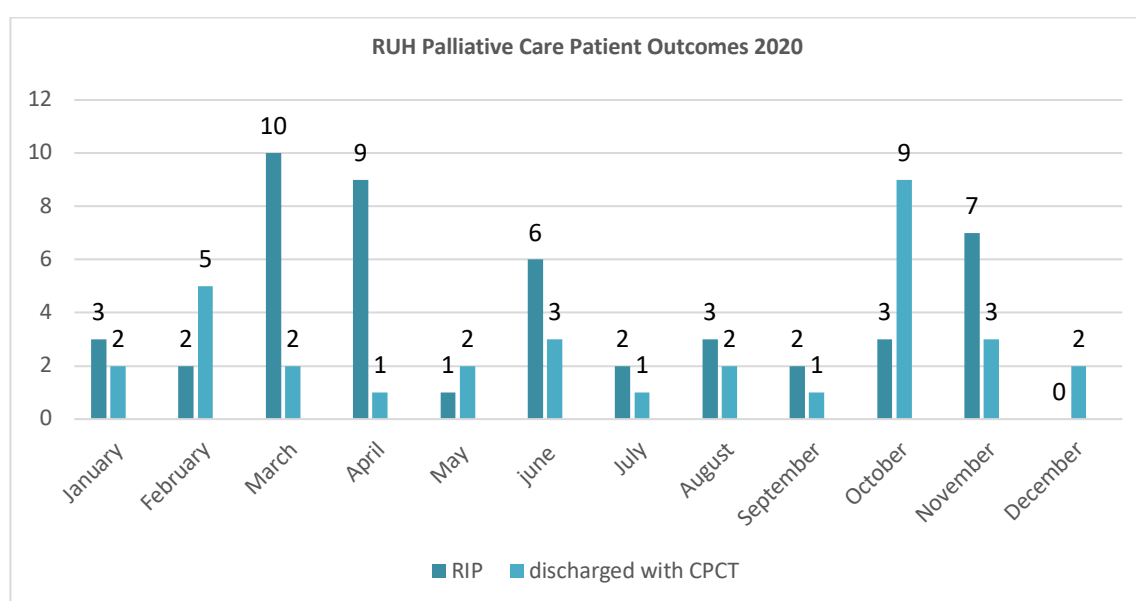
Roscommon University Hospital

The RUH Palliative Care Service continues to strive to deliver optimum symptom management and enhanced quality of life for patients in a setting close to home. Our CNS Geraldine Keane delivers the service with medical support provided by Dr Eileen Mannion and Professor Dymphna Waldron. The 'turning of the sod' for the eight bedded Roscommon Palliative Care Unit took place on 10 January 2020. The build has now been completed with a planned opening date in early 2022.

The Irish Hospice Foundation 'Final Journeys' Workshop took place in RUH on 11th March 2020. This one-day training workshop aims to improve the delivery of end-of-life care amongst all hospital staff. It focuses on enhancing the communication skills of participants to enable them to be more competent delivering end-of-life care and supporting patients and their families.

Referrals to RUH Palliative Care Service 2020

There was 133 referrals to the RUH Palliative Care Service in 2020. Of the total number, 116 were new patients and 17 were re-referrals. 74 patients (55.6%) had a cancer diagnosis and 59 patients (44.3%) had a non-malignant diagnosis.



Pharmacy: Oncology

eHealth initiative (NCIS)

University Hospital Galway became the first hospital in Ireland to go-live with both National Cancer Information System (NCIS) i.e. the MDM and treatment arms. The first patient was treated on November 19, 2019. By the end of 2020, several therapies were routinely administered through NCIS. As far as MDM is concerned, head and neck lead the way locally and nationally. They were swiftly followed by gynaecology, haematology, lymphoma and myeloma. By the end of 2020, UHG remained the only hospital in the country utilising both MDM and treatments systems for patient care. UHG staff contributed to the national project in project management, and as members of the national implementation and user-group teams.

Pharmacy functions

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

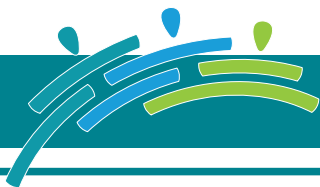
A technical compounding (aseptic preparation). All medicines are aseptically prepared onsite to a prescriptive order in our Pharmacy Aseptic Services Unit (PASU) assuring the microbiological integrity of the final preparation. The oncology nurse is therefore protected from any unnecessary drug manipulation 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 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 €5,000 to €7,000 per month).

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



Dr Cormac Small

*Consultant Radiation Oncologist
Lead Clinician*



In 2020 the department had to make major adjustments to how it provided its services due to the COVID-19 pandemic. These changes allowed the department to operate to full capacity and provide the same level of care to patients on treatment. There was a small reduction in the number of patients referred for treatment due to the Pandemic.

Where possible outpatient clinics became virtual. For in-person clinics all patients and those accompanying them were assessed for covid symptoms before entering the department. Social distancing and mask wearing for patients and staff was introduced. Policies and work instructions were developed in line with national guidelines for covid positive patients, close contacts and patients with covid symptoms. Working from home, where possible, was introduced rapidly for all professions and new ways of working to facilitate this change in practice were developed.

The Deep Inspiration Breath Holding for left sided breast treatments that was rolled out in 2019 had to be halted as it was an aerosol generating procedure. However, in spite of Covid-19, new initiatives did continue in 2020: the gynaecological brachytherapy cylinder treatments moved to being Radiation Therapist led with the support of the Radiation Oncologist. The department also moved from the Pinnacle planning system to the Monaco system for treatment contouring.

Work continued on 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.

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 attended virtually, and likewise for different training events, workshops, and seminars.

Radiotherapy nursing remained very active in 2020 with on treatment reviews, telephone consultations, ambulatory care which included intravenous fluids and blood product replacement. Increased complexities of treatments have increased ambulatory care activities which in turn minimise hospital admissions. 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 continued to grow.

The number of patients whose interval from ready to treat to date of first fraction of Radiotherapy as per NCCP KPI was 86% for 2020.

In addition to clinical services, the department is a centre for national training for oncology nursing, radiation therapists, clinical dietetics, speech and language therapists, medical physics and radiation oncology specialist trainees. Further posts for Galway from the Workforce Plan for Radiotherapy were released in 2020. Despite the challenges posed by COVID-19, the radiotherapy department continued to treat patients throughout 2020.

Activity	2019	2020
New referrals to Radiation Oncology	1462	1370
Review Clinics (UHG, SGH, MGH & Portiuncula)	3852	3905
Virtual clinics (Sept- Dec 2020)		220
Registered Advanced Nurse practitioner Virtual follow-up, telephone clinic	1558	1853
RANP Erectile Dysfunction Clinic- new referrals	145	293
Patients treated with EBRT (External Beam Radiation Therapy)	1054	1042
Patients treated - Orthovoltage	28	42
Patients treated - Brachytherapy Prostate Seeds	39	27
HDR-Brachytherapy	67	20
Ultrasound Biopsy (Requires Anaesthetics)	39	44
Number of Fractions Treated on LINACS - EBRT	20422	17976

Patients treated – Brachytherapy Gynae

Description	2019		2020	
	Patients	Activities	Patients	Activities
HDR Intravaginal (15312-00 No Anaesthetic Requirement)	27	68	21	55
HDR Intrauterine (15304-00 Anaesthetic Required)	0	0	0	0
HDR Intravaginal & Intrauterine (15320-00 Anaesthetic Required)	18	54	7	21
	45	122	28	76

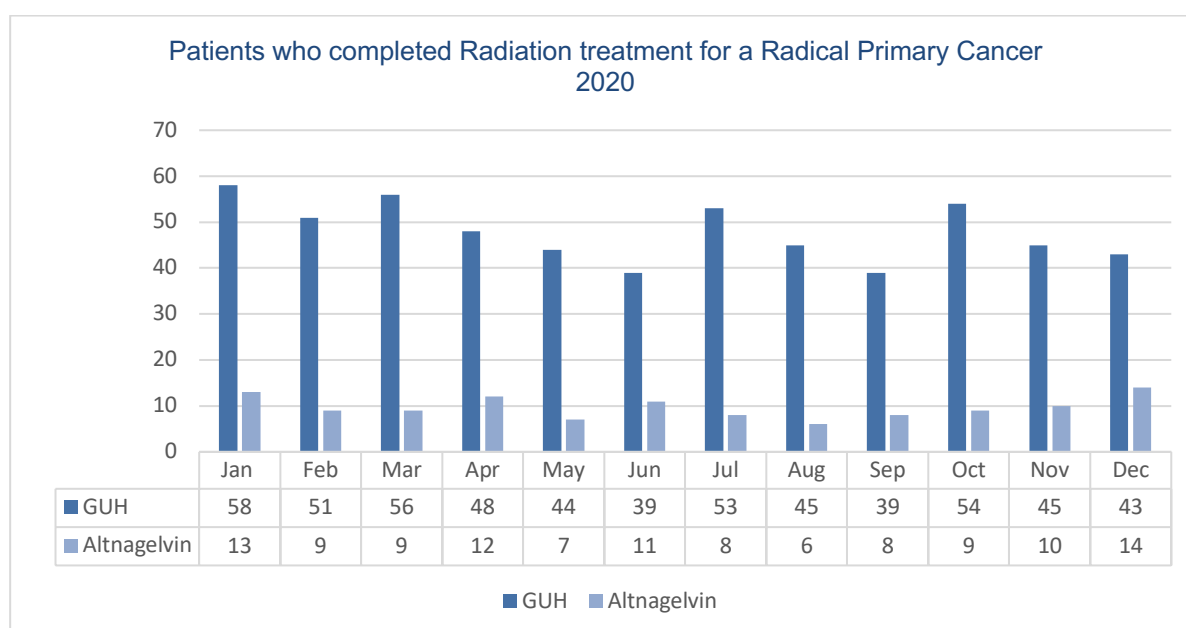
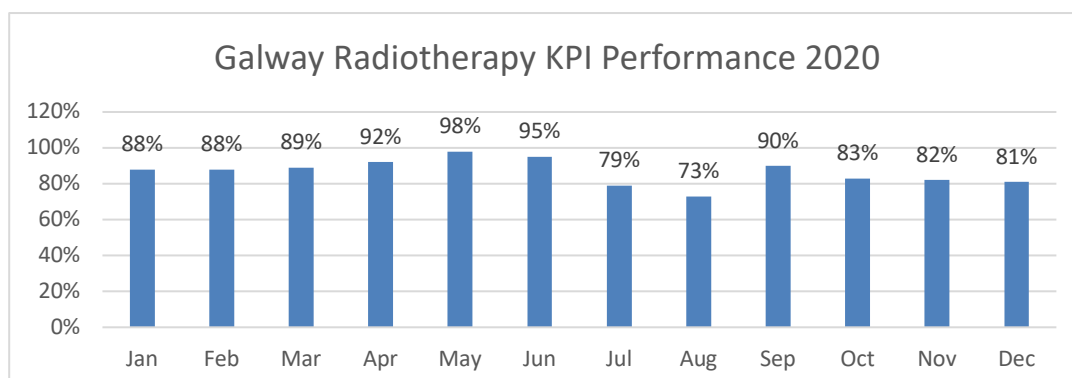
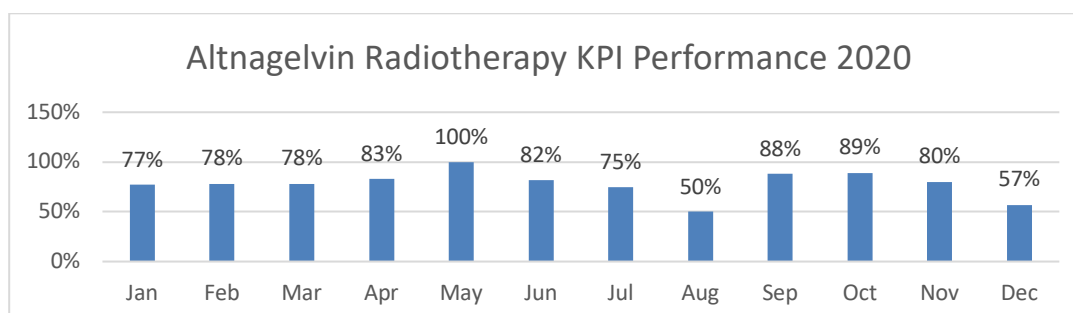
* RANP phone follow up clinics not counted in Review Clinics

**2019/2020 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

**Monthly SUH virtual clinic was run by RANP and Consultant, on average 25 patients were reviewed.





Dr Declan Sheppard
Radiology Clinical Director



2020 was a challenging period for Radiology at GUH as it was for the healthcare sector worldwide. Overall Radiology GUH activity continues to rise despite COVID-19, with a total of 120,961 in 2020. Our challenge will be to increase capacity to match demand and reduce waiting times for our patients across the Hospital Group. Matching capacity to demand will continue to be a key focus in 2021, in particular for MRI, CT, Ultrasound, Intervention Radiology and Breast services.

