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Dear Colleagues and Friends

I am pleased to welcome you to the School of Medicine’s collections of articles on our response to the Covid-19 crisis. The purpose is to provide a cross section of the School’s activities in relation to teaching, research and clinical practice and to give you an appreciation of the depth and breadth of the work going on.

During these times of upheaval and uncertainty, the School staff have shown great strength and resilience by solving immediate problems, such as getting the final year teaching and examinations completed; taking on leadership roles in the University and Health Services; and coming up with ideas to better understand the virus and its impact on our physical and mental health, society, ageing, and to develop potential treatments and preventative strategies. Much of the work of School staff takes place out of the glare of publicity, and is imaginative, supportive, and collaborative, and I am enormously grateful to everyone for their hard work.

I am also proud of, and grateful for, the maturity and resilience of our students from all years and aspiring professions. They have had to cope with such uncertainty at a formative time of their lives, for many while separated from their families and friends. Their knowledge and skills will make them valuable additions to our health and social care workforce.

The research projects outlined are only some of those underway – many more exciting projects are planned and await funding or are underway in pilot form. We are in serious financial difficulties as a country and University, but research is crucial in how we learn to live with the effects of the pandemic, and as we slowly emerge into the new normal. We will continue to seek support from National and International funding agencies, and from philanthropic donations to continue and expand our research and if you are in a position to assist, we will be grateful to hear from you.

I would like to take this opportunity to wish you all the very best in your own academic response to Covid-19, for your present and future health and that of your families and communities.

Professor Michael Gill
Head of School
We are very proud of the resilience they have shown during this difficult period in their lives and we wish them well in their future careers.

Professor Joe Harbison, Director of Undergraduate Teaching and Learning
The COVID-19 pandemic has proven a challenge for the Education Division in delivering both teaching and assessment. Fortunately it occurred at a point where the School had begun the process of rolling out technology for online teaching and consequently we were better placed than many to adapt to the changing circumstances. We have also been fortunate in our assessment of the likely timing and effect of local and national mitigation actions that we have been able to introduce contingency measures as early as possible in a fashion that has minimised disruption.

We have managed to deliver most aspects of our courses with very few changes in content, delivering our curricula ‘virtually’ across 16 Countries and 16 time zones. Lectures have been recorded and delivered using Panopto voice capture software with lectures also delivered ‘live’ over Zoom lecture. Smaller group teaching has been delivered both using similar technology and with ultimate seminar facilities available on our Virtual Learning environment. Some practical demonstrations have required filming by academics in isolation and then placed on the learning environment for students to observe. We have maintained a continual communication with class representatives during this time to keep classes informed of developments.

The School managed to conduct the last ‘in-person’ exam in the college before the lockdown on 9 March. Before this however, we recognised the challenges that we would face in delivering Clinical Exams in hospitals facing an influx of people with COVID-19. From 5 March we had realised that our Final Year exams scheduled for the third week in April were no longer feasible. We informed our students of this at the earliest point possible and, with the cooperation and help of our Clinical Academic Colleagues and our partner teaching hospitals, managed to conduct a modified Clinical exam on 12 April. Whilst this was six weeks ahead of schedule, we were able to give our students more notice than in other institutions.

Other than clinical exams, we have managed to adapt planned assessments into online versions with little change in structure thanks to the skill of our Information Technology department and our Learning Technologist Mary O’Neill. We successfully administered complex examinations such as Anatomy exams using virtual presence technology.

Having completed Final Year clinical, written and viva voce exams, the University conducted our first virtual Graduation, streamed online while students participated in a Mega–Zoom meeting. These graduates will begin their careers earlier than normal in the last week of May. We are very proud of the resilience they have shown during this difficult period in their lives and we wish them well in their future careers.
POSTGRADUATE KEYNOTE:

Postgraduate response to COVID-19

Our postgraduate PhD, MD and MSc research students are rising to the challenge of COVID-19, displaying imagination, enthusiasm and flexibility in continuing with their research projects.

