INTRODUCTION

It is a pleasure to introduce this first annual report of the Trinity St. James’s Cancer Institute. The establishment of the Trinity St. James’s Cancer Institute represents a collaborative joint enterprise between Trinity College Dublin and St. James’s Hospital, combining in a unitary structure our long tradition of outstanding comprehensive cancer care delivered at Ireland’s largest academic health campus at St. James’s, with the research and educational excellence of Trinity College Dublin, Ireland’s leading university.

Our mission is to integrate innovative and groundbreaking cancer science with compassionate, multidisciplinary, patient-focused clinical care through translation of key research findings into real advances for the benefit of our patients. The Institute conducts and supports research, training, education, and health information dissemination, with respect to the causes, diagnosis, prevention, and treatment of cancer and the continuing care of cancer patients and their families.

In this report, we summarize our activity and developments over the last year, aimed at improving outcomes by providing research-led diagnosis and treatment, and by developing a better understanding of cancer through interdisciplinary research. Improving and expanding our clinical trials infrastructure and activity has been a key objective during this phase. We have also worked to develop a comprehensive suite of educational structures designed to support the next generation of cancer clinicians, scientists and healthcare professionals. Trinity St. James’s Cancer Institute is now a member of the OECI (Organisation of European Cancer Institutes), and during 2018, we have been working very actively within the dynamic framework of the ongoing OECI Accreditation and Designation process.

The long-term ambition of the Trinity St. James’s Cancer Institute is to become a fully comprehensive cancer centre with outstanding services in cancer molecular diagnostics, genomics and translational immunology. In this way, we anticipate that the Trinity St. James’s Cancer Institute will provide national leadership, contribute to a decrease in cancer incidence and mortality in Ireland, and represent a standard bearer for cancer care in an international context.

As we summarize in this report aspects of our current activities in education, research and treatment of cancer, our principal focus remains on the provision of the best possible service for patients and their families living with cancer. We are very grateful for the enormous work and efforts of so many colleagues from all disciplines and services whose work is represented here, each one of whom is so committed to improving care and outcomes for our patients with cancer.

Paul Browne
Director,
Trinity St. James’s Cancer Institute
Executive summary

Cancer activity at St. James’s Hospital (SJH) represented approximately 25-30% of daily activity in the hospital. Of the cancer sites audited by the Cancer Audit Programme, there were approximately 3,500 patients diagnosed and/or treated in 2018. Over 10,000 MDT discussions took place in 2018, 9,732 for solid tumours and 1,124 for haematological malignancy.

Comprehensive cancer care is led and supported clinically by the individual clinical leads and the multidisciplinary teams for each cancer type and supported strategically and operationally by executive management and the directorate structures. In 2018, SJH continued to provide KPIs to the National Cancer Control Programme (NCCP) for all cancer related services.

In the context of the Trinity St. James’s Cancer Institute (TSJCI), it was agreed by the Cancer Institute Development Board (CIDG) in 2018 to establish a Clinical Care Oversight group in Q1 2019. The purpose of this group is to:

- Define and monitor performance against agreed key performance indicators (KPIs) to measure key aspects of care from first point of contact to treatment completion.

- Undertake regular monitoring of clinical cancer care activity so that areas and opportunities for improvement are identified and actioned promptly.

- Develop, document and review clinical pathways for major cancer tumour groups.

- Contribute to strategic planning for expansion and development of cancer clinical services at TSJCI.

- Provide monthly progress reports to the Cancer Centre Operating Committee.

The Clinical Pillar will lead cancer pathway development and audit of each pathway and will guide and support the enhancement and structuring of the multidisciplinary team model and meetings. The clinical pillar is also key to facilitating and promoting enhanced

Clinical Lead:

Professor John Reynolds
Consultant Surgeon and Professor of Clinical Surgery
St. James’s Hospital and
Trinity College Dublin
clinical trials capacity and supporting education, learning and training ensure the TSJCI fulfill its ambition to integrate innovative and ground-breaking cancer science with compassionate, multi-disciplinary, patient focused clinical care through translation of key research findings into incremental advances in the prevention, diagnosis and treatment of cancer and so providing national leadership to decrease cancer incidence and continuously improving the cancer patient’s experience and outcome.

The expertise and strengths already within the directorates and broader clinical pillar will be harnessed and supported by the clinical lead and team, executive management and audit. An annual report for each cancer site will be provided, detailing process and outcomes, and will be supported and facilitated by the Cancer Audit Programme and the Cancer Clinical Care Oversight Group.

**Background and framework**

Cancer care is multidisciplinary and provided through the directorate structure. Directorates directly involved in cancer care provision are Surgery Anaesthesia and Critical Care (SACC), Haematology, Medical Oncology including Cancer Genetics, Palliative Care, Psychological Medicine and Radiation Oncology (HOPe), Medicine and Emergency (MED), Laboratory Medicine (LabMed), and Diagnostic Imaging (Diaglm). This multidisciplinary approach to cancer care facilitates best care for patients based on patient experience, safety, clinical excellence and innovation.