Key Challenges

- Increase capacity to match demand and reduce waiting times for our patients.
- Working alongside COVID-19 and the continual impact of restrictions impacted greatly on our capacity to deliver Radiology Services across the Saolta University Health Care Group
- Unprecedented absenteeism due to COVID-19 close contacts/positive COVID results
- Increased inpatient/outpatient waiting lists
- Increased on call/inpatient services
- Radiology Staffing levels across **all disciplines** remain stretched
- Continue to explore option to outsource activity to deal with service demands
- Increase access to Radiology services to GP's across Saolta Group

Galway University Hospital Radiology Activity 2020

Total Examinations	120,961
Total Patients	97,640



Health & Social Care Professionals



Grainne O'Byrne
Dietetics Manager

Clinical Nutrition & Dietetic Service to Haematology Oncology and Radiotherapy

Patients with cancer are among 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.

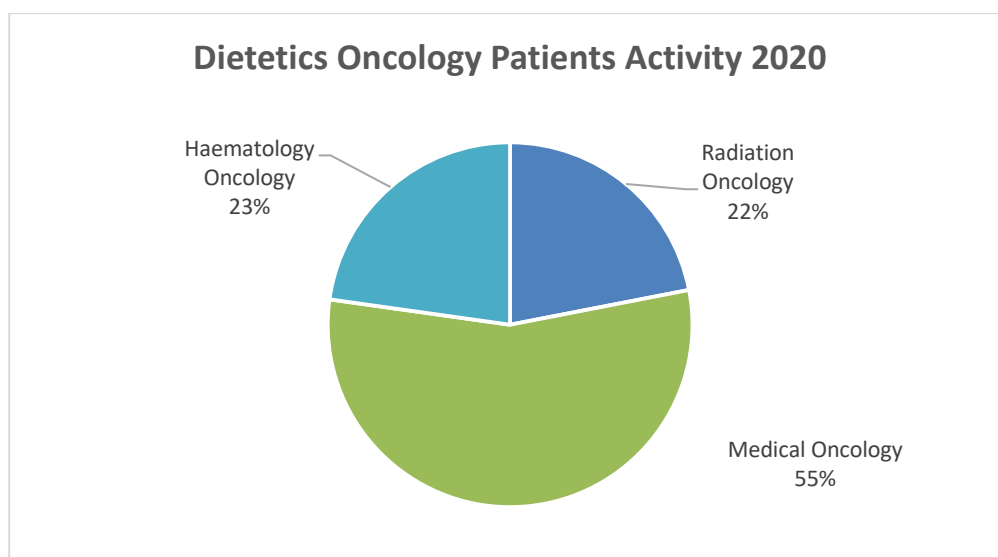
In 2020 there was a 30% increase in dietetic referrals with 491 patients referred through the medical oncology, haematology and radiation oncology teams for nutritional assessment and support: 65% Oral nutrition support, 12% enteral nutrition support, and 23% parenteral nutrition support.

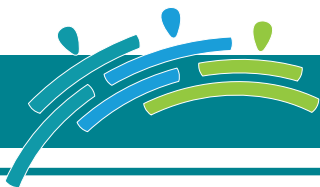
Achievements in 2020

The Clinical Nutrition and Dietetic Service continued to provide quality care to patients, despite the COVID-19 pandemic including:

- Ongoing multidisciplinary working to optimise delivery of patient care; Dietitian outpatient clinics were increased to twice weekly due to higher demands of head and neck cancer patients, and to allow for nutritional assessment and development of a nutrition care plan for lung cancer patients identified as at risk of malnutrition.
- Dietetic telephone review clinics were commenced to correspond with consultant telephone review clinics.
- Dietitian converted to full electronic documentation on MOSAIQ, allowing for increased efficiency of working.
- Extended role of dietitian in the management and care of gastrostomy tubes.

Referral breakdown by Specialty 2020



**Ciara Breen**

Interim Occupational Therapy Manager in charge III

Elaine Feely

Senior Occupational Therapist in Radiotherapy & Radiation Oncology



Although there continues to be no designated Occupational Therapist for Oncology in GUHs, 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 position. 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 outpatient input.

Occupational Therapy interventions in the inpatient 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 Primary, Community and Continuing Care (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.

Outpatient 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.

Service & Professional Development in 2020

- 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 PCCC in order to provide a streamlined pathway, and to optimise referral processes among services.
- An MDT Survivorship programme was piloted among lung cancer survivors in 2019/2020, 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.

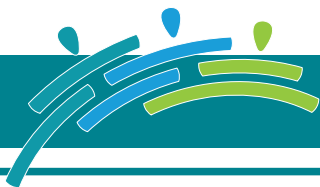


Pamela Normoyle

*Health Ireland Lead, Galway & Roscommon University Hospitals
Galway University Hospitals*

Summary of 2020 health and wellbeing activity

Actions	Outcomes
3.0 Health Literacy	<ul style="list-style-type: none"> Guiding tool established using the European Clear Communication index. All written communication leaflets are NALA approved.
3.2 Implement Self Care Programmes	<ul style="list-style-type: none"> Implementation of Healthcare Behaviour Change model "Making Every Contact Count". Type 1 and Type 2 Diabetes Adult Education sessions. COPD clinics in line with National framework. Referral to cardiac rehabilitation programmes for all cardiac risk patients. Prostate cancer information evenings- survivorship programme.
3.3 Patient Advocate Liaison Service	<ul style="list-style-type: none"> Provision of general information to patients and families. National Patient Experience Survey Supporting butterfly scheme, with the aim to improve patient experience of clients with dementia in acute hospital settings. Supporting roll out of #hellomynameis campaign.
4.2 Tobacco	<ul style="list-style-type: none"> Recruit new smoking cessation officer for GUHs. Links with National Tobacco Office around key deliverables in 2020. Free NRT offered to HSE staff to support Quit attempts. Introduction and promotion of CHO West Smoking Cessation Service. Complimentary online, text and phone support from dedicated Health Promotion staff.
4.3.3 Nutritional Standards	<ul style="list-style-type: none"> Patient menus reviewed in line with National policy on food and nutritional care in hospitals. New patient menus established and implemented on both sites.
4.3.4 Calorie Posting	<ul style="list-style-type: none"> HSE calorie posting policy implemented in GUH Breakfast and snack items implemented in Merlin Park. Awaiting implementation of lunch items.
4.3.4 Vending	<ul style="list-style-type: none"> HSE Healthy Vending policy implemented on both sites
4.3.5. Nutrition Assessment	<ul style="list-style-type: none"> Nutrition Screen tool implemented in GUHs. Protected mealtimes established Red Tray initiative continues
4.4 Active travel	<ul style="list-style-type: none"> HSE Steps to Health (5 week walking challenge) Continued promotion of active travel options, including www.hospitalwalks.com website. Staff survey on Active travel options completed in association with the NTA. Healthy Ireland committee at GUHs in the process of implementing Key deliverables identified in travel survey. Weekly staff virtual Pilates classes. Funding received from the NTA to support development of additional bike shelters in UHG and MPUH. Weekly staff virtual Pilates classes.
4.7 Breastfeeding	<ul style="list-style-type: none"> .5WTE currently in place. Annual report for 2019 submitted to national BFHI office. On line awareness day on benefits of breast feeding as part of world prematurity day. On line Parent Education sessions provided by dedicated maternity staff. Virtual antenatal breastfeeding workshops facilitated.
4.9 Positive Mental Health	<ul style="list-style-type: none"> Promote awareness of supports available & information on positive mental health, stress, addiction and other mental health issues for staff. Digital communication monitors installed in staff canteens in UHG and MPUH, which facilitate the delivery of Health and Wellbeing information to HSE staff. A cohort of staff in GUHs are currently undergoing training in mindfulness & stress management. HSE Webinar "Mind Your Wellbeing" provided by Health Promotion and Improvement staff. virtual choir events promoted as part of National HSE Health and Wellbeing events.



Catherine O'Sullivan

Physiotherapist Manager in Charge III UHG

Fionnuala Ginty Senior Physiotherapist

Miriam Flatley Senior Physiotherapy

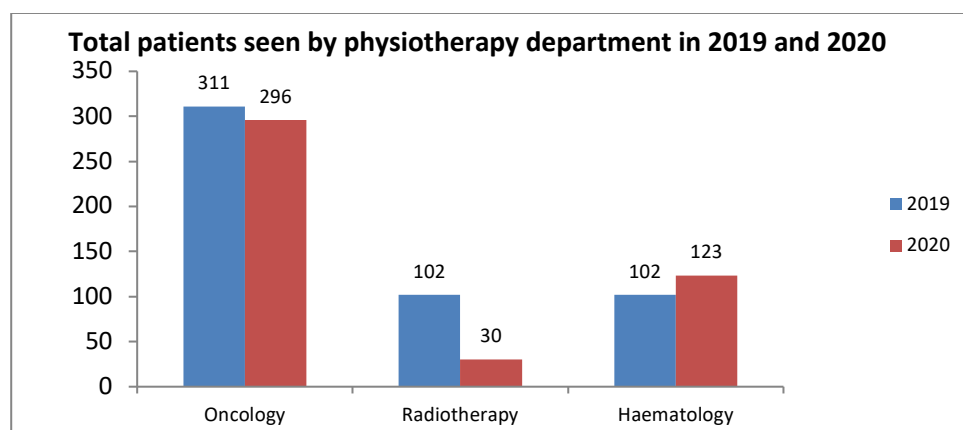


Physiotherapy plays a key role in the holistic management of patients throughout the cancer journey. The primary goal of rehabilitation is to assist the patient in achieving maximum physical and psychological functioning within the limits imposed by disease or treatment. There is widespread evidence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

2020 was a particularly challenging year due to the COVID-19 pandemic. It necessitated reorganisation of outpatient appointments including virtual delivery of service, reorganisation of inpatient service delivery to limit footfall onto wards. This had a particular impact on the delivery of physiotherapy, and on the capturing of activity, to Radiotherapy patients.