New sub-projects and chapters are being created with supervisors and are being explored where students are creating new research questions that can be undertaken in non-laboratory environments. For the first time ever, thesis dissertations are being submitted online, and fully-remote viva events are taking place where internal examiners, external examiners, chairs and students are engaging in thesis defense. Some of our postgraduate research students are also electing to place their research on hold in an effort to support the national response against COVID-19.

Our postgraduate taught courses have also taken to the changes head on. Course Directors have worked hard to organise changes to courses and quickly developed methods for online teaching and implemented online and distance based assessments. Our PGT students have also been engaging in new ways to conduct the research parts of their MSc degrees with research supervisors. The 400-plus postgraduate students within our School of Medicine continue to demonstrate passion, resilience and rigor supported by supervisors, course executive staff and course directors.

Professor Kumlesh K. Dev, Director of Postgraduate Teaching and Learning
Amongst all of the trials and tribulations of a Medicine degree which must be undergone to qualify as a doctor, having your final clinical examination brought forward by six weeks was up there with the most challenging. Rumours spread like wildfire when whisperings of the imminent announcement of this began. However, after the initial shock, it was remarkable to see the nature of how cool, calm and collected we coped with it, and got on with what was to be a fair and effective clinical exam which maintained the academic integrity of our degree.

Preparation for the written exams began quickly after, and while this was a daunting task, it also presented an opportunity to take advantage of three full weeks to study. For those students used to studying at home, the changes were more subtle, however those who frequent the library no doubt found the change much more striking! The changes in teaching were also quite significant, particularly with lectures given online to an empty room, with a limited opportunity to ask questions. However, we were assured with every change that the exams would be run in the most secure way possible, and the success of the online examinations is a tribute to the amount of work put in by the School and the administration staff to ensure the transition was as smooth as possible.

While we missed out on celebrating results with our colleagues and the signature class photograph on the steps of the Moyne Institute with the faculty, a heartwarming ‘Mega-Zoom’ call following our last exam went some way to make up for this.

The prospect of entering the medical workforce two months prematurely evokes complex feelings: some common to all incoming interns, and some unique to our situation. The overlap with current interns will ease the transition from student to doctor, but the anticipation of the unknown and the challenge of the evolving situation is daunting for many. While we inevitably struggle with that perpetual feeling of unpreparedness, we take comfort in knowing that we have had a wonderful education, and that the years of hard work and training will stand to us for the rest of our careers.
We’ve really entered uncharted territory, which is why research is so important – we need to rely on data, not guesses or anecdote.”

Dr Ian Kelleher, TCD Psychiatry
The negative effects of the pandemic and public health interventions (such as cocooning) will have serious implications for longer-term physical wellbeing, mental and cognitive health. This may lead to a social as well as economic recession in the coming months and years. In order to assist public health policy makers and healthcare systems understand the effect of the pandemic on older adults, the HRB has funded a study into the consequences of COVID-19 on the lives of older adults. Leading the study is the country’s foremost authority on ageing, Prof Rose Anne Kenny, who has mobilised a team of researchers, including members from the Department of Health and Health Service Executive.

The project will rapidly administer a Self-Completion Questionnaire which is designed to collect information on the experience of older adults of COVID-19 symptomology and testing; changes to behaviours in response to emergency public health interventions; and the effect of the pandemic on physical, mental, and cognitive wellbeing. The data collected during the project will be linked to an existing 10-years of social, economic and health data collected by TILDA therefore creating an invaluable epidemiological resource to support future tailored public health decision-making.