On average there are over 4,000 patients diagnosed and/or treated in the hospital per year and cancer workload remains high across all services and directorates. St. James’s Hospital is one of the 8 national cancer centres and is national referral centre for many cancers, including the National Adult Stem Cell Transplant Centre.

Cancer care is supported by access to the Cancer Clinical Trials Office and it’s high quality clinical trials protocols and by clinical support services in Health and Social Care Professions (SCOPe), Pharmacy and the Quality and Safety Improvement Directorate (QSID). Nine multidisciplinary team conferences are held weekly in the Trinity St. James’s Cancer Institute to establish consensus diagnosis and treatment plans for all cancer patients. All MDT conferences bring together expertise from surgery, pathology, radiology, medical and radiation oncology, nursing, data management, clinical trial managers, and in some cases scientific researchers. Each conference is supported by an MDT Co-ordinator. In 2018 there were 10,856 oncology and haematology cancer patient discussions.

St. James’s Hospital has a long history of cancer audit. The Cancer Audit Programme (CAP) was established in 2001 to provide comprehensive prospective data on the structures, processes and outcomes of cancer care provided by the many national, supra-regional and regional cancer services provided at the hospital. 2018 saw the completion of a third Cancer Audit Report (2013-2017) which focused on outcomes, patterns in patient volumes and incidence trends, referral patterns, and complexity of care. Since its inception at St. James’s Hospital, the CAP has supported continuous quality improvement, and has developed in tandem with structural changes including defined multidisciplinary teams, cancer clinics, rapid-access processes and care pathways, and integrated practice units.

This audit provides information that allows patient’s information on institution-specific cure rates and outcomes relevant for a particular cancer and stage of disease and allows the cancer institute to benchmark its care, treatment pathways and outcomes against national and international standards and performance indicators. It also provides a framework for measuring the cost of cancer care.

Key Performance Indicators (KPIs) are regularly reported by each directorate and by the Cancer Audit Programme both internally and externally to National Cancer Control Programme (NCCP), Health Service Executive (HSE) and Health Information and Quality Authority (HIQA).

Trinity St. James’s Cancer Institute also participates in European and international programmes of accreditation, including Joint Accreditation Committee ISCT-Europe & EBMT JACIE) to ensure standards of care at the institute are reflective of international best practice.
Clinical Achievements, Best Practices, Challenges and Constraints

2018 Audits, Accreditation, and Achievements

• In May 2018, the final phase of the application process for JACIE accreditation of the Stem Cell Transplant programme at St. James's Hospital was completed. Following review a date for JACIE accreditation inspection was confirmed for November 2018. The Joint Accreditation Committee of the International Society for Cellular Therapy (ISCT) and the European Group for Blood and Marrow Transplantation (EBMT), JACIE, is Europe’s only official accreditation body in the field of haematopoietic stem cell transplantation (HSCT) and cellular therapy. The inspection involved review by the inspectors of related policies, procedures and guidelines for the clinical, collection and processing aspect of the SCT programme. No key findings were identified during the inspection. The initial inspection report has been completed by the inspectors and this report is currently awaiting review by the JACIE Accreditation Committee. The final inspection report is expected to be available in March 2019.

• In Q4 2018, the CAP in collaboration with Information Management Services (IMS) delivered a full upgrade of the cancer data collection registry system. 14 registries in total were converted from the original format (PATS) to a web based version (Intellect Web). The functions of the cancer audit programme are further supported by the upgrade with enhanced accessibility, reporting, and analysis. Live data capture at MDT meetings is possible and has been rolled out on a phased basis. The upgrade and associated accessibility is an essential component in the delivery of cancer dashboards for the Trinity St. James’s Cancer Institute. CAP continues to collaborate the clinical leads and with IMS to develop activity and KPI dashboards for lung cancer and gastrointestinal cancers in Q2 of 2019 with dashboards for other cancer sites to follow later in 2019.

• In Q4 2018, the CAP compiled a third Cancer Audit Report. Publication of this report is expected in Q1 of 2019. The primary objective of this report is to present a comprehensive audit of cancer care undertaken at
St. James’s Hospital from 2013 to 2017, inclusive. The report includes patterns in patient volumes and incidence trends, referral patterns, and complexity of care. The outcome and process data will be used to compare against published benchmarks from international cancer series, and for national reports.

- An OECI site visit occurred in October 2018. Discussions with the cancer community at TSJCI yielded valuable insight into the accreditation process and site audit visit. All those involved in cancer services continued to engage with the CIDG in preparation for the OECI site visit which is scheduled for April 2019.

- The CAP team in collaboration with the individual clinical leads continued to provide comprehensive Key Performance Indicator (KPI) reports to the National Cancer Control Programme (NCCP) for breast, lung, prostate, oesophageal/gastric and rectal cancers.

- The SJH Endoscopy Department continues to participate and comply with The Joint Advisory Group on Gastrointestinal Endoscopy (JAG). New GRS standards were developed specific to public endoscopy services in the Republic of Ireland and is based on the GRS for UK services. The GRS is maintained by JAG and this version has been developed in conjunction with the Health Service Executive (HSE) National Endoscopy Programme. SJH is JAG accredited since 2012 and the next audit is planned for 2019.