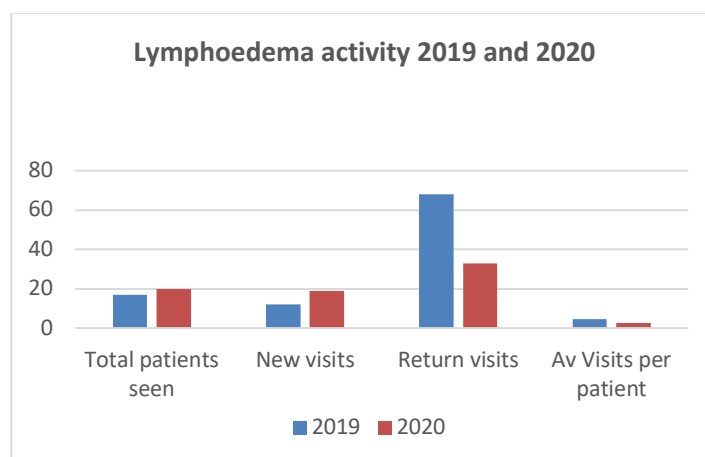


Lymphoedema

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

COVID - 19 also had an impact on the delivery of lymphoedema services. While there were more patients referred to the service in 2020 the average number of treatments per patient was almost halved.



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.

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

Lung Cancer

Niamh Duignan
Senior Physiotherapist Chronic Respiratory



International studies have shown that enhanced recovery after surgery (ERAS) programmes reduces 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 year on year-187 patients availed of the service in 2020, with the number expected to continue to grow in the coming years.

A key need in this area is the development of a Lung survivorship programme. We ran a very successful multidisciplinary pilot in 2019 with the majority of physical outcomes measured showing clinically significant improvements. Quality of life measures were largely positive including excellent feedback from our focus group.



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.

Equal access to physiotherapy post breast Surgery

This project was completed as part of the QI in Action programme in GUH. Following patient feedback highlighting a lack of physiotherapy we decided to undertake a quality improvement project, as part of the QI in Action programme. Gaps in service were identified through data collection from June-Sept 2019. The intervention consisted of the creation of a new leaflet and video with up to date evidence based advice. This ensured that both day case and overnight breast patients could access physiotherapy in a more innovative form. The video has been made available on the Saolta YouTube channel and can be accessed on www.bit.ly/2TclGNY



Prostate

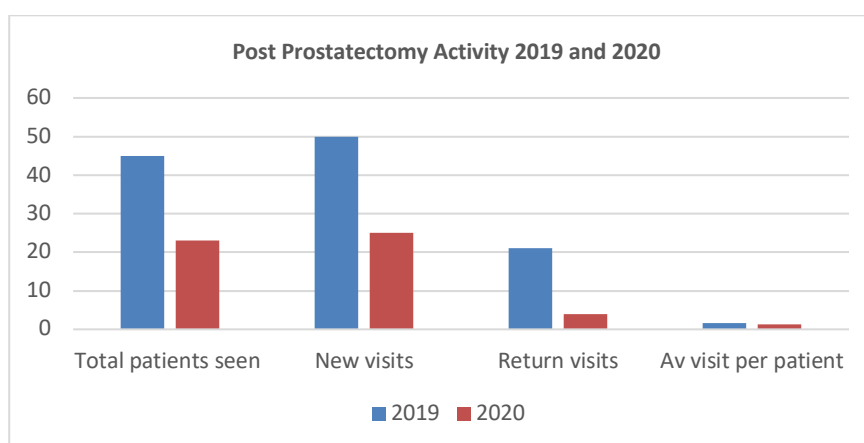
Thomas Samuel

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 pathway 2018 reported that 68% of men reported urinary incontinence. This has a major negative effect on quality of life in terms of mental, 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 for 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 the Prostate Survivorship CNS and Physiotherapist 6 weeks post reviews patients from Galway, Mayo, Roscommon and Sligo jointly operatively. This clinic runs once a week for 2 hours on a Wednesday afternoon.



Colorectal

Deirdre O'Dowd

Clinical Specialist Physiotherapist in Critical Care



Physiotherapy provides a limited service to colo-rectal surgery patients, primarily at the peri-operative and immediate post-operative phase. 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. COVID-19 had an impact on the operation of the ERAS programme in 2020. Internationally ERAS is the standard minimum care provided to patients following colorectal surgery. Patients who follow an ERAS program have been shown to have reduced post-operative complications and shorter lengths 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 across UHG.

Rachel Macken, Senior Radiation Oncology Social Worker

Maire Lardner, Medical Social Worker, Medical Oncology

Patricia Luby, Medical Social Worker, Medical Oncology



The Oncology Social work team provide a safe, confidential and supportive environment where the patient can discuss concerns about their diagnosis and any other issues relating to his/her care. Oncology social workers are dedicated and passionate about helping people who are dealing with cancer and bring knowledge, skills and compassion to actively listen and provide a non-judgemental setting for the patient and their family to share their experiences.

This role can include:

- Assistance with practical, financial/legal issues.
- The social worker can 'sign-post' the person to the appropriate services within both the hospital and the community.
- Provide emotional support and counselling.
- Psycho-social Assessment and care planning
- Support the individual and family may need around adjusting to the illness, dealing with transitions and decision-making, communicating with family members, friends and health-care providers.
- Tailored support to the patient and family individual needs the social worker meets with the patient towards the beginning of treatment in order to work with, address any concerns, and develop a flexible care plan.
- Providing Knowledge of a wide range of support organisations, both locally and nationally.

There are less than three 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

Sandra Brandon, Senior Speech and Language Therapist

Ear, Nose and Throat and Maxillo-Facial Service Overview: 2020

While the COVID-19 pandemic during the early part of 2020 compromised surgical service delivery, the resumption of surgical oncology services from July 2020 onwards has provided a significant workload challenge, and offers suggestions for improvement in 2021.

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 Galway University Hospitals.

In ENT, dysphonia and dysphagia are very common complaints reported in ENT Outpatient 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 outpatient referrals. Clinically, this includes managing anatomical changes to the oral, pharyngeal and laryngeal areas, as well as managing physiological or functional changes. It also includes emotional and psychological support through what can be a difficult and scary oncology journey, which affects areas of daily life, which are nearly taken for granted. Speech Therapy attends weekly ward rounds for a more direct review of patients after operations and consultants' plans and prognoses.

In OMFS, the current in-patient and fledging outpatient service tends to be more oncology based: best practice guidelines from international professional bodies recommend the input from an SLT for speech, voice and swallow before, during, and after surgery and post-operative recovery. It is also worth noting that structural changes to oral cavity and facial features can be a life-long challenge for the patient, with resulting influence on SLT service provision. The ward rounds with OMFS remains a service goal. 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, Oral Maxillofacial 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 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. Input may include prevention, early detection and management of communication and/or FEDS disorders that may arise following either a diagnosis of cancer and/or secondary to chemo radiotherapy (CRT) treatment. Pathways to refine service provision for in-patients and outpatients with and without an oncology diagnosis are ongoing.

Service activity levels:

OMFS in-patient referrals

	2016	2017	2018	2019	2020
All consultants	26	28	29	32	30

ENT in-patient referrals

	2016	2017	2018	2019	2020
All consultants	48	35	19	36	25

Key priorities for 2021

- Intermittent phone support to patients post laryngectomy.
- COVID-19 pandemic impact on Laryngectomy training days.

Radiation/Oncology Service, overview

Service Overview

Dysphagia is a very common complaint of head and neck cancer patients and can exist before, during, and after chemo radiotherapy. It leads to nutritional deficiency, weight loss, and prolonged unnatural feeding and has a major potential risk for aspiration. This has a significant negative impact on the patient's entire quality of life.

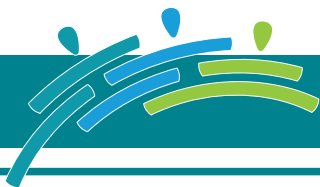
The Radiation Oncology SLT service is a specialised service established to improve communication and feeding, eating, drinking and swallowing (FEDS) outcomes for patients undergoing chemo radiotherapy treatment. This is achieved through prevention, early detection and management of communication and/or FEDS disorders that may arise following either a diagnosis of cancer and/or secondary to chemo radiotherapy (CRT) treatment. An inpatient service is provided to patients with a diagnosis of cancer. However, the outpatient service is restricted to patients with a diagnosis of Head and Neck Cancer.

Service activity levels

- There were 100 outpatient referrals in 2020 that equates to 500 contacts.
- Inpatients seen (this includes Radiation Oncology, medical oncology and haematology) were 185.



Cancer Support Groups

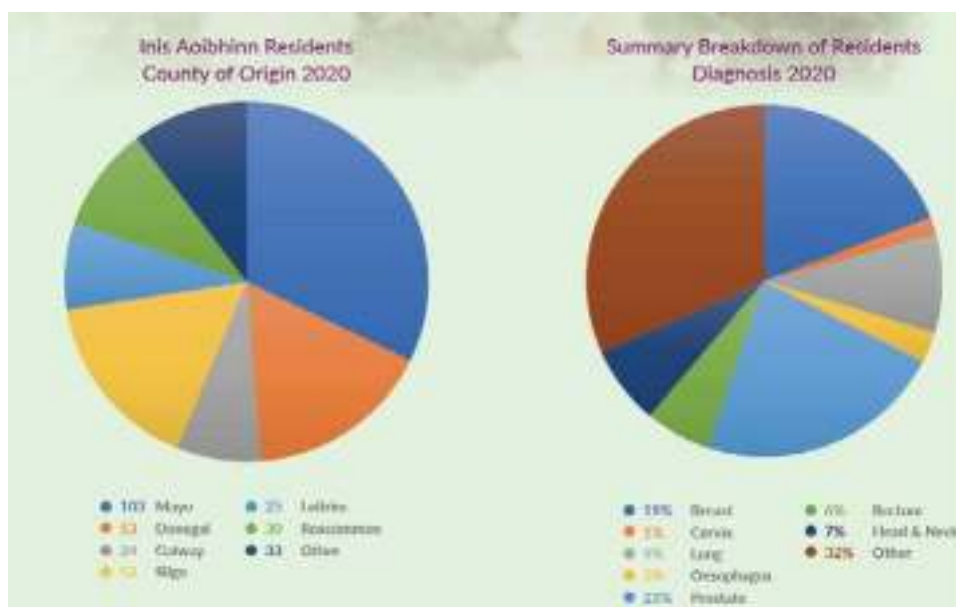


Cancer Care West is a registered charity, dedicated to supporting cancer patients and their families in the west and northwest of Ireland. The Charity's principal aim is to enhance cancer patient care and wellbeing and to provide support to cancer patients during and after their treatment. This is achieved through the provision of residential accommodation at Inis Aoibhinn, the Cancer Care West lodge on the grounds of University Hospital Galway, psychological and support services located in our cancer support centres in Galway city and Letterkenny, Co Donegal, in-hospital patient psycho-oncology counselling and also through our free bus service from Mayo to and from Inis Aoibhinn. In 2020, Cancer Care West provided support to over 2,500 people. Cancer Care West's vision is that no one will go through cancer alone.

Inis Aoibhinn Residence

Located at University Hospital Galway, Inis Aoibhinn has 33 twin bedded en-suite rooms where each patient can stay with a family member or friend, for the duration of their Radiotherapy treatment, usually 5-7 weeks. Morning and evening meals are provided complementary throughout each residents stay in addition to emotional and practical supports from our Inis Aoibhinn nursing and support staff team. In 2020, Inis Aoibhinn accommodated 320 cancer patients and provided over 6,800 bed nights to patients and family members.