“...The measures which have been introduced as a result of COVID-19 have particularly impacted on the lives of people over 70. The research will further enquire about the impact of these policies on mental and physical health and hear the voice and views of those most affected. This is important if we are to understand and manage the collateral damage from COVID-19. ”

RESEARCH KEYNOTE:
Advocating for our aged
Altered lives in a time of crisis: Preparing for recovery from the impact of the COVID-19 pandemic on the lives of older adults

Professor Rose Anne Kenny
Head of Discipline of Medical Gerontology
RESEARCH KEYNOTE:
Responding with research:
Trinity Translational Medicine Institute responds to COVID-19

Professor Aideen Long
Director of Trinity Translational Medicine Institute

The Trinity Translational Medicine Institute (TTMI), is a vibrant research centre on the site of St James’s Hospital that normally hums with research and teaching activities, seminars and meetings. It serves as an incubator for research questions between the School of Medicine Trinity’s most eminent scientists and clinicians. The recent weeks of the COVID-19 crisis, however have been a time like no other. Suddenly, the institute and its researchers have been at the epicentre of a national medical emergency with many of us working from home. Faced with this challenge, our researchers had to rise to the global challenge to understand, treat and prevent COVID-19.

COVID-19 is a new disease; our clinical researchers are making observations about their patients that have informed many research ideas. Our clinical researchers and scientists are asking how we can detect the illness earlier, understand the body’s unique responses to the illness and provide treatments and vaccines.

The unique infrastructures in TTMI allow us to conduct complex research in COVID-19. Our containment Level 3 facilities allow us to process patient samples and research with the live virus safely and TrinSeq, the genome sequencing facility allows for DNA, RNA and single cell sequencing. As a translational institute, TTMI has enormous biobanking capacities. We are working closely with SJH and the Wellcome Trust-HRB funded Clinical Research Facility to establish a COVID-19 patient registry and biobank (St James’s TCD Allied Research (STAR) Collaboration for COVID-19). This is central to our COVID-19 research plans to find solutions for virus testing, prognostic assays to predict responses post infection and to identify novel immunomodulatory strategies to prevent the severe Immune Response to SARS-CoV-2 during COVID-19 disease.

These resources and infrastructures have facilitated successful grants funded by the Health Research Board and Science Foundation Ireland already. Additionally, we submitted a joint SFI strategic partnership application, ‘How immunology can help to address the COVID-19 epidemic in Ireland’ with our colleagues in TBSI, and the outcome is anticipated.

Although we have been challenged to new ways of working, we see the current challenges as opportunity for TTMI to further our research mission to consolidate clinical and research expertise across the SJH campus with the common aim of slowing progression of SARS-CoV-2 infection, improving patient outcome and returning life in Ireland to ‘normal’ as quickly as possible.
Philanthropy enables the School of Medicine to fund people and projects that will ensure that Trinity continues to make an impact on Ireland and the world and to inspire many more generations to come. Philanthropic donations of any size have a real impact. Recently, Dr Ethna McGourt, M.B. (1980), and her husband, Timothy Haley, made a generous gift to establish the Dr Eithne Walls Memorial Scholarship in memory of her niece, whose life was tragically cut short in the Air France disaster on 1 June 2009. Dr Eithne Walls studied medicine in Trinity and graduated in 2007. Dr Walls and fellow alumni Dr Jane Deasy, M.B. (2007) and Dr Aisling Butler, M.B. (2007), were returning from a trip to Brazil when their plane disappeared. The Scholarship will be held between the Hospital (RVEEH), where Dr Eithne Walls was Senior House Officer in Ophthalmology, and Trinity. The research will seek to better understand the causes of Ophthalmological disorders to improve treatment.

Philanthropy has enabled Trinity to respond rapidly and effectively to the COVID-19 crisis. The Trinity Covid-19 Immunology Project has been established to leverage Trinity’s Immunology expertise and frontline clinical specialisms to accelerate research with the objective to control the epidemic in Ireland and contribute to the global effort to discover new drugs and vaccines. AIB has given a €2.4 million gift towards this vital research.