- An ANP in Cancer Survivorship in the HOPe Directorate was appointed in July 2018. The initial phase involved the establishment of ANP Nurse-led Cancer Survivorship clinics which are based in the outpatient setting. The patient groups identified as the priority to be included in the caseload and scope of practice are breast, lymphoma, and testicular cancers.

- In August 2017, the Cardiothoracic service secured funding from the NCCP for an additional registered advanced nurse practitioner (RANP). This additional RANP post was created to facilitate the establishment of a nurse-led lung cancer surveillance and survivorship service. The post holder started in March 2018 and the surveillance and survivorship service commenced in June 2018. All patients who have lung resection for primary lung cancer remain under surveillance for a minimum of 5 years post-surgery. There are three nurse-led clinics each week and patients are seen at a dedicated appointment time. Each clinic review includes a physical and psychosocial assessment, health promotion and review of surveillance radiology. The service also provides a continuum of care between the acute service, patients and their primary care providers as the RANP managing the service can be contacted between appointments if necessary via email or mobile phone.

- Radiation Oncology introduced motion management techniques for lung cancer patients.

- Diagnostic and interventional radiology secured additional equipment (3 MRI units, 3 CT units 3 mammography units).

- In house PDL1 immuno-histochemical staining of non-small cell lung carcinoma was introduced in 2018 with results used by oncology colleagues to assess patient suitability for immune checkpoint inhibitor therapies. This has been integrated into the molecular diagnostic report providing all relevant molecular and protein expression data for therapy selection.

New Appointments and Staff Changes

- Radiation Oncology: Dr Naomi Lavan  
- Consultant Surgical Gynaecologist: Dr Claire Thompson  
- Consultant Upper GI Surgeon: Ms Clare Donohoe  
- Cancer Genetics Consultant: Post approved 2018  
- Genetics Counsellor: Post approved 2018  
- Dr Fergal Kelleher took over the sarcoma medical oncology patient cohort from Dr Cliona Grant  
- rANP HOPe: Ms Catherine O’Brien  
- ANP Cardiothoracics: Ms Niamh Kiely and Ms Eimear Lodge
Key Priorities

The primary objective of the clinical pillar in the hospital is to drive the provision of safe, effective, research-driven multidisciplinary, patient-centred cancer care and to identify through pathway analysis, opportunities to improve patient care and outcomes. It is the ambition of the clinical pillar to further integrate clinical care with science, molecular diagnostics, and research to establish new structures and policies targeting prevention, access to novel therapies, improved treatments and patient outcomes.

The clinical leads within the clinical pillar will come together with their operational supports to enhance multidisciplinary care and patient outcomes and support the expansion of cancer clinical trials, supporting access for our patients to targeted therapies.

The clinical pillar will lead the development and definition of clinical pathways for our major tumour sites and ensure these pathways are audited and analysed regularly to identify opportunities for improvement of cancer care.

Detailed annual reports on diagnostics, treatment trends and clinical outcomes will be published and presented to the TSJCI to support and inform enhancements in patient care to help anticipate future care needs.
Nursing

Executive Summary

Nurses caring for patients with a cancer engage with them along a trajectory that includes diagnoses, surgery, radiation, chemotherapy, survivorship and if required specialist palliative care. The care of these patients is provided by dynamic, educated, competent and caring nurses working across all clinical directorates within St. James’s Hospital.

This report will outline the achievements and advances in nursing professionally and through research and audit. The future development and planning of patient services by nurses are strategic and varied as outlined in this report.

Background

Nursing teams caring for patients with a cancer diagnosis span all clinical directorates within the organisation: Medical, Surgical, Oncology and Haematology and the Care of the Elderly which include both inpatient and ambulatory care services. This ensures that high quality and safe patient care is provided throughout. Nurses caring for patients with cancer throughout the organisation are supported in advancing their clinical practices and decision making skills by Clinical Nurse Manager colleagues to ensure that such high standards are maintained.

The Bone Marrow Transplant Unit provides a national service for a rising number of patients requiring bone marrow transplant. Recent JACIE accreditation late in 2018 has ensured that up to date evidenced based protocols and standards are employed within the Stem Cell Transplant service.

Audit & Research

Audit and research activities are of paramount importance to the nursing team in St. James’s Hospital (SJH) and evidence of it is apparent at different levels throughout the organisation.

Audit and Research is one of the core competencies

Nursing Lead:

Ms. Sharon Slattery
Director of Nursing, St. James's Hospital

Ms. Amy Nolan
Lead Cancer Nurse
for Clinical Nurse Specialists and registered Advanced Nurse Practitioners throughout the organisation and priority is given to this aspect of their role. Nurses in other nursing roles are also encouraged and supported to partake in audit and research activities.

SJH has a research collaborative agreement with the Trinity Centre for Practice and Healthcare Innovation since 2012. The aim of this agreement is to enhance the research capacity of nurses working in SJH.