COVID-19 had an enormous impact on the operation of Inis Aoibhinn during the year. Our first significant action was taken in the first week of March when we closed the front door at Inis Aoibhinn. From that day only residents, essential staff/volunteers and critical suppliers were allowed in. Soon after we implemented more severe social distancing as we reduced the numbers allowed into the dining room and by the end of March we had closed all social spaces and meals were served in the bedrooms. Due to its strategic location at UHG, the charity took the decision in April to vacate the lodge and offer the facility to the HSE to help in their fight against COVID-19. From April to the beginning of May Inis Aoibhinn was used to provide 220 bed nights for HSE front line workers working at UHG. During these five weeks, we relocated our residential service to the nearby Harbour Hotel that generously provided alternative accommodation for our residential patients at no cost.



Cancer Care West Support Centres: Galway and Donegal

During 2020, our support centre in Galway continued to provide psychological and oncology support for cancer patients and their families. At various periods during the year, the centre had to close its doors but services such as our Psychology counselling, Physiotherapy, Yoga and Benefits Advice continued to be provided through online interactions. When restrictions were eased, the centre reopened under strict protocols and continued to offer a blended service with both remote and face-to-face counselling. In total almost 85% of the client interactions for the year were done remotely. In October, the centre reached the milestone of client number 10,000, since it opened its doors in March 2009.

Similar to our centre in Galway, our cancer support centre in Letterkenny had to close its doors at various times and move its services online. The centre's additional services such as Reflexology and Manual Lymphatic Drainage were also not available when the centre was closed but recommenced when restrictions were lifted. Despite these impediments, the centre still provided support to 305 people during 2020 of which 166 were first time users and the centre was visited almost 1,500 times by cancer patients and their families.

Psycho-Oncology services, provided by our staff into Galway University Hospital, Letterkenny University Hospital and Donegal Hospice were also severely curtailed as a result of restrictions however our staff continued to offer support to inpatients and their families through remote counselling.

In response to the pandemic Cancer Care West commenced a strategic partnership with the NCCP and the Irish Cancer Society to offer a remote counselling service to cancer patients and their families through the launch of a National Helpline called "Together for Cancer Concern". During 2020, our team provided support to 75 cancer patients from all over the country through this service. As a result of our move to remote services, Cancer Care West could reach out to a much larger cohort of people, taking referrals from hospitals and services across Ireland. Looking forward, the charity has now developed a completely new way of reaching and supporting people on their cancer journey. Telehealth is a relatively new practice but it has been proven to work, so remote services will definitely remain part of our offering going forward.

The other major development during 2020 has been the development of the Children United In Bereavement (CUBS) programme which supports children bereaved by cancer. This programme was developed by two of our clinical psychologists, Dr Mairead Brennan and Dr Cathy O'Sullivan. An eight-week course aims to give children the language and skills needed to navigate the death of a parent from cancer. It will be offered on a pilot basis in early 2021 and the intention is to roll it out nationally through training of other professionals who work in psychosocial support. A patient audit was also completed in 2020. It was devised and evaluated by Dr Norma Jean Murphy, Senior Psychologist. Results will be available in early 2021.

Number of Client Visits	Number of Clients	In Hospital Visits
8045	1425	430

Key Achievements 2020

In 2020, our normal business objectives were impacted significantly and the following became our priorities:

- To keep our patients, staff and volunteers safe while on our premises.
- To keep Inis Aoibhinn open for radiotherapy patients throughout all levels of restrictions.
- To redesign our portfolio of support services and how we deliver them in line with pandemic guidelines.
- To adapt our fundraising efforts to ensure a continuous flow of funds.
- To work with our suppliers, partners and government agencies to maximise our efforts to support out patients.



*University Hospital Galway
Letterkenny University Hospital*



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.

Three qualified Irish Cancer Society Nurses and two teams of specially trained volunteers staff the Daffodil Centres in University Hospital Galway and Letterkenny University Hospital.

Currently there are 13 Daffodil Centres in Ireland and 16,764 people had contact with the Daffodil Centres around Ireland in 2020. 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.

Changes in 2020

- With the arrival of the COVID-19 Pandemic in early March 2020, several changes were made to how the Daffodil Centre Cancer Nurses continued their work. In conjunction with the ICS and the hospitals, they implemented the recommendations of the HSA and the Infection Control Departments to ensure the Daffodil Centre was as safe an environment as possible for both themselves and enquirers.
- Due to risk of vulnerability to COVID-19, social distancing requirements etc. the DC volunteers temporarily stepped away from their roles for 2020.
- The Daffodil Centre Cancer Nurses continued to provide information, education and support to cancer patients, their families and the public. The range of advice, information and support offered by the Cancer Nurses in 2020 was similar to 2019 although more of this work was carried out over the telephone, rather than face to face.
- The Daffodil Centre Cancer Nurses provided telephone and e-mail support to enquirers and to their colleagues within the hospital in conjunction with working on the Cancer Support Line to provide a 7-day service for enquirers.
- The ICS developed a new model for its delivery of professional counselling to ensure that those who are unable to access face-to-face counselling due to COVID-19 containment measures are able to access the care they need. This included all people diagnosed with cancer as well as their carers and loved ones. It was also available for children through a therapeutic support model and for teenagers using appropriately trained and vetted practitioners.

Daffodil Centres Activity

The total number of contacts to the Daffodil Centres in UHG and LUH during 2020 was 2,332 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.

- 49% were first time enquirers
- 51% had visited before
- 25% worked in the hospital

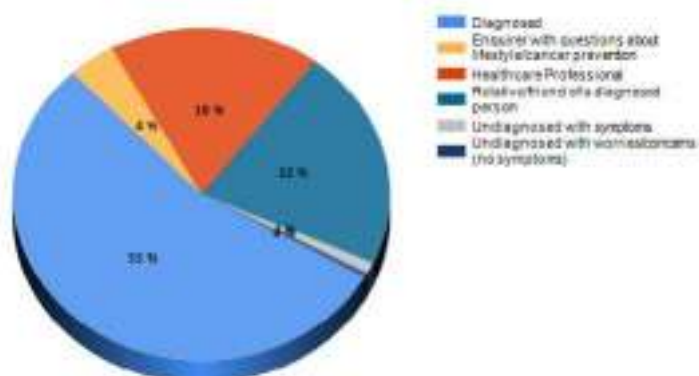
Breakdown of activity

UHG

Gender of lead enquirer

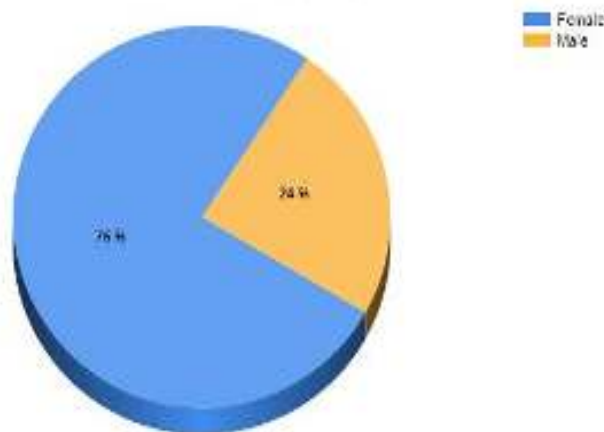


Type of enquirer

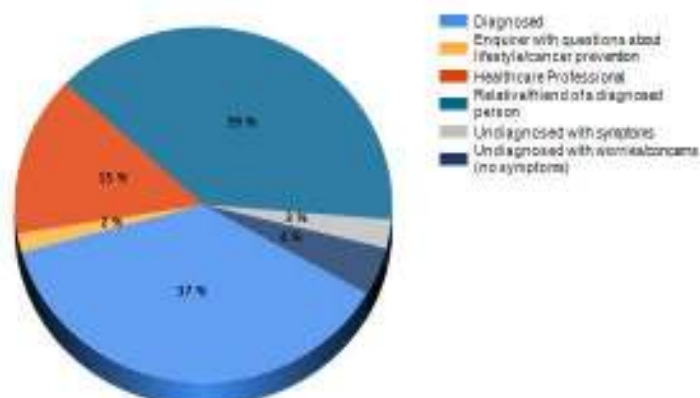


LUH

Gender of lead enquirer



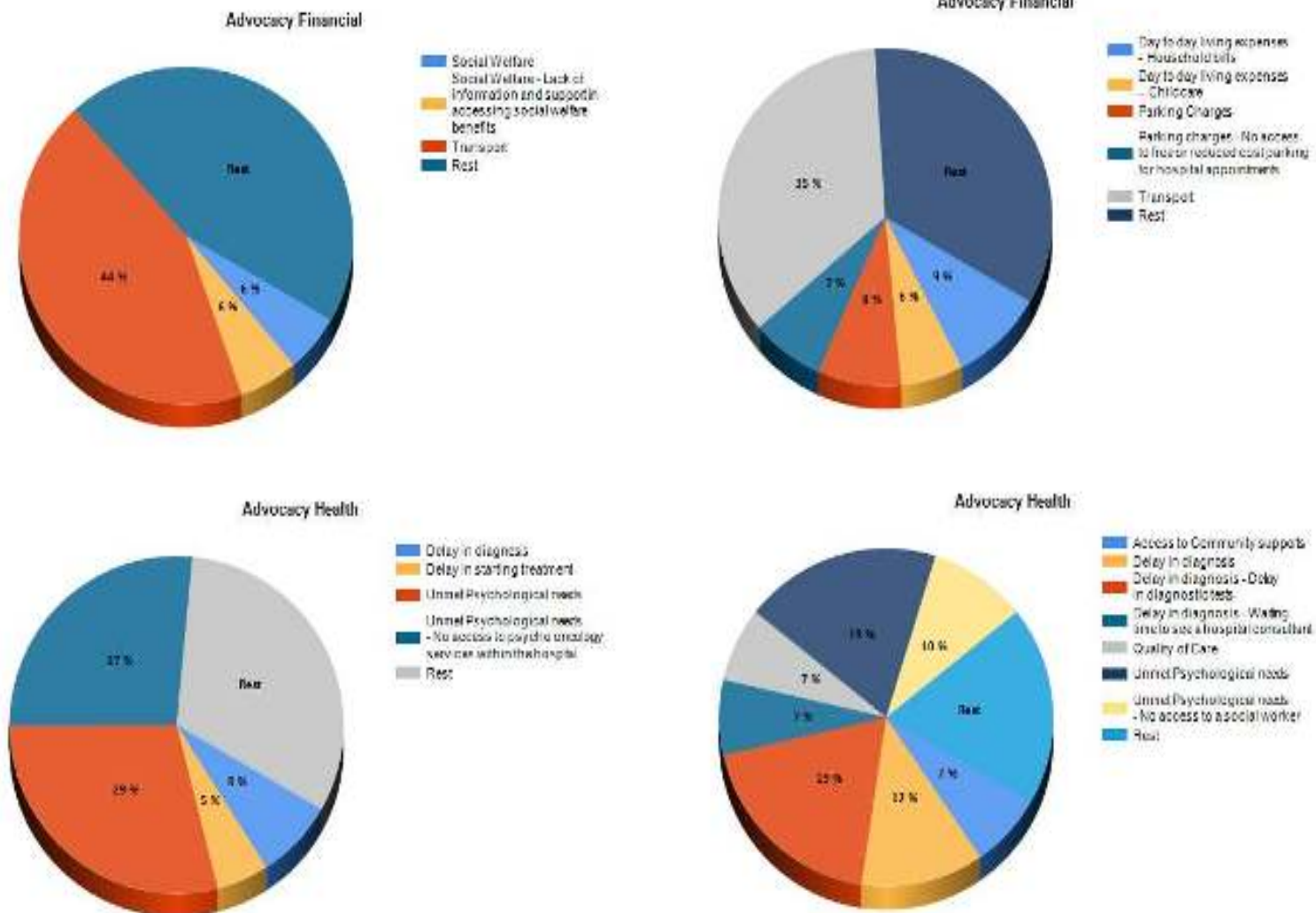
Type of enquirer



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.