If you would like to discuss a philanthropic gift to the School of Medicine, please contact Sonya Perkins, Associate Director, Trinity Development & Alumni

sonya.perkins@tcd.ie

Inspiring Generations:
The role of Philantropy in the School of Medicine allowed a rapid response to the COVID-19 pandemic

PHILANTHROPY KEYNOTE:

Dr Eithne Walls
Government invests in School of Medicine Projects to tackle COVID-19

The Health Research Board, Science Foundation Ireland and the Irish Research Council have awarded 6 School of Medicine PIs, to date, under the new COVID-19 Rapid Response Funding programme. The projects address health, health services, social and policy countermeasures and innovations aimed at addressing the various challenges of the disease. A brief sketch of the successful PIs and their respective projects are outlined below:

Creating a public health toolbox for COVID-19: a cross-border analysis
Principal Investigator: Professor Catherine Darker, Associate Professor of Health Services Research, Public Health & Primary Care, Trinity College Dublin

In addition to testing/contact tracing, behavioural responses (e.g., hand washing) and social responses (e.g., social distancing/cocooning) are the most effective tools for stopping COVID-19. Psychological (e.g., how likely you believe it is that you will contract the disease) and contextual factors (government, public health messaging etc.) are likely to drive these behaviours. The team will explore the implications of COVID-19 in terms of these responses both in the Republic of Ireland and Northern Ireland. Speaking about the award, Prof Darker said: “On the island of Ireland there are two different governments and public health jurisdictions. This represents a unique opportunity to explore the implications of different measures and messaging relating to COVID-19. We will produce a public health toolbox that will guide both public health and political leaders for any further surges of COVID-19 or indeed for future epidemics or pandemics.”

For more: https://www.tcd.ie/medicine/research/news/covid-research-news/spotlight/

Using Telehealth to enhance management of vulnerable groups during the COVID Crisis
Principal Investigator: Professor Orla Hardiman BSc, MD, FRCPI, FTCD, MRIA, Professor of Neurology

Prof Hardiman’s team will implement, evaluate and modify a new patient/caregiver-oriented telemedicine system to provide immediate virtual support for those with Motor Neuron Disease (MND) and Frontotemporal Dementia (FTD) and then tailor the system to enhance care for Irish patients and their families. Remote and accurate tracking of clinical symptoms, early recognition of new symptoms and timely home-based visits are very important in rapidly progressive illness. The telemedicine system will efficiently monitor people in real time, and deploy team members to those most in need, allowing continuation of high-quality patient centred care despite the limitations posed by COVID-19.

For more: https://www.tcd.ie/medicine/research/news/covid-research-news/spotlight/
**An opportunity to assess COVID-19 rates and phenotypes in older adults in Ireland**

**Principal Investigator: Dr Nollaig Bourke, Dept of Medical Gerontology, & Trinity Translational Medicine Institute (TTMI)**

Dr Bourke and her team will investigate the ‘who’ and ‘why’ of COVID-19 in older people in Ireland. They will investigate which participants of the Irish Longitudinal Study on Ageing (TILDA) had COVID-19 by measuring virus specific antibody levels and will explore what risk factors are associated with disease, including analysis of how the immune system is activated in these individuals.

Speaking about her award, Dr Bourke said, “Older people in Ireland are disproportionately affected by COVID-19, so it is really important that we have accurate national rates of infection in this population (including asymptomatic individuals). It is also very important that we understand who got sick and why, so by doing our proposed in-depth research into risk factors associated with COVID-19 disease in older people in Ireland, including detailed analysis of their immune system, we will potentially be able to explain why someone might be more likely to experience severe COVID-19 disease. This could help us identify high risk individuals, as well as reveal what parts of the immune system would best be targeted therapeutically in individuals.”

For more: [https://www.tcd.ie/medicine/research/news/covid-research-news/spotlight/](https://www.tcd.ie/medicine/research/news/covid-research-news/spotlight/)

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**Defining the disease course and immune profile of COVID-19 in the immunsuppressed patient**

**Principal Investigator: Professor Mark Little, Professor/Consultant of Nephrology, Clinical Medicine**

Professor Little and his team will better understand how the immune system responds to the virus and assess whether immunosuppressive therapies could be used to treat COVID-19. It will also assist in providing clear guidance to patients with respect to cocooning and current use of immunosuppressant medication. Speaking about the award, Professor Mark Little said, “The DECOMPRESS project will determine the outcome of patients taking immunosuppressive medication who contract SARS-CoV2. This will allow us to target accurate advice regarding cocooning to these patients, and to inform development of new therapies and biomarkers. Conventionally, we assume that, when the immune system is suppressed, the ability to fight infection is impaired. While this is certainly true generally, these medications may protect against the “cytokine storm” that characterises severe COVID-19. The project will build on work in the Irish Rare Kidney Disease registry and biobank, and will incorporate six clinical research facilities around Ireland, a dedicated smartphone app developed by patientMpower, the immunology expertise of St James’s Hospital and the data integration capability of the ADAPT SFI centre.”