The Cancer Nursing Research Group within the organisation comprises of a Director of Research from the School of Nursing Trinity College Dublin (TCD), and a researcher from the Nursing Research Collaboration Group within TCD and nurses working in cancer care across SJH. The group actively encourages and supports nurses to become proficient and confident in academic writing, critiquing literature, undertaking research and publishing their findings.

Cancer nursing staff continue to represent SJH and their cancer speciality at both national and international cancer conferences thereby keeping abreast and participating in current standards of cancer care.

From an international nursing perspective, in 2018 the European wide ESMART research project was rolled out in SJH. This is a European nursing study monitoring chemotherapy toxicities and their effect on a patient’s quality of life during chemotherapy treatment. Recruitment for the study was undertaken in the Haematology and Oncology Day Centre (HODC) and Donal Hollywood Ward (a specialised cancer ward in SJH).

Achievements and Challenges

Advancing Nursing Practice:

Following the publication of the National Cancer Strategy 2017-2026 a number of Key Performance Indicators (KPIs) and recommendations were identified. Furthermore the strategy recognised the role that nurses working in advanced nursing posts could play in helping to realise these KPIs and recommendations. Nurses in advanced practice positions ensure that the cancer patient’s healthcare needs will be met though impeccable assessment, planning, implementing, coordinating, monitoring, and evaluating of care all of which are underpinned by appropriate expert knowledge, autonomy, expertise of practice and professional and clinical leadership.

The appointment of a Registered Advanced Nurse Practitioner (RANP) in Cancer Survivorship, Cardiothoracic and Palliative Care have been valuable additions to the patients experience in recent years. Historically palliative care services in the acute hospital setting have been confined to inpatient services. However, most cancers are treated without the need for admission to hospital. Confining the provision of palliative care only to those in an inpatient setting denies a significant majority of ambulatory palliative care patients receiving anti-cancer treatment access to palliative care. The introduction of the RANP in Specialist Palliative Care in February 2017 ensures a safe transition and a continuity of care between healthcare settings and healthcare professionals. The RANP in palliative care acting in an advanced nursing, patient centred capacity spans traditional boundaries to provide timely and appropriate specialist knowledge and skill sets to the ambulatory palliative care patient, their family, multidisciplinary team members, other healthcare organisations, and to healthcare professionals in the primary care setting.

In June 2018 an RANP nurse-led lung cancer surveillance and survivorship service was established. All patients who have lung resection for primary lung cancer remain under surveillance for a minimum of five years post-surgery. There are three RANP led clinics each week and patients are seen at a dedicated appointment time. Each clinic review includes a physical and psychosocial assessment, health promotion and review of surveillance radiology. The service also provides a continuum of care between the acute service, patients and their primary care providers as the RANP managing the service can be contacted between appointments if necessary via email or mobile phone.

The RANP in Cancer Survivorship was appointed in July 2018. The role of the RANP in Cancer Survivorship in St. James’s Hospital is in the early stages and will con-
Nursing continue to develop in collaboration with the National Cancer Control Programme (NCCP). The initial phase involved the establishment of RANP Nurse-led Cancer Survivorship clinics which are based in the outpatient setting. The patient groups identified as the priority to be included in the caseload and scope of practice is breast, lymphoma and testicular cancers. The overall purpose of the service is to provide safe, timely, evidenced based nurse-led care to patients at an advanced nursing level. This involves undertaking and documenting complete episodes of patient care, which includes comprehensive assessment, diagnosis, planning, treating and the discharging of patients in accordance with collaboratively agreed local policies, procedures, protocols and guidelines and/or service level agreements/memoranda of understanding. The specific purpose of the RANP in Cancer Survivorship is to empower patients to achieve their best possible health. A new advanced nursing post in diagnostics was established in the Breast Care Service with the support of the NCCP. The successful candidate ANP was appointed in December 2018.

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

- Fundamentals of Oncology Programme
- Fundamentals of Haematology Programme
- Palliative Care Foundation Programme
- Psych-Oncology Programme
- Foundation in Stoma Care
• Post Graduate Diploma in Cancer Care & Haematology in Trinity College Dublin

• MSc in Cancer Care & Haematology

• Weekly Journal Clubs (both Medical & Nursing facilitated)

The HOPe Directorate has developed a Foundation course in Haematology and Cancer Care which will commence in the first quarter 2019.

Nursing Grand rounds is a new initiative commencing in early 2019 with the aim of sharing quality service developments and practice initiatives across the hospital.

Key Priorities

Future Developments

Recruitment of a project nurse in Q 1 2019 to examine the current practices and management of the acutely unwell oncology, haematology, radiation oncology and palliative care patient, who come through the Emergency Department or HODC and to develop a pathway for the management of these patients is imminent.

Early 2019 will see the recruitment of a Dermatology Clinical Nurse Specialist. The principle role of this advanced nursing post is to facilitate the journey of each patient diagnosed with a malignant melanoma across the Dublin Midlands Hospital Group. The introduction of a coordinated nurse led rapid access pigmented lesion clinic will address the growing figures of melanoma with access to nurse led dermoscopy and advanced wound care management.