UHG

LUH



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 2020, the Cancer Nurses in UHG and LUH continued some face-to-face chemotherapy education sessions (with appropriate infection control measures and PPE) and provided sessions online and over the phone. 134 people attended these sessions.



Cancer Research and Developments



Cancer Research at the Lambe Institute

Cancer Research at Saolta- UNIVERSITY OF GALWAY

Cancer is strategic research priority for the College of Medicine, Nursing and Health Sciences at the University of Galway in partnership with Saolta. Cancer research engages a wide variety of basic, translational, clinical, and healthcare researchers across the University and regional hospitals. Translational and clinical research trials are integrated with the HRB-Clinical Research Facility through the *Advanced Therapies and Cancer* cluster. The University of Galway, as the academic partner of the Saolta MCAN is committed to supporting the Saoltas' key priority to become an accredited member of the OEI which will quality assure the delivery of cancer care underpinned by research, innovation education and healthcare training.

Cancer Research Awards and Achievements

Year	Award Details	Awardee (PI/Mentor)
2020	Irish Association for Cancer Research AOIFE Award for Research Excellence	Dr Oliver Treacy (Aideen Ryan)
2020	Highlighted in the Top 100 Hospital Professional Lists	Aideen Ryan
2020	Invited speaker at PhD Summit 2020	Aideen Ryan
2020	Invited Early Career Researchers - 'ECR' Experts at Oxford Open Immunology	Aideen Ryan
2020	SITC Winter-school Early Career Travel Award (SITC Award), Houston Texas (€3000)	Aideen Ryan
2020	Invited Reader for L'Oréal UNESCO UK and Ireland for Women in Science Rising Talents award	Aideen Ryan
2020	Shortlisted for Best Poster Award, IACR 2020	Dr Oliver Treacy (Aideen Ryan)
2020	Winner of a 'Dragons den' competition to develop a project to identify a new product and an outline of the path to the commercial market. Eileen Reidy presented this product to the judges and her team were awarded with 1st prize.	Eileen Reidy (Aideen Ryan)
2020	Shortlisted for John Fitzpatrick medal based on highest abstract scores	Niamh Leonard (Aideen Ryan)
2020	Organ on a chip network -Research Collaborative 3 month placement at Barts Cancer Institute, QMUL, London	Niamh Leonard (Aideen Ryan)

Cancer Research Higher Degrees

Year	Degree	Thesis Title	Student (Supervisor)
2020	PhD	The prognostic and therapeutic value of XBP1 signaling in ER-positive breast cancer	Dr David Barua (Dr Sanjeev Gupta)
2020	MD	Adipose Derived Stem Cells from Breast Cancer Patients - Suitability and Oncological Safety in Breast Regeneration	Dr Donald Courtney (Prof Michael Kerin, Prof Aoife Lowery)
2020	PhD	Mesenchymal Stem Cell mediated delivery of Extracellular Vesicle (EV)-encapsulated microRNAs for the treatment of breast cancer.	Dr Katie Gilligan (Dr Roisin Dwyer)

Cancer Research Events

Date	Event	Convenor(s)
January 2020	NBCRI Mayo Pink Ribbon - Fundraiser Research Showcase	Prof Michael Kerin, Dr Roisin Dwyer



The National Breast Cancer Research Institute is a national charity that funds a comprehensive research programme at the University of 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, University of 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 influencing 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.

In 2020, Mayo Pink Ribbon celebrated 10 years of raising funds for the National Breast Cancer Research Institute who have raised over one million euro.

Every year since 2014, Ireland's lady golfers have proudly donned the pink jersey and played their favourite game to help raise funds for the National Breast Cancer Research Institute through Play in Pink events at golf clubs nationwide. In spite of all the challenges 2020 has presented, golf clubs still managed to raise a staggering €217,000 for the charity, driving the overall contribution raised in the last seven years to over €1 million.

The annual fundraiser has received incredible support from the Irish Ladies Golf Union (ILGU) and the lady captains of golf clubs nationwide who, combined with the charity, have created a fabulous coming together of golfing enthusiasts from all over the country for a great cause.

Overall 2020 was very successful in a challenging year plus the success the charity has had in converting traditional events to virtual such as; 'Win a BMW', 'All Ireland Cycle' 'Christmas Raffle' and 'Valentine's Concert'.





Appendix

Cancer Research Publications

1. O'Dwyer J, O'Cearbhaill RE, Wylie R, O'Mahony S, O'Dwyer M, Duffy GP, Dolan EB. Enhancing delivery of small molecule and cell-based therapies for ovarian cancer using advanced delivery strategies. *Adv Ther (Weinh)*. 2020 Nov;3(11):2000144. doi: 10.1002/adtp.202000144. Epub 2020 Aug 16. PMID: 33709016; PMCID: PMC7942751.
2. Ribrag V, Lee ST, Rizzieri D, Dyer MJS, Fayad L, Kurzrock R, Andritsos L, Bouabdallah R, Hayat A, Bacon L, Jiang Y, Miah K, Delafont B, Hamid O, Anyanwu S, Martinez P, Hess B. A Phase 1b Study to Evaluate the Safety and Efficacy of Durvalumab in Combination with Tremelimumab or Danvatirsen in Patients with Relapsed or Refractory Diffuse Large B-Cell Lymphoma. *Clin Lymphoma Myeloma Leuk*. 2021 May;21(5):309-317.e3. doi: 10.1016/j.clml.2020.12.012. Epub 2020 Dec 17. PMID: 33632668.
3. O'Beirn E, Elliott JA, Neary C, O'Connell A, McLaughlin R. Congenital arteriovenous malformation of the breast associated with giant hairy nevus. *Breast J*. 2021 Jan; 27(1):58-59. doi: 10.1111/tbj.14133. Epub 2020 Dec 28. PMID: 33368810.
4. Collins PM, Brennan MJ, Elliott JA, Abd Elwahab S, Barry K, Sweeney K, Malone C, Lowery A, McLaughlin R, Kerin MJ. Neoadjuvant chemotherapy for luminal a breast cancer: Factors predictive of histopathologic response and oncologic outcome. *Am J Surg*. 2021 Aug;222(2):368-376. doi: 10.1016/j.amjsurg.2020.11.053. Epub 2020 Dec 9. PMID: 33334569.
5. Negi A, Murphy PV. Development of Mcl-1 inhibitors for cancer therapy. *Eur J Med Chem*. 2021 Jan 15;210:113038. doi: 10.1016/j.ejmech.2020.113038. Epub 2020 Nov 24. PMID: 33333396.
6. Curtis KJ, Schiavi J, Mc Garrigle MJ, Kumar V, McNamara LM, Niebur GL. Mechanical stimuli and matrix properties modulate cancer spheroid growth in three-dimensional gelatin culture. *J R Soc Interface*. 2020 Dec;17(173):20200568. doi: 10.1098/rsif.2020.0568. Epub 2020 Dec 16. PMID: 33323051; PMCID: PMC7811591.
7. Khan FH, Dervan E, Bhattacharyya DD, McAuliffe JD, Miranda KM, Glynn SA. The Role of Nitric Oxide in Cancer: Master Regulator or NOT? *Int J Mol Sci*. 2020 Dec 10; 21(24):9393. doi: 10.3390/ijms21249393. PMID: 33321789; PMCID: PMC7763974.
8. Flaus A, Downs JA, Owen-Hughes T. Histone isoforms and the oncohistone code. *Curr Opin Genet Dev*. 2021 Apr;67:61-66. doi: 10.1016/j.gde.2020.11.003. Epub 2020 Dec 4. PMID: 33285512.
9. Langabeer SE, Bhreathnach Ú, Cahill MR, Elhassadi E, Ní Loingsigh S, Conneally E, Enright H. Can absolute basophilia distinguish e1a2 BCR-ABL1 chronic myeloid leukemia from chronic myelomonocytic leukemia? *Blood Cells Mol Dis*. 2021 Mar;87:102521. doi: 10.1016/j.bcmd.2020.102521. Epub 2020 Nov 19. PMID: 33254033.
10. Smyrniotopoulos V, Merten C, Firsova D, Fearnhead H, Tasdemir D. Oxygenated Acyclic Diterpenes with Anticancer Activity from the Irish Brown Seaweed *Bifurcaria bifurcata*. *Mar Drugs*. 2020 Nov 23;18(11):581. doi: 10.3390/md18110581. PMID: 33238388; PMCID: PMC7700283.
11. Connolly D, Sands G, Winter H, Foley MJ, Kleefeld C. A comparison of treatment planning techniques for low-dose-rate (LDR) prostate brachytherapy. *Brachytherapy*. 2021 Mar-Apr;20(2):410-419. doi: 10.1016/j.brachy.2020.10.006. Epub 2020 Nov 21. PMID: 33234407.
12. Loftus PG, Watson L, Deedigan LM, Camarillo-Retamosa E, Dwyer RM, O'Flynn L, Alagesan S, Griffin M, O'Brien T, Kerin MJ, Elliman SJ, Barkley LR. Targeting stromal cell Syndecan-2 reduces breast tumour growth, metastasis and limits immune evasion. *Int J Cancer*. 2021 Mar 1;148(5):1245-1259. doi: 10.1002/ijc.33383. Epub 2020 Dec 2. PMID: 33152121; PMCID: PMC7839764.
13. Alsharabasy AM, Glynn SA, Pandit A. The role of extracellular matrix in tumour angiogenesis: the throne has NOx servants. *Biochem Soc Trans*. 2020 Dec 18;48(6):2539-2555. doi: 10.1042/BST20200208. PMID: 33150941; PMCID: PMC7752075.
14. O'Mahony C, Murphy KD, O'Brien GL, Aherne J, Hanan T, Mullen L, Keane M, Donnellan P, Davey C, Browne H, Malee K, Byrne S. A cost comparison study to review community versus acute hospital models of nursing care delivered to oncology patients. *Eur J Oncol Nurs*. 2020 Dec;49:101842. doi: 10.1016/j.ejon.2020.101842. Epub 2020 Sep 28. PMID: 33126156.
15. Dastghaib S, Shojaei S, Mostafavi-Pour Z, Sharma P, Patterson JB, Samali A, Mokarram P, Ghavami S. Simvastatin Induces Unfolded Protein Response and Enhances Temozolomide-Induced Cell Death in Glioblastoma Cells. *Cells*. 2020 Oct 22;9(11):2339. doi: 10.3390/cells9112339. PMID: 33105603; PMCID: PMC7690447.