For more: [https://www.tcd.ie/medicine/research/news/covid-research-news/spotlight/](https://www.tcd.ie/medicine/research/news/covid-research-news/spotlight/)

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**Finding the signals to quickly identify patients at risk of severe disease in COVID-19**

**Principal Investigator: Dr Ignacio Martin-Loeches, ICU Consultant and Clinical Senior Lecturer**

This study will analyse samples from patients infected with the COVID-19 virus and measure aspects of their immune responses. By comparing these responses to the level of illness that the patients develop, the researchers will identify immune ‘signatures’ in patients that could signal a higher risk of becoming very sick with COVID-19. The project will also help us to better understand how our immune systems respond to the virus and will thereby inform potentially better ways to treat the disease and develop strategies for immunity. Speaking about the award, Dr Ignacio Martin-Loeches, Vice-Chair of Intensive Care Medicine at Trinity College Dublin, said “I am very grateful for SFI to have funded a clinical Doctor working in the front line to understand the disease better with cutting edge technology”.

For more: [https://www.tcd.ie/medicine/research/news/covid-research-news/spotlight/](https://www.tcd.ie/medicine/research/news/covid-research-news/spotlight/)

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**Preparing for recovery from the impact of COVID-19 on the lives of older adults**

**Principal Investigator: Professor Rose-Anne Kenny, Professor Geriatric Medicine/Consultant (Medical Gerontology), Trinity College Dublin**

Older persons are most likely to experience severe and critical consequences of COVID-19 including death. The ability to mount an immune response declines with age. Understanding immunosenescence (the gradual deterioration of the immune system brought on by natural age advancement), its relationship to COVID-19 and therefore its impact on future vaccination responsiveness is a priority.

For more: [https://www.tcd.ie/medicine/research/news/covid-research-news/spotlight/](https://www.tcd.ie/medicine/research/news/covid-research-news/spotlight/)
COVID-19, the illness associated with SARS-CoV2, is a new and unpredictable disease that confounds clinicians. Certain groups of patients have known vulnerabilities to severe disease, such as those over 70 years, the immunocompromised, those with obesity or respiratory disease. However, young and apparently healthy patients also succumb to this disease and increased disease severity is also seen in ethnic minorities. Anecdotally familial disease responses, such as twins and siblings both enduring severe disease and death, have also been reported. Early ‘guestimates’ suggest that disease response may be 50% heritable in addition to other factors such as environment and health status.

A global consortium, the Global COVID-19 Host Genetics Initiative comprised of world leading genome centres have pledged pooled resources to study the whole genome sequences of patients affected by COVID-19. These data will be shared with the global research community for research into the host genetic response to the SARS-CoV2 virus. Coupled with key clinical and demographic information, this can provide a powerful resource to study this new and challenging disease. Genome Medicine Ireland, a private genome sequencing company in Ireland, has pledged to contribute to this effort by sequencing 500 genomes from Irish patients freely. They aim to return these data to the Irish and global research communities.

Whole genome sequencing is the process of reading the entire genetic code of an individual. This provides code for the genes that encode the protein building blocks of the body and crucially also the code for parts of the genome that regulate gene expression. The genome sequence of COVID-19 patients will be a unique resource, helping us to understand how COVID-19 affects individuals differently. It may answer the question of whether severe COVID-19 illness is related to a weak immune system, or conversely to an overactive immune system, launching a so-called ‘cytokine storm’. It may also answer questions about the role of genetic variation in certain genes that increase susceptibility to respiratory disease, e.g., the angiotensin converting enzyme -2 (ACE-2) receptor, and therefore associated with increased risk of infection from the virus. Understanding these susceptibilities to infection or severe disease can help identify molecular targets for new therapies and inform more precise treatments for the individual patient.