Also, early 2019 will see the recruitment of a Thyroid Disease Clinical Nurse Specialist. This pan-hospital post and will see a standardised pathway of care for patients in the Dublin Midlands Hospital Group diagnosed with thyroid cancer and requiring radioactive iodine treatment. The TCD School of Nursing and Midwifery and St. James’s Hospital are building their capacity within nursing to make a more substantial contribution to leading the cancer nursing care research agenda in Ireland.

Key to this is the establishment of a Nursing Professor in Cancer Care as a joint appointment between the two organisations. The Nursing Professor in Cancer Care will have a dual role of facilitating and leading on establishing and progressing a strong nursing research base within the organisation and being proactive in the in strategic planning and implementation of cancer nursing. It is foreseen that as part of this strategy cancer nurses will be encouraged and facilitated to undertake Masters and Doctoral programs to further strengthen the nursing research agenda within the organisation.

Conclusion

Cancer care in our hospital spans across all of our clinical directorates and involves many MDT professionals.

The nursing team consider OECI accreditation a fantastic opportunity to advance nursing in our hospital clinically and in nursing research. There are many academic opportunities through our strong established relationship with TCD.

For many cancer patients their journey includes radiation and we proud of the strong nursing relationship with the on campus St Luke’s Hospital Radiation Oncology Centre.

St. James’s Hospital is a dynamic and exciting healthcare campus with a large complement of highly competent and skilled nursing colleagues working in cancer care. We have the largest number of nurses in the country working in advanced nursing positions such as Clinical Nurse Specialists, Registered Nurse Prescribers and Registered Advanced Nurse Practitioners.

The focus of nursing care is on quality, research, education and clinical competence. We relish the opportunity to engage in OECI accreditation which we believe will bring multiple benefits to nursing and to patients and will ensure the patient remains at the forefront of what we do in this hospital. OECI accreditation will continue the momentum towards positive change and keep this organisation where it has been for many years, as a leader of healthcare in this country.
**Executive Summary**

The Cancer Clinical Trials Office is a well-established team of Principal Investigators (Medical Oncologists, Haematologists and Surgeons), research nurses, data managers, a senior pharmacist and a programme manager.

Our aim is to provide cancer patients with access to the latest cutting edge treatments and to conduct our research to the highest standard, being GCP and GDPR compliant.

**Background**

The Cancer Clinical Trials Office was founded in 2003 on foot of a grant from the HRB. This grant facilitated the hiring of research nurses, data managers and a programme manager. The HRB still continue to provide us with this grant.

As the portfolio of clinical trials grew so did the size of the team, we now employ 5 data managers, 7 CNM2 research nurses, a clinical trials pharmacist and a programme manager. We conduct many different types of cancer research; clinical trials, surgical trials, Quality of Life studies and biomarker studies. Due to the high volume of cancer patients being treated at SJH we can sometimes be the only site in Ireland for a clinical trial and in those situations we will receive referrals from all over the country.

**Achievement and Challenges**

In the past year,

1) We created a set of Standard Operating Procedures for all the major processes that we undertake within our unit. These SOPs are available on the SJH intranet for reference.

2) We opened our first joint clinical trial with St Luke’s Hospital in Rathgar. This trial involves administering

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**Clinical Trials Leads:**

**Prof Elisabeth Vandenberghe**  
Consultant Haematologist and Director of Cancer Clinical Trials, St. James’s Hospital

**Prof Maeve Lowery**  
Consultant Oncologist, Professor Translational Medicine, Trinity College Dublin
chemoradiotherapy +/- immunotherapy to patients with Head and Neck Cancer. We enrolled three patients to this trial.

3) We opened our first trial involving the Nuclear Medicine Department in SJH. This trial involves administering a form of radio immunotherapy to patients with relapsed non-Hodgkins Lymphoma

We became a member of the Hovon Group, a Dutch research group specialising in malignant haematological diseases. We now have access to some very interesting haematology trials which we plan to open in 2019.

**Capacity Building**

The percentage of patients who are enrolled onto cancer clinical trials is approx. 2%. This is in keeping with the national average. However the aim over the next five years is to increase that percentage year on year from 2% to 8%. This will involve widening our PI (Principal Investigator) base, conducting a gap analysis of the portfolio and filling the gap ensuring that we have a 1st and 2nd line trial in all disease areas. With outside investment we would employ additional staff to allow this expansion, one such key position being a full time research registrar.

**Conclusion**

The Cancer Clinical Trials Pillar will be tightly linked with the Research Pillar. The aim being that we will develop proof of concept investigator-led trials, further allowing us to expand our portfolio of trials and allowing us to have a balance of pharmaceutical sponsored and academic trials.
EXECUTIVE SUMMARY

Research in cancer at the Trinity St. James’s Cancer Institute incorporates basic biomedical and biomolecular research based at the Trinity Biomedical Science Institute (TBSI), the Trinity Translational Medicine Institute (TTMI), Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN) and the Institute for Population Health (IPH) in Tallaght Hospital.