16. Neary C, McAnena P, McAnena O, Kerin M, Collins C. C-Reactive Protein-Lymphocyte Ratio Identifies Patients at Low Risk for Major Morbidity after Oesophagogastric Resection for Cancer. *Dig Surg.* 2020;37(6):515-523. doi: 10.1159/000510963. Epub 2020 Oct 26. PMID: 33105139.
17. McCabe FJ, Jadaan DY, Jadaan MM, McCabe JP. The rise of metastatic bone disease in Ireland. *Clin Exp Metastasis.* 2020 Dec;37(6):693-702. doi: 10.1007/s10585-020-10059-7. Epub 2020 Oct 24. PMID: 33099723.
18. Hossain MM, Sultana A, Barua D, Islam MN, Gupta A, Gupta S. Differential expression, function and prognostic value of miR-17-92 cluster in ER-positive and triple-negative breast cancer. *Cancer Treat Res Commun.* 2020;25:100224. doi: 10.1016/j.ctarc.2020.100224. Epub 2020 Oct 17. PMID: 33096318.
19. Barua D, Abbasi B, Gupta A, Gupta S. XBP1 increases transactivation of somatic mutants of ESR1 and loss of XBP1 reverses endocrine resistance conferred by gain-of-function Y537S ESR1 mutation. *Heliyon.* 2020 Oct 10;6(10):e05217. doi: 10.1016/j.heliyon.2020.e05217. PMID: 33088967; PMCID: PMC7557884.
20. Shen Y, Crassini K, Fatima N, O'Dwyer M, O'Neill M, Christopherson RI, Mulligan SP, Best OG. IBL-202 is synergistic with venetoclax in CLL under in vitro conditions that mimic the tumor microenvironment. *Blood Adv.* 2020 Oct 27;4(20):5093-5106. doi: 10.1182/bloodadvances.2019001369. PMID: 33085757; PMCID: PMC7594376.
21. Fogarty H, Dowling A, O'Brien D, Langabeer S, Bacon CL, Flavin R, O'Dwyer M, Hennessy B, O'Leary H, Crotty G, Henderson R, Nolan J, Thornton P, Vandenberghe E, Quinn F. Biclinal lymphoproliferative disorders: another association with NOTCH1-mutated chronic lymphocytic leukaemias. *Ir J Med Sci.* 2021 Aug;190(3):1087-1094. doi: 10.1007/s11845-020-02386-1. Epub 2020 Oct 17. PMID: 33068240.
22. Woulfe P, Sullivan FJ, Kam W, O'Keeffe S. Optical fiber dosimeter for real-time in-vivo dose monitoring during LDR brachytherapy. *Biomed Opt Express.* 2020 Jun 30;11(7):4027-4036. doi: 10.1364/BOE.385610. PMID: 33014583; PMCID: PMC7510901.
23. Groarke A, Curtis R, Skelton J, Groarke JM. Quality of life and adjustment in men with prostate cancer: Interplay of stress, threat and resilience. *PloS One.* 2020 Sep 17;15(9):e0239469. doi: 10.1371/journal.pone.0239469. PMID: 32941547; PMCID: PMC7498057.
24. Challapalli RS, Dwyer RM, McInerney N, Kerin MJ, Lowery AJ. Effect of Breast Cancer and Adjuvant Therapy on Adipose-Derived Stromal Cells: Implications for the Role of ADSCs in Regenerative Strategies for Breast Reconstruction. *Stem Cell Rev Rep.* 2021 Apr;17(2):523-538. doi: 10.1007/s12015-020-10038-1. Epub 2020 Sep 14. PMID: 32929604.
25. Einsele H, Briones J, Ciceri F, García-Cadenas I, Falkenburg F, Bolaños N, Heemskerk HMM, Houot R, Hudecek M, Locatelli F, Morgan K, Morris CE, O'Dwyer M, Gil JS, van den Brink M, van de Loosdrecht AA. Immune-based Therapies for Hematological Malignancies: An Update by the EHA SWG on Immunotherapy of Hematological Malignancies. *Hemasphere.* 2020 Jun 29;4(4):e423. doi: 10.1097/HS9.0000000000000423. PMID: 32904089; PMCID: PMC7448369.
26. Dowling M, Fahy P, Houghton C, Smalle M. A qualitative evidence synthesis of healthcare professionals' experiences and views of palliative care for patients with a haematological malignancy. *Eur J Cancer Care (Engl).* 2020 Nov;29(6):10.1111/ecc.13316. doi: 10.1111/ecc.13316. Epub 2020 Sep 9. PMID: 32902114; PMCID: PMC7757223.
27. Savazzi M, Abedi S, Ištuk N, Joachimowicz N, Roussel H, Porter E, O'Halloran M, Costa JR, Fernandes CA, Felício JM, Conceição RC. Development of an Anthropomorphic Phantom of the Axillary Region for Microwave Imaging Assessment. *Sensors (Basel).* 2020 Sep 2;20(17):4968. doi: 10.3390/s20174968. PMID: 32887340; PMCID: PMC7506727.
28. Le Reste PJ, Pineau R, Voutetakis K, Samal J, Jégou G, Lhomond S, Gorman AM, Samali A, Patterson JB, Zeng Q, Pandit A, Aubry M, Soriano N, Etcheverry A, Chatzioannou A, Mosser J, Avril T, Chevet E. Local intracerebral inhibition of IRE1 by MKC8866 sensitizes glioblastoma to irradiation/chemotherapy in vivo. *Cancer Lett.* 2020 Dec 1;494:73-83. doi: 10.1016/j.canlet.2020.08.028. Epub 2020 Sep 1. PMID: 32882336.
29. Moloney BM, McAnena PF, Ryan ÉJ, Beirn EO, Waldron RM, Connell AO, Walsh S, Ennis R, Glynn C, Lowery AJ, McCarthy PA, Kerin MJ. The Impact of Preoperative Breast Magnetic Resonance Imaging on Surgical Management in Symptomatic Patients With Invasive Lobular Carcinoma. *Breast Cancer (Auckl).* 2020 Aug 14;14:1178223420948477. doi: 10.1177/1178223420948477. PMID: 32863709; PMCID: PMC7430084.
30. Lees A, McIntyre AJ, Crawford NT, Falcone F, McCann C, Holohan C, Quinn GP, Roberts JZ, Sessler T, Gallagher PF, Gregg GMA, McAllister K, McLaughlin KM, Allen WL, Egan LJ, Ryan AE, Labonte-Wilson MJ, Dunne PD, Wappett M, Coyle VM, Johnston PG, Kerr EM, Longley DB, McDade SS. The pseudo-caspase FLIP(L) regulates cell fate following p53 activation. *Proc Natl Acad Sci U S A.* 2020 Jul 28;117(30):17808-17819. doi: 10.1073/pnas.2001520117. Epub 2020 Jul 13. PMID: 32661168

31. Lloyd AJ, Ryan ÉJ, Boland MR, Elwahab SA, Malone C, Sweeney KJ, Barry KM, McLaughlin R, Kerin MJ, Lowery AJ. The histopathological and molecular features of breast carcinoma with tumour budding-a systematic review and meta-analysis. *Breast Cancer Res Treat.* 2020 Oct;183(3):503-514. doi: 10.1007/s10549-020-05810-3. Epub 2020 Jul 24. PMID: 32710280.
32. Kearns C, Feighery R, Mc Caffrey J, Higgins M, Smith M, Murphy V, O'Reilly S, Horgan AM, Walshe J, McDermott R, Morris PG, Keane M, Martin M, Murphy C, Duffy K, Mihai A, Armstrong J, O'Donnell DM, Gallagher WM, Kelly CM, Kelly CM. Understanding and Attitudes toward Cancer Clinical Trials among Patients with a Cancer Diagnosis: National Study through Cancer Trials Ireland. *Cancers (Basel).* 2020 Jul 16;12(7):1921. doi: 10.3390/cancers12071921. PMID: 32708702; PMCID: PMC7409272.
33. McCarthy N, Dolgikh N, Logue S, Patterson JB, Zeng Q, Gorman AM, Samali A, Fulda S. The IRE1 and PERK arms of the unfolded protein response promote survival of rhabdomyosarcoma cells. *Cancer Lett.* 2020 Oct 10;490:76-88. doi: 10.1016/j.canlet.2020.07.009. Epub 2020 Jul 15. PMID: 32679165.
34. Rodríguez L. An exploration of resilience in adolescents facing maternal cancer. *Cancer Rep (Hoboken).* 2020 Apr;3(2):e1208. doi: 10.1002/cnr2.1208. Epub 2019 Jul 24. PMID: 32672001; PMCID: PMC7941445.
35. Kakodkar P, More S, András K, Papakonstantinou N, Kelly S, Makrooni MA, Ortutay C, Szegezdi E. Aspartic Aminopeptidase Is a Novel Biomarker of Aggressive Chronic Lymphocytic Leukemia. *Cancers (Basel).* 2020 Jul 12;12(7):1876. doi: 10.3390/cancers12071876. PMID: 32664705; PMCID: PMC7408864.
36. Tully R, Loughney L, Bolger J, Sorensen J, McAnena O, Collins CG, Carroll PA, Arumugasamy M, Murphy TJ, Robb WB; PERIOP OG Working Group. The effect of a pre- and post-operative exercise programme versus standard care on physical fitness of patients with oesophageal and gastric cancer undergoing neoadjuvant treatment prior to surgery (The PERIOP-OG Trial): Study protocol for a randomised controlled trial. *Trials.* 2020 Jul 13;21(1):638. doi: 10.1186/s13063-020-04311-4. PMID: 32660526; PMCID: PMC7359259.
37. McGuire A, Casey MC, Waldron RM, Heneghan H, Kalinina O, Holian E, McDermott A, Lowery AJ, Newell J, Dwyer RM, Miller N, Keane M, Brown JAL, Kerin MJ. Prospective Assessment of Systemic MicroRNAs as Markers of Response to Neoadjuvant Chemotherapy in Breast Cancer. *Cancers (Basel).* 2020 Jul 7;12(7):1820. doi: 10.3390/cancers12071820. PMID: 32645898; PMCID: PMC7408914.
38. Mahdi AF, Malacrida B, Nolan J, McCumiskey ME, Merrigan AB, Lal A, Tormey S, Lowery AJ, McGourty K, Kiely PA. Expression of Annexin A2 Promotes Cancer Progression in Estrogen Receptor Negative Breast Cancers. *Cells.* 2020 Jun 30;9(7):1582. doi: 10.3390/cells9071582. PMID: 32629869; PMCID: PMC7407301.
39. Tabrizi L, Thompson K, Mnich K, Chintha C, Gorman AM, Morrison L, Luessing J, Lowndes NF, Dockery P, Samali A, Erxleben A. Novel Pt(IV) Prodrugs Displaying Antimitochondrial Effects. *Mol Pharm.* 2020 Aug 3;17(8):3009-3023. doi: 10.1021/acs.molpharmaceut.0c00417. Epub 2020 Jul 15. PMID: 32628022.
40. Jalali A, Foley RW, Maweni RM, Murphy K, Lundon DJ, Lynch T, Power R, O'Brien F, O'Malley KJ, Galvin DJ, Durkan GC, Murphy TB, Watson RW. A risk calculator to inform the need for a prostate biopsy: a rapid access clinic cohort. *BMC Med Inform Decis Mak.* 2020 Jul 3;20(1):148. doi: 10.1186/s12911-020-01174-2. PMID: 32620120; PMCID: PMC7333322.
41. Khan J, Kamal MS, D'Arcy FT, Dowling C. Biopsy at flexible cystoscopy: is it worthwhile? *Ir J Med Sci.* 2021 Feb;190(1):437-439. doi: 10.1007/s11845-020-02284-6. Epub 2020 Jul 1. PMID: 32613562.
42. Constantinescu G, Langton K, Conrad C, Amar L, Assié G, Gimenez-Roqueplo AP, Blanchard A, Larsen CK, Mulatero P, Williams TA, Prejbisz A, Fassnacht M, Bornstein S, Ceccato F, Fliedner S, Denny M, Peitzsch M, Sinnott R, Januszewicz A, Beuschlein F, Reincke M, Zennaro MC, Eisenhofer G, Deinum J. Glucocorticoid Excess in Patients with Pheochromocytoma Compared with Paraganglioma and Other Forms of Hypertension. *J Clin Endocrinol Metab.* 2020 Sep 1;105(9):e3374-83. doi: 10.1210/clinem/dgaa423. PMID: 32609829; PMCID:PMC7413598.
43. Aherne TM, Boland MR, Catargiu D, Bashar K, McVeigh TP, Brodie C, Sweeney KJ. Does Mode of Surgical Intervention Based on Oncotype DX Score Influence Disease Recurrence in Early Breast Cancer? *Surg J (N Y).* 2020 Jun 19;6(2):e135-e138. doi: 10.1055/s-0040-1712537. PMID: 32577529; PMCID: PMC7305020.
44. Szudy-Szczyrek A, Mlak R, Bury-Kamińska M, Mielnik M, Podgajna M, Kuśmierczuk K, Mazurek M, Homa-Mlak I, Szczyrek M, Krawczyk J, Małecka-Massalska T, Hus M. Serum brain-derived neurotrophic factor (BDNF) concentration predicts polyneuropathy and overall survival in multiple myeloma patients. *Br J Haematol.* 2020 Oct;191(1):77-89. doi: 10.1111/bjh.16862. Epub 2020 Jun 22. PMID: 32567687.
45. O'Connor M, Waller J, Gallagher P, O'Donovan B, Clarke N, Keogh I, MacCarthy D, O'Sullivan E, Timon C, Martin C, O'Leary J, Sharp L. Barriers and facilitators to discussing HPV with head and neck cancer patients: A qualitative study using the theoretical domains framework. *Patient Educ Couns.* 2020 May 30;S0738-3991(20)30318-9. doi: 10.1016/j.pec.2020.05.032. Epub ahead of print. PMID: 32565003.