The task of analysing and interpreting whole genome data requires considerable expertise and understanding. Genomics is a core strength of the Trinity Translational Medicine Centre (TTMI). We have unique resources such as TrinSeq and whole genome data management and analysis pipelines. We have experts in whole genome data analysis and access to the COVID-19 registry that will provide key clinical and demographic data. As clinicians and genetics researchers we also have a nuanced understanding of the complexity of handling genomics data ethically and responsibly. For this reason, TTMI aims to host these data and become the national centre for COVID-19 genomics. In order to do so, we will considerably upscale our current data storage and bio-computing capacity to provide critical infrastructures for the Irish scientific and clinical communities. Our timelines for these upgrades are short, as the data will be imminently available. We are actively engaging with funders and philanthropic sources to address this need so that we can progress timely COVID-19 genomics research that will provide answers for clinicians to effectively treat their patients.

RESEARCH KEYNOTE:
Research in focus:
What can our genomes tell us about the COVID-19 illness?
Professor Louise Gallagher
Director of Research
MENTAL HEALTH RESEARCH & COVID-19

Coping with Coronavirus: How to Stay Calm and Protect your Mental Health
Principal Investigator: Professor Brendan Kelly, Professor of Psychiatry, TCD

The anxiety associated with the coronavirus crisis is different to the anxiety seen in traditional disorders, because demonstrably there is something to fear. Professor Brendan Kelly’s, new book “Coping With Coronavirus: How to Stay Calm and Protect Your Mental Health – A Psychological Toolkit” offers readers all the practical tools to navigate these dark, uncertain days. The guide is designed to assure readers that, just as we are capable of finding sophisticated ways to make ourselves more anxious, we are equally good at using anxiety-management techniques to manage our mental health. All royalties from this book will be donated to medical charities assisting with the global response to coronavirus.

To order: https://irishacademicpress.ie/product/coping-with-coronavirus/

Impact of COVID-19 on ECT
Electroconvulsive therapy (ECT)
Principal Investigator: Prof Declan Mc Loughlin, Research Professor of Psychiatry, TCD

Health care workers are at higher risk of exposure to COVID-19 and use of Personal Protective Equipment (PPE) is a key component in mitigating this risk. Current efforts worldwide to secure PPE are well documented. However, less documented are the risks to ECT practitioners, who are continuing to treat critically ill patients with this essential therapy.

A newly released paper by Prof Declan Mc Loughlin, Research Professor of Psychiatry, TCD and St Patrick’s University Hospital, entitled “Immediate impact of COVID-19 on ECT practice” outlines the impact of COVID-19 on the provision of ECT.

This paper features in the Journal of ECT: https://journals.lww.com/ectjournal/Citation/9000/Images_in_Clinical_ECT__Immediate_impact_of.99061.aspx

PURCHASE THE BOOK »
Support for people with dementia locked down at home
Principal Investigator: Professor Iracema Leroi, Associate Professor/Consultant, Psychiatry

Ameliorating hearing and vision impairment in older people to improve mental well-being is the aim of the Horizon 2020 funded, ‘SENSE-Cog’ a trans-European program led by Professor Iracema Leroi from the Global Brain Health Institute. The ‘SENSE-Cog Trial’, within the program, is evaluating a home-based ‘sensory support intervention’ to improve quality of life and other outcomes for people with dementia. Now, due to COVID-19 lock-down and physical distancing restrictions, conducting face-to-face hearing and vision assessments with older participants, all of whom are considered ‘vulnerable’ and at high risk of contracting the virus, has not been possible. However, the team, led in Dublin by Professor Brian Lawlor, has made rapid adjustments, ‘COVID-proofing’ the trial in different ways across the five European countries involved. For more go to: https://www.sense-cog.eu/

Tele-rehabilitation During COVID-19
Principal Investigator: Dr Dara Meldrum, Senior Research Fellow, Clinical Medicine, TCD