Our research vision is to advance cancer care through internationally recognised translational research, planning and delivery of services leading to better treatments, prevention and care focused on improvements in health status and quality of life for people in Ireland and beyond.

More specifically our goals are to:

1. Enhance the quality and value of our patient care.

2. Decrease the burden of cancer by conducting focused, impactful laboratory and clinical and translational research into cancer prevention, causes, multi-modal therapies and survivorship.

3. Position TSJCI as a nationally and internationally recognised hub for cancer research.

4. Educate the next generation of cancer researchers, clinicians and allied health professionals through a structured graduate and fellowship programme, structured schedule of relevant seminars and opportunities for public patient involvement for all TSJCI PhD, post-doctoral and senior fellow researchers.

5. Provide sustainable, long term support to Cancer Research within TSJCI, by building and maintaining a community of highly skilled world class researchers and attracting internationally competitive scientists to the Institute.

Research Lead:

Prof John O’Leary
Professor Consultant, Histopathology
Professor Consultant, Molecular Medicine Ireland

Dr. Patricia Doherty
Senior Research Programme Officer (Cancer)
Background

At present, there are over 230 researchers from schools and Institutes across Trinity College Dublin and its affiliated hospitals/Institutions, actively working on cancer projects as part of a vibrant interdisciplinary research community. These are strategically allied to therapeutic areas including the Schools of Chemistry, Biochemistry and Immunology and Pharmacy & Pharmaceutical Science who are focused on the development of new anti-cancer drugs.

In addition, the School of Nursing and Midwifery carries out innovative, patient-centered research and the Discipline of Radiation Therapy focuses on the informatics of health care for cancer and also the development of more finely targeted therapies for social conditions. TSJCI researchers working at the Children’s Research Centre with clinicians at Our Lady’s Hospital for Sick Children, Crumlin in the area of pediatric cancer are making a significant contribution to the fight against childhood cancer. TSJCI researchers participate in international cancer research consortia at the highest level and are part of an extensive international research network with links to centers of excellence in the US, Europe, Asia, Australia and Africa. In the period from 2013-2017 we collaborated with 246 academic institutions in 31 countries and 118 industry partners in 19 countries. We have a proven track record of high quality cancer research and ability to attract significant funding.

In 2018, a data driven review of our research (including funding, publications, trial income, and innovation metrics) has given rise to a new organisational structure for Cancer Research at TSJCI. Each research programme (focused on a cancer type) has a designated clinical and scientific lead to organise and drive research for this area, and to lead strategic development. Underlying these are translational research themes which will provide the structure for multidisciplinary research projects with researchers from TBSI, Smurfit Institute for Genetics, CRANN and TTMI, funding applications and training programmes. The clinical and academic leads have been chosen on the basis of clinical and research excellence with demonstrable co-complementarity in the chosen fields. These clinicians and scientists have made significant contributions in their fields both nationally and internationally and have established significant links with national and international competent agencies working in clinical cancer care and research. The selection of clinical and scientific leads follows best international practice in the area in order to achieve a fusion of idea- tion in these chosen clinical-research areas: essentially achieving a full-translational pipeline from basic discovery to the bedside.

Achievement and Challenges

Researchers at TSJCI were awarded over €10 million in external grant income in the 2017 academic year and published over 220 papers (in high impact journals such as Journal of Clinical Oncology, Lancet Oncology, Nature Medicine, Nature Communications, Journal of the American Medical Association and Nature Methods). In addition there are a number of major research initiatives currently running.

1. TRAIN-EV is a €3.9 million TCD-led (Prof. Lorraine O’Driscoll) H2020 funded network involving 14 academic and industrial partners across Europe (2017-2021). TRAIN-EV (Training in Extracellular Vesicles: For Benefit in Health and Disease) will coordinate fifteen highly inter-disciplinary and inter-sectoral projects to synergise the existing EV research activities and to develop a novel research training programme.

2. DISCOVARY is an international trans-institutional multidisciplinary consortium based in Trinity College Dublin which was formed to improve the mortality associated with ovarian cancer through improved diagnosis and treatment. The DISCOVARY consortium supports the development of translational research in Ireland. The Trinity College based DISCOVARY consortium has merged with the research community, clinicians and charities in Ireland to form INNOVATION- the Irish National Network for Ovarian Cancer Collaboration. The mission of INNOVATION is the integration of patient clinical management with cutting edge research to improve the diagnosis and treatment of ovarian cancer.
http://www.crdi.ie/research/innovation/. The consortium has raised in excess of 3.2 million euros in grant income.

3. TRACT (Training in Cancer Mechanisms and Therapeutics) is a €2.9 million Horizon 2020 funded project (2016-2020) enabling eleven PhD Fellows to complete research projects in three critical areas: biomarker discovery, molecular resistance mechanisms and metabolic transformation mechanisms in oral and oesophageal cancers, led by Prof. Daniela Zisterer.