46. Keady C, Hechtl D, Joyce M. When the bowel meets the bladder: Optimal management of colorectal pathology with urological involvement. *World J Gastrointest Surg.* 2020 May 27;12(5):208-225. doi: 10.4240/wjgs.v12.i5.208. PMID: 32551027; PMCID: PMC7289647.
47. Rainey MD, Quinlan A, Cazzaniga C, Mijic S, Martella O, Krietsch J, Göder A, Lopes M, Santocanale C. CDC7 kinase promotes MRE11 fork processing, modulating fork speed and chromosomal breakage. *EMBO Rep.* 2020 Aug 5;21(8):e48920. doi: 10.15252/embr.201948920. Epub 2020 Jun 4. PMID: 32496651; PMCID: PMC7403700.
48. Madden EC, Gorman AM, Logue SE, Samali A. Tumour Cell Secretome in Chemoresistance and Tumour Recurrence. *Trends Cancer.* 2020 Jun;6(6):489-505. doi: 10.1016/j.trecan.2020.02.020. Epub 2020 Mar 25. PMID: 32460003.
49. Barua D, Gupta A, Gupta S. Targeting the IRE1-XBP1 axis to overcome endocrine resistance in breast cancer: Opportunities and challenges. *Cancer Lett.* 2020 Aug 28;486:29-37. doi: 10.1016/j.canlet.2020.05.020. Epub 2020 May 22. PMID: 32446861.
50. Doultosinos D, Carlesso A, Chintia C, Paton JC, Paton AW, Samali A, Chevet E, Eriksson LA. Peptidomimetic-based identification of FDA-approved compounds inhibiting IRE1 activity. *FEBS J.* 2021 Feb;288(3):945-960. doi: 10.1111/febs.15372. Epub 2020 Jun 11. PMID: 32446294.
51. Watson GA, Leonard GD. Prescribing Exercise for Cancer Survivors: Time for Physicians to Become More Proactive. *Ir Med J.* 2020 Feb 13;113(2):25. PMID: 32407010.
52. O'Donnell JP, Sugrue R, McLaughlin R, McNerney NM. Multidisciplinary approach to chest wall reconstruction in primary breast angiosarcoma resection. *BMJ Case Rep.* 2020 May 6;13(5):e233156. doi: 10.1136/bcr-2019-233156. PMID: 32381526; PMCID: PMC7223017.
53. Geary RL, Haddad T, Barry A, Zuchora A, McLaughlin R, Kerin M, Sullivan FJ, Martin J. A prospective feasibility study of MammoSite accelerated partial breast irradiation for early breast Cancer. *Ir J Med Sci.* 2020 Nov;189(4):1203-1208. doi: 10.1007/s11845-020-02237-z. Epub 2020 May 4. PMID: 32367398.
54. Dhami SPS, Tirinci A, Baev D, Krawczyk J, Quinn J, Cahill MR, Zeugolis D, Szegezdi E. Theranostic drug test incorporating the bone-marrow microenvironment can predict the clinical response of acute myeloid leukaemia to chemotherapy. *Br J Haematol.* 2020 Jun;189(6):e254-e258. doi: 10.1111/bjh.16684. Epub 2020 Apr 28. PMID: 32342487.
55. Sheill G, Guinan E, O'Neill L, Normand C, Doyle SL, Moore S, Newell J, McDermott G, Ryan R, Reynolds JV, Hussey J. Preoperative exercise to improve fitness in patients undergoing complex surgery for cancer of the lung or oesophagus (PRE-HIT): protocol for a randomized controlled trial. *BMC Cancer.* 2020 Apr 15;20(1):321. doi: 10.1186/s12885-020-06795-4. PMID: 32293334; PMCID: PMC7160913.
56. Davey MG, Brennan M, Ryan ÉJ, Corbett M, Abd Elwahab S, Walsh S, McLaughlin RJ. Defining clinicopathological and radiological features of breast cancer in women under the age of 35: an epidemiological study. *Ir J Med Sci.* 2020 Nov;189(4):1195-1202. doi: 10.1007/s11845-020-02229-z. Epub 2020 Apr 13. PMID: 32285374.
57. Warde KM, Schoenmakers E, Ribes Martinez E, Lim YJ, Leonard M, Lawless SJ, O'Shea P, Chatterjee KV, Gurnell M, Hantel C, Denny MC. Liver X receptor inhibition potentiates mitotane-induced adrenotoxicity in ACC. *Endocr Relat Cancer.* 2020 Jun;27(6):361-373. doi: 10.1530/ERC-20-0031. PMID: 32276262.
58. Langabeer SE, Faryal R, O'Dwyer M, Loingsigh SN. Patient-Initiated Discontinuation of Tyrosine Kinase Inhibitor for Chronic Myeloid Leukemia. *Case Rep Hematol.* 2020 Mar 23;2020:9571691. doi: 10.1155/2020/9571691. PMID: 32274226; PMCID: PMC7125505.
59. Brett E, Sauter M, Timmins É, Azimzadeh O, Rosemann M, Merl-Pham J, Hauck SM, Nelson PJ, Becker KF, Schunn I, Lowery A, Kerin MJ, Atkinson M, Krüger A, Machens HG, Düscher D. Oncogenic Linear Collagen VI of Invasive Breast Cancer Is Induced by CCL5. *J Clin Med.* 2020 Apr 2;9(4):991. doi: 10.3390/jcm9040991. PMID: 2252260; PMCID: PMC7230614.
60. Kearney L, Crampe M, Conneally E, Krawczyk J, Kumar S, Murphy PT, Mykytiv V, Ryan MF, Langabeer SE. Molecular responses in e19a2 <i>BCR-ABL1</i> chronic myeloid leukemia. *Leuk Res Rep.* 2020 Mar 12;13:100195. doi: 10.1016/j.lrr.2020.100195. PMID: 32211287; PMCID: PMC7082598.
61. Abd Elwahab SM, Lowery AJ, Kerin MJ. Comment on "Implant-Based Breast Reconstruction With Acellular Dermal Matrix. Safety Data From an Open-Label, Multicenter, Randomized, Controlled Trial in the Setting of Breast Cancer Treatment". *Ann Surg.* 2020 Apr;271(4):e106. doi: 10.1097/SLA.0000000000003609. PMID: 32197006.
62. Thirion PG, Dunne MT, Kelly PJ, Flavin A, O'Sullivan JM, Hacking D, Sasiadek W, Small C, Pomeroy MM, Martin J, McArdle O, Parker I, O'Sullivan LS, Shannon AM, Clayton-Lea A, Collins CD, Stevenson MR, Alvarez-Iglesias A, Armstrong JG, Moriarty M. Non-inferiority randomised phase 3 trial comparing two radiation schedules (single vs.