During the COVID-19 crisis, patients are understandably reluctant to come to hospital for out-patient treatment and hospitals are endeavouring to reduce face to face contact where possible, to reduce transmission. Many out-patient appointments are curtailed or cancelled but patients still require rehabilitation and a significant backlog is developing. VertiGenius, being developed at the Academic Unit of Neurology, in a project led by Dr Dara Meldrum, will help solve these problems. It is a mobile health application that digitally delivers rehabilitation programmes to patients with dizziness, vertigo and imbalance so that they can do their rehabilitation at home whilst still being monitored by their health care professional. VertiGenius connects the patient to the clinic and educates and empowers the patient.

For more go to: https://www.tcd.ie/medicine/research/news/covid-research-news/news-updates/
Children’s Immune Responses to COVID-19
Principal Investigator: Professor Eleanor Molloy, Professor of Paediatrics & Child Health, TCD

Children are more frequently hospitalised with respiratory viral illness compared with adults. However, in the COVID-19 pandemic children and new-borns have less severe disease than adults. Understanding immune dysregulation across the age continuum is the subject of 3 recent papers by Professor Eleanor Molloy.


The effects of COVID-19 crisis on mental health of children and adolescents
Principal Investigator, Dr Ian Kelleher, TCD Psychiatry

Dr Ian Kelleher, TCD Psychiatry and Lucena Clinic, is analysing data from secondary and tertiary mental health services to help understand the effects of the COVID-19 crisis on young people’s mental health, including changes in self-harm and suicidal behaviour.

“There is potential for this crisis to have both negative and positive effects on young people’s mental health”, Dr Kelleher said. “We’ve really entered uncharted territory, which is why research is so important – we need to rely on data, not guesses or anecdote. The findings from this study will allow us to effectively plan our responses in mental health services”.

For more go to: https://www.tcd.ie/medicine/research/news/covid-research-news/news-updates/
GP Community Tracker data playing a key role in fight against COVID-19
Principal Investigator, Dr Darach Ó Ciardha, GP and Assistant Professor, Public Health and Primary Care, TCD

The COVID-19 Community Tracker has been operational for the last two months, allowing GPs to report the number of clinically diagnosed cases they see on a daily basis. As many cases do not fulfil the criteria for testing currently, this is the sole means of estimating the true burden of disease in the community. The tracker serves as an early warning system for Public Health, identifying national and regional COVID-19 clusters in real time. Aggregate data is now provided to the Department of Health and CSO daily to assist COVID-19 considerations and related public health measures. The GP COVID-19 Community Tracker has been developed by a group including Dr Darach Ó Ciardha, GP and Assistant Professor, Public Health and Primary Care, TCD and Dr Dylan Creane, Data Analyst, Institute of Population Health, TCD. The group also includes Dr Shane McKeogh, GP and Co-founder of GPBuddy.ie, Dr Knut Moe, GP and Tony Ryan, CEO of Medvault, Joe Newell and Eoin Newell of GPBuddy.ie.

Dr Tony Holohan applauded the initiative during his daily RTE broadcast on 30/04/2020. To listen: https://www.youtube.com/watch?v=4JZJmr7AJ9s
Covid-19 crisis an opportunity to build a one-tier health system
Principal Investigator, Dr Sara Burke, Assistant Professor of Health Policy, TCD

One of the most important things to emerge from the Covid-19 crisis is an understanding of what it would be like to have a one-tier health care system, "to have access based on need with all facilities working in the public interest." This is the opinion espoused by Dr Sara Burke, Assistant Professor of Health Policy, in an interview on the Sean O’Rourke Show Broadcast on RTE on 23 April. Dr Cliona Ní Cheallaigh, Consultant in Infectious Diseases, St James’s Hospital also spoke to Sean about what it is like working on the front line in a COVID-19 ward in St James’s Hospital.