4. CERVIVA, [www.cerviva.ie] the Irish Cervical Screening Research Consortium, was established in 2005 and was initially funded by the HRB Health Services Research Award scheme to perform high quality research in the area of cervical screening in Ireland, with an overarching aim of supporting CervicalCheck [the National Cervical Screening Programme]. CERVIVA has raised in excess of 19.5 million euros in grant income and has recently secured the development of the National Screening Laboratory.

5. Neo-AEGIS Trial (Neoadjuvant trial in adenocarcinoma of the oesophagus and oesophagogastric junction international study), led by Prof John Reynolds is evaluating one, two and three year survival of patients treated with resection plus neoadjuvant and adjuvant chemotherapy versus resection plus neoadjuvant chemo radiotherapy, in addition to collection of blood and tissue specimens for the Upper GI translational research programme.

The restructure of our research programmes aims to bring together our spectrum of researchers in order to consolidate and strengthen the interdisciplinary nature of research at TSJCI and formulate a comprehensive SWOT analysis. We have identified a number of key challenges faced by our research programmes. These include:

- Need for dedicated resources in biostatistics and bioinformatics.
- Need for dedicated, permanent positions in tissue procurement and bioresourcing.
• Seed funding to bolster areas of strategic importance.
• Lack of protected time for research active clinicians.

Key Priorities

In the next five years, we wish to develop a comprehensive integrated cancer programme based on clinical and scientific excellence in parallel with the development of the physical institute. Our objectives are:

1. To develop TSJCI as an integrated core facility, with a new build anticipated for a Cancer Institute on the St. James’s Hospital site.

2. To prioritise and implement a cancer research development plan.

3. To develop a business plan for essential research investment for immediate infrastructure and key recruitment needs.

4. To initiate quarterly research forums bringing together clinicians, researchers and industry partners to foster opportunities to discuss grand challenges, research findings and opportunities for collaboration.

5. To establish a Cancer Enterprise Unit (CEU). This unit has the mandate to support the Institute in the discovery, development, commercialisation and business execution of industry partnerships. The CEU will be co-located across St. James and the Trinity’s main university campus, staffing with be initially by part-time secondment/repurposing from existing administrative positions with Trinity Research and Innovation Office, the School of Medicine and St. James Hospital, itself. As the business model matures and additional revenue sources are established, new hires will be added into the CEU and resources balanced accordingly.

6. To build capacity in cancer research including cancer immunology, systems biology, cancer epidemiology and biostatistics.

7. Through excellence in research and teaching, fuel the pipeline to generate clinical and research leaders in cancer.

8. To advocate at a national and European level for increased funding for basic and translational cancer research.

9. To continue to advocate for the patient voice in cancer and consolidate all patient engagement in cancer at TSJCI through recruitment of a dedicated PPI coordinator.

Capacity Building

Our approach to capacity building is the 3I’s principle: Investing in Ideas, Investing in Individuals and Investing in Infrastructure.

We aim to build capacity in cancer research including: cancer immunology, systems biology, cancer epidemiology, occupational therapy and biostatistics.

We aim to build capacity by increasing the number of clinicians and healthcare workers undertaking higher degrees at MSc, MD and PhD level.

We intend to build capacity in terms of the education: developing cancer screening educational programmes, programmes in cancer epidemiology etc.

In addition, we wish to prioritise investigator led trials at TSJCI.

Conclusion

Our vision for integrating cancer care, basic research, systems biology, informatics, translational research, diagnostics, therapeutics (theranostics), clinical trials, global health and health policy and management delivers the complete value chain in a modern cancer medicine ecosystem.

Cancer Research at TSJCI aspires to expand on existing strengths and form novel synergies linking cancer care, research, prevention and education. It delivers advanced comprehensive care to adults and children including access to clinical trials and will conduct cutting-edge cancer research focusing on the overarching theme of ‘cancer as a chronic disease’.
Executive Summary

Education mission: Everyone involved in cancer care within the Trinity St. James’s Cancer Institute will have access to world-class cancer training, education and information. We will educate and train the next generation of cancer researchers, clinicians and health care professionals through flexible designed cancer education programmes. We have four structured programmes addressing the education needs along the career development pathway of our trainees. Our education strategy is mapped to our thematic research strengths. Engaging with other cancer Institutes globally through education mobility programmes is key, in addition to partnering with industry. Under education, we also embrace working closely with schools, patients, and public and with cancer charities, ultimately positioning the Trinity St. James’s Cancer Institute as a hub for cancer education.

Background

Within the Trinity St. James’s Cancer Institute Cancer Education Pillar, there are four programmes as illustrated below. An education advisory board has been established and will work closely with the Cancer Institute Executive Committee to develop and execute these programmes.

PROGRAMME 1: Ph.D. Scholarship Training Programme
What changes will this make to our current Ph.D. training schemes in cancer education?