- five fractions) in malignant spinal cord compression. *Br J Cancer*. 2020 Apr;122(9):1315-1323. doi: 10.1038/s41416-020-0768-z. Epub 2020 Mar 11. PMID: 32157242; PMCID: PMC7188681.
63. Abou-Alfa GK, Mayer R, Venook AP, O'Neill AF, Beg MS, LaQuaglia M, Kingham PT, Kobos R, Basturk O, Brennan C, Yopp A, Harding JJ, Leong S, Crown J, Hoti E, Leonard G, Ly M, Bradley M, Valentino E, Markowitz D, Zukowski A, Ren K, Gordan JD. Phase II Multicenter, Open-Label Study of Oral ENMD-2076 for the Treatment of Patients with Advanced Fibrolamellar Carcinoma. *Oncologist*. 2020 Dec;25(12):e1837-e1845. doi: 10.1634/theoncologist.2020-0093. Epub 2020 Mar 10. PMID: 32154962; PMCID: PMC8186410.
 64. Boland MR, Ryan ÉJ, Lowery AJ. Author response to: Comment on: Meta-analysis of the impact of progesterone receptor status on oncological outcomes in oestrogen receptor-positive breast cancer. *Br J Surg*. 2020 Mar;107(4):466-467. doi: 10.1002/bjs.11499. PMID: 32129494.
 65. O'Neill CP, Dwyer RM. Nanoparticle-Based Delivery of Tumor Suppressor microRNA for Cancer Therapy. *Cells*. 2020 Feb 24;9(2):521. doi: 10.3390/cells9020521. PMID: 32102476; PMCID: PMC7072816.
 66. Moloney BM, O'Loughlin D, Abd Elwahab S, Kerin MJ. Breast Cancer Detection-A Synopsis of Conventional Modalities and the Potential Role of Microwave Imaging. *Diagnostics (Basel)*. 2020 Feb 14;10(2):103. doi: 10.3390/diagnostics10020103. PMID: 32075017; PMCID: PMC7168907.
 67. Sannicandro AJ, McDonagh B, Goljanek-Whysall K. MicroRNAs as potential therapeutic targets for muscle wasting during cancer cachexia. *Curr Opin Clin Nutr Metab Care*. 2020 May;23(3):157-163. doi: 10.1097/MCO.0000000000000645. PMID: 32073414.
 68. Ahmed M, Daneshvar C, Breen D. Routine neck ultrasound by respiratory physicians in the diagnosis and staging of patients with lung cancer and mediastinal lymphadenopathy: a prospective pilot study. *ERJ Open Res*. 2020 Feb 10;6(1):00180-2019. doi: 10.1183/23120541.00180-2019. PMID: 32055635; PMCID: PMC7008141.
 69. Das JP, Vargas HA, Lee A, Hutchinson B, O'Connor E, Kok HK, Torreggiani W, Murphy J, Roche C, Bruzzi J, McCarthy P. The urachus revisited: multimodal imaging of benign & malignant urachal pathology. *Br J Radiol*. 2020 Jun;93(1110):20190118. doi: 10.1259/bjr.20190118. Epub 2020 Feb 20. PMID: 32045264.
 70. Conceição RC, Medeiros H, Godinho DM, O'Halloran M, Rodriguez-Herrera D, Flores-Tapia D, Pistorius S. Classification of breast tumor models with a prototype microwave imaging system. *Med Phys*. 2020 Apr;47(4):1860-1870. doi: 10.1002/mp.14064. Epub 2020 Mar 1. PMID: 32010981.
 71. Swan D, Gurney M, Krawczyk J, Ryan AE, O'Dwyer M. Beyond DNA Damage: Exploring the Immunomodulatory Effects of Cyclophosphamide in Multiple Myeloma. *Hemasphere*. 2020 Apr 3;4(2):e350. doi: 10.1097/HS9.0000000000000350. eCollection 2020 Apr. PMID: 32309787 Free PMC article. Review.
 72. McVeigh ÚM, McVeigh TP, Curran C, Miller N, Morris DW, Kerin MJ. Diagnostic yield of a custom-designed multi-gene cancer panel in Irish patients with breast cancer. *Ir J Med Sci*. 2020 Aug;189(3):849-864. doi: 10.1007/s11845-020-02174-x. Epub 2020 Feb 1. Erratum in: *Ir J Med Sci*. 2020 Feb 18; PMID: 32008151.
 73. Clancy C, Lynch J, O'Connor P, Dowling M. Breast cancer patients' experiences of adherence and persistence to oral endocrine therapy: A qualitative evidence synthesis. *Eur J Oncol Nurs*. 2020 Feb;44:101706. doi: 10.1016/j.ejon.2019.101706. Epub 2019 Nov 30. PMID: 32007696.
 74. Gilligan KE, Dwyer RM. Extracellular Vesicles for Cancer Therapy: Impact of Host Immune Response. *Cells*. 2020 Jan 16;9(1):224. doi: 10.3390/cells9010224. PMID: 31963216; PMCID: PMC7016566.
 75. Moloney BM, Gilligan KE, Joyce DP, O'Neill CP, O'Brien KP, Khan S, Glynn CL, Waldron RM, Maguire CM, Holian E, Naughton E, Elhadi M, Grealish AB, Malone C, McDermott E, Dockery P, Ritter T, Prina-Mello A, Kerin MJ, Dwyer RM. Investigating the Potential and Pitfalls of EV-Encapsulated MicroRNAs as Circulating Biomarkers of Breast Cancer. *Cells*. 2020 Jan 7;9(1):141. doi: 10.3390/cells9010141. PMID: 31936142; PMCID: PMC7016709.
 76. Sarkar S, Chauhan SKS, Daly J, Natoni A, Fairfield H, Henderson R, Nolan E, Swan D, Hu J, Reagan MR, O'Dwyer M. The CD38^{low} natural killer cell line KHYG1 transiently expressing CD16^{F158V} in combination with daratumumab targets multiple myeloma cells with minimal effector NK cell fratricide. *Cancer Immunol Immunother*. 2020 Mar;69(3):421-434. doi: 10.1007/s00262-019-02477-8. Epub 2020 Jan 9. PMID: 31919623; PMCID: PMC7133790.
 77. Fachal L, ..., Kerin MJ, ..., Miller N, ..., Dunning AM. Fine-mapping of 150 breast cancer risk regions identifies 191 likely target genes. *Nat Genet*. 2020 Jan;52(1):56-73. doi: 10.1038/s41588-019-0537-1. Epub 2020 Jan 7. PMID: 31911677; PMCID: PMC6974400.
 78. Groeben H, Walz MK, Nottebaum BJ, Alesina PF, Greenwald A, Schumann R, Hollmann MW, Schwarte L, Behrends M, Rösse T, Groeben C, Schäfer M, Lowery A, Hirata N, Yamakage M, Miller JA, Cherry TJ, Nelson A, Solorzano CC, Gigliotti B, Wang TS, Wietasch JKG, Friederich P, Sheppard B, Graham PH, Weingarten TN, Sprung

- J. International multicentre review of perioperative management and outcome for catecholamine-producing tumours. *Br J Surg.* 2020 Jan;107(2):e170-e178. doi: 10.1002/bjs.11378. PMID: 31903598; PMCID: PMC8046358.
79. Khan JS, Papa NP, Davis NF, Wrafter PF, Kelly JC, Dowling CM, D'Arcy FT. Is Movember synonymous with moustaches or men's health? An examination of internet search activity for prostate and testicular cancer during the campaign. *Ir J Med Sci.* 2020 Aug;189(3):811-815. doi: 10.1007/s11845-019-02142-0. Epub 2019 Dec 14. PMID: 31838732.
 80. Roncolato FT, O'Connell RL, Joly F, Lanceley A, Hilpert F, Buizen L, Okamoto A, Aotani E, Salutari V, Donnellan P, Oza A, Avall-Lundqvist E, Berek J, Fehm T, Ledermann J, Roemer-Becuwe C, Stockler MR, King MT, Friedlander ML. Predictors of progression free survival, overall survival and early cessation of chemotherapy in women with potentially platinum sensitive (PPS) recurrent ovarian cancer (ROC) starting third or subsequent line(≥3) chemotherapy – The GCIG symptom benefit study (SBS). *Gynecol Oncol.* 2020 Jan;156(1):45-53. doi: 10.1016/j.ygyno.2019.10.001. Epub 2019 Dec 10. PMID: 31836184.
 81. Boland MR, Ryan ÉJ, Dunne E, Ahern TM, Bhatt NR, Lowery AJ. Meta-analysis of the impact of progesterone receptor status on oncological outcomes in oestrogen receptor-positive breast cancer. *Br J Surg.* 2020 Jan;107(1):33-43. doi: 10.1002/bjs.11347. Epub 2019 Nov 22. PMID: 31755998.
 82. Swan D, Delaney C, Natoni A, O'Dwyer M, Krawczyk J. Successful venetoclax salvage in the setting of refractory, dialysis-dependent multiple myeloma with t(11;14). *Haematologica.* 2020 Mar;105(3):e141-e143. doi: 10.3324/haematol.2019.228338. Epub 2019 Nov 21. PMID: 31753932; PMCID: PMC7049357.
 83. Chortis V, Bancos I, Nijman T, Gilligan LC, Taylor AE, Ronchi CL, O'Reilly MW, Schreiner J, Asia M, Riester A, Perotti P, Libé R, Quinkler M, Canu L, Paiva I, Bugalho MJ, Kastelan D, Dennedy MC, Sherlock M, Ambroziak U, Vassiliadi D, Bertherat J, Beuschlein F, Fassnacht M, Deeks JJ, Biehl M, Arlt W. Urine Steroid Metabolomics as a Novel Tool for Detection of Recurrent Adrenocortical Carcinoma. *J Clin Endocrinol Metab.* 2020 Mar 1;105(3):e307–18. doi: 10.1210/clinem/dgz141. PMID: 31665449; PMCID: PMC7112967.
 84. Misund K, Keane N, Stein CK, Asmann YW, Day G, Welsh S, Van Wier SA, Riggs DL, Ahmann G, Chesi M, Viswanatha DS, Kumar SK, Dispenzieri A, Gonzalez-Calle V, Kyle RA, O'Dwyer M, Rajkumar SV, Kortüm KM, Keats JJ; MMRF CoMMpass Network, Fonseca R, Stewart AK, Kuehl WM, Braggio E, Bergsagel PL. MYC dysregulation in the progression of multiple myeloma. *Leukemia.* 2020 Jan;34(1):322-326. doi: 10.1038/s41375-019-0543-4. Epub 2019 Aug 22. PMID: 31439946; PMCID: PMC6923575.
 85. Olivotto IA, Link E, Phillips C, Whelan TJ, Bryant G, Kunkler IH, Westenberg AH, Purohit K, Ahern V, Graham PH, Akra M, McArdle O, Ludbrook JJ, Harvey JA, Maduro JH, Kirkove C, Gruber G, Martin JD, Campbell ID, Delaney GP, Chua BH; BIG 03-07/TROG 07.01 trial investigators. International comparison of cosmetic outcomes of breast conserving surgery and radiation therapy for women with Ductal carcinoma in situ of the breast. *Radiother Oncol.* 2020 Jan;142:180-185. doi: 10.1016/j.radonc.2019.07.024. Epub 2019 Aug 17. PMID: 31431385.
 86. Byrne N, Markham T. Knowledge, attitudes, and behaviours in relation to skin cancer prevention. *Ir J Med Sci.* 2020 Feb;189(1):197-202. doi: 10.1007/s11845-019-02033-4. Epub 2019 May 18. PMID: 31104289.
 87. Natoni A, Farrell ML, Harris S, Falank C, Kirkham-McCarthy L, Macauley MS, Reagan MR, O'Dwyer M. Sialyltransferase inhibition leads to inhibition of tumor cell interactions with E-selectin, VCAM1, and MADCAM1, and improves survival in a human multiple myeloma mouse model. *Haematologica.* 2020 Jan 31;105(2):457-467. doi: 10.3324/haematol.2018.212266. PMID: 31101754; PMCID: PMC7012485.
 88. Russell SP, Neary C, Abd Elwahab S, Powell J, O'Connell N, Power L, Tormey S, Merrigan BA, Lowery AJ. Breast infections - Microbiology and treatment in an era of antibiotic resistance. *Surgeon.* 2020 Feb;18(1):1-7. doi: 10.1016/j.surge.2019.03.008. Epub 2019 May 7. PMID: 31076276.
 89. Arabkari V, Clancy E, Dwyer RM, Kerin MJ, Kalinina O, Holian E, Newell J, Smith TJ. Relative and Absolute Expression Analysis of MicroRNAs Associated with Luminal A Breast Cancer- A Comparison. *Pathol Oncol Res.* 2020 Apr;26(2):833-844. doi: 10.1007/s12253-019-00627-y. Epub 2019 Mar 6. PMID: 30840191.

Palliative Medicine 2020 Publications

- Basquille, E., McKenna, V., Houlihan, A., Molony, K., McNerney, D. V., Mannion, D. E., Barton, D. J., & Waldron, P. D. (2020). An Exploration of the needs of a Cardiac Rehabilitation Population using a Subjective Quality-of-Life Measure. *International Journal of Innovative Research in Medical Science*, 5(06), 189 to 200. <https://doi.org/10.23958/ijirms/vol05-i06/889>
- Kelly D, O'Shea L., Azhar N, Beatty M, Brennock S, Mannion J, Waldron E. Symptomatology at the end of life with COVID-19. *European Geriatric Medicine*. 11 (1 (suppl)), 1-309 2020.

- Mannion, D. E., Gilmartin, P. J., McInerney, D. V., Molony, M. K., Basquille, M. E., & Waldron, P. D. (2020). Exploring the Innate Human Potential for Positive Adaptation in the Face of Impending Mortality: Is there a Response Shift in Subjective Quality of Life over Time in a Group of Patients with Lung Cancer Receiving Palliative Treatment?. *International Journal of Innovative Research in Medical Science*, 5(05), 160 to 168. <https://doi.org/10.23958/ijirms/vol05-i05/880>
- Salmon C, McMahon E, Reilly L, Waldron D, Doherty AM. Anxiety depression and quality of life screening in palliative medicine: community and hospital pilot study. *BMJ Supportive & Palliative Care*. 2020 Jul 9.
- Shockney L. 2020 Top Stories in Metastatic Breast Cancer: Chemotherapy at the End of Life We Can Do Better by Our Patients. *Oncology*. 2020 (dec17). Reference to JCO publication (In: American Society of Clinical Oncology; 2015 below).



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