1. New Cancer Ph.D. training will be developed and structured
   a) Supervision structure will be different: Scientific and Clinical PI supervision.
   b) Carry our research rotations (currently not in the system)
   c) Cross discipline designed projects for maximum impact

Education Lead:

Professor Jacintha O’Sullivan
Prof. in Translational Oncology
Director of MSc. in Translational Oncology
d) Tailor the education modules to complement translational Ph.D. project of trainees

e) International mobility training element incorporated (increase global connections for TCD e.g.: with other Cancer Institutes)

f) PPI engagement

g) Links with Industry

h) Links with the Clinical Trial Network in the Cancer Institute

i) Significant increase in scholarly activity: publications, citations, international presentations, research impact

j) Structure competitive for ITN Marie Curie Ph.D. training network and Collaborative Doctoral Awards

**PROGRAMME 2: Postdoctoral/Research Fellow Training**
What changes will this make to our current postdoctoral training schemes?

1. A new career mentoring structure will be developed and offered to cancer fellow trainees: to enhance success (funding, teaching, industry connections and in dissemination activities)

2. Allow engagement of trainees in teaching activities in the new cancer education strands (programme 3)

3. Allow tailoring of education modules to complement translational work (continued education at fellow level which is not currently offered)

4. International mobility training element incorporated (increase global connections for TCD e.g.: with other Cancer Institutes at fellow trainee level)

5. PPI engagement

6. Links with Industry

7. Significant increase in scholarly activity: publications, citations, international presentations, research impact

This training structure will improve our competitiveness for SIRG, CDA, EIA, IRC Laureate & Marie Curie awards. An output of this programme is to train the new generation of cancer leaders in the Cancer Institute

**PROGRAMME 3: Cancer Education Taught Programmes**
What changes will this make to cancer education opportunities for clinicians, scientists, health care professionals and allied health care workers?

*TCD: a world leader in cancer education*

For the first time we will

1. Deliver cancer modules across different disciplines to TCD/St. James’s staff

2. Deliver cancer modules (CDP) to other national and international Universities and Hospitals (including online module development), & including industry partners

3. TCD will be the hub for Cancer Education with development of online modules.

4. New Cancer Strand Development from current successful MSc. in Translational Oncology

   a) Lifestyle Interventions, Cancer Prevention and Cancer Survivorship

   b) Precision Medicine: the way to personalised medicine

   c) Drug Development: from discovery to innovation to commercialisation

   d) Cancer Immunology: Immunotherapy (attracting national and international graduates from different disciplines to each of the specialised strands)
PROGRAMME 4: Cancer Outreach and Advocacy Programme
What changes will this make to cancer outreach work, linking with different communities, charities, patient groups and the public?

We will

1. develop a focused cancer outreach programme
2. have a designated PPI lead for cancer activities (Have business and scientific background expertise)
3. be the hub for Cancer Outreach work
4. PPI lead will work closely TCD Foundation, national charities, patient groups, public
5. PPI lead will direct STEM activities with national schools

This programme will deliver excellence in Cancer Education to wider audiences, showcasing excellence in patient care for our cancer patients within Trinity St. James’s Cancer Institute.

Achievements and Challenges

In the past year, we have

1) Designed the structure of the above programmes and have received feedback from experienced stakeholders in this area (clinical teams, allied health care workers, health care professional, scientists and from patients).

2) Financial projections (5 years) to fund these four programmes have been developed.

3) Education Advisory Board has been established. This group as of March 2019 will meet every six weeks and feedback to the Cancer Executive Board the priorities for Education and Timelines to execute and fund activities.
Key Priorities

The key priorities for the first 5 years are outlined below.

YEAR 1

- Recruit Ussher in Cancer Education (Development of programme 3 in year 1).
- Roll out the Ph.D. Scholarship and Fellowship programme.
- Development of new cancer strands.
- Development of a Career Mentoring structure for programme 2.
- Engagement with industry on Education Strategy.
- Engagement with global partners from other Cancer institutes.

YEAR 2

- Offer education modules for programme 3 as a Cancer Education Hub.
- New strand roll out.
- Annual recruitment to Scholarship and Fellowship programme.
- Research mobility placements activated with other Cancer institutes.
- Recruit PPI Cancer Director: formalise cancer outreach activities: strategy development.
- Roll out of Career Mentoring to Fellows (Grants, papers, Teaching, Outreach).

YEAR 3-5

- Offer education modules for programme 3 as a Cancer education Hub.
- Continued recruitment to the new cancer strands.
- Annual recruitment to Scholarship and Fellowship Programme.
- PPI development plan roll out with the TCD Foundation.

Capacity Building

The four programmes outlined above will increase in capacity with annual recruitment to each of the programmes. The programmes are designed to allow flexible training and development to fit the needs of the trainees be it clinicians, scientists and all health care professionals/allied health care workers. Importantly, the patient advocacy and education outreach programme will allow the Trinity St. James’s Cancer Institute to build connections with the wider community.

Conclusion

The Cancer Education Strategy will be tightly connected to the Research and Clinical Trial pillars of activity within the institute to create an integrated platform to best deliver world class cancer education to our trainees. We will continuously respond to the evolving cancer education training needs of our trainees.

The Trinity St. James’s Cancer Institute Education Pillar will strive to act as the hub for Cancer Education nationally.
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