Listen to the full interview here: https://www.rte.ie/radio/radioplayer/html5/#/radio1/21756454

How is the Irish health system responding to Covid-19?
Principal Investigator, Professor Steve Thomas, Edward Kennedy Professor of Health Policy, Public Health & Primary Care, TCD

The Centre for Health Policy and Management Researchers are reporting on the effects of the Covid-19 crisis on the Irish health system and the responsiveness of our health service in dealing with unprecedented demand. The team from the centre led by Director Steve Thomas, in conjunction with the Centre for Global Health and the HSE publish a blog post charting Ireland’s response to the pandemic. The COVID-19 Health System Response Monitor is hosted on the University of Cambridge’s Core Blog. The Centre for Health Policy and Management staff have also contributed to the new WHO Health System Response Monitor Covid-19 specific page which was launched in mid-April to monitor the policy responses to the pandemic.

For more: https://www.cambridge.org/core/blog/2020/04/06/irelands-response-to-the-coronavirus-pandemic/

Below: Professor Steve Thomas, Edward Kennedy Professor of Health Policy, Public Health & Primary Care, TCD
It is important to help preserve a sense of humanity for those who are most vulnerable under our care.”

Professor Seamas Donnelly
The COVID-19 pandemic has had huge clinical, research and educational implications for the intensive care unit in St James’s Hospital. Structurally, a period of rapid preparation involved extending the footprint of the ICU to accommodate an anticipated demand for up to 90-100 ventilated patients with donning/doffing stations constructed at strategic sites around the ICU. Equipment supplies were sourced under challenging circumstances given the high worldwide demand. Huge tech support was achieved, involving the expansion of the ICU electronic patient record and ICU telecommunications. Medical, nursing and allied health staff deployment helped address staff shortfalls due to contacts and infection.

Processes of care were refined to enhance patient flow and to ensure high quality medical care of COVID and non-COVID patients with critical illness. Dedicated clinical teams were allocated to intubations, patient prone positioning, central venous catheter insertion, and to family liaison, overseen by daily consultant, NCHD and nursing coordinators. Clinical handovers were modified to maintain face-to-face format which conformed to social distancing rules. Wellbeing supports were made available to staff.

As of 28/4/20, 45 patients have been admitted to the ICU with confirmed SARS-CoV2. These patients had a high incidence of hypertension and diabetes, 80% had moderate-severe ARDS and 71% required invasive mechanical ventilation. Survival was very favourable when compared with national data.

Education in the ICU has been challenging but a mantra of “academic continuity” (*Samarasekera*) has prevailed. Medical and nursing workshops prepared staff, deployed from non-ICU areas, for ICU clinical duties. Panopto recorded lectures have been used for undergraduate and postgraduate learning. A departmental social media tool has been used to disseminated clinical updates, key published literature, and educational pearls during the pandemic. There have been rich opportunities for the appraisal of rapid-publication observational studies and for bedside teaching about ARDS and mechanical ventilation. We strive to maintain a sense of “a staff community”, thereby supporting staff professional identity and perceptions of self-value in the workplace.

ICU research efforts have focused on existing concerns about immunodeficiency in critically ill patients with SARS-CoV2. In parallel, there are concerns about immune over-response in these patients. To date there is no validated model that can effectively identify immunological parameters in COVID-19 patients in the ICU. Identifying blood cell immune response profiles using transcriptome analysis with single-cell resolution may both clarify the molecular mechanism of cytokine release syndrome (CRS) and identify specific protein antibodies that are potentially involved in the enhancement mechanism, immune deficiency or immune overresponse that results in the condition of patients with COVID-19 becoming critical or severe.

No pharmaceutical products have yet been shown to be safe and effective for the treatment of COVID-19. However, a number of medicines have been suggested as potential investigational therapies, many of which are now being or will soon be studied in clinical trials, including the SOLIDARITY trial co-sponsored by WHO and participating countries.

The Wellcome - HRB Clinical Research Facility at St James’s Hospital is primed to join the WHO “Solidarity Trial an international clinical trial which will compare four treatment options against standard of care, to assess their relative effectiveness against COVID-19. By enrolling patients in multiple countries, the Solidarity trial aims to rapidly discover whether any of the drugs slow disease progression or improve survival. Other drugs can be added based on emerging evidence.

Until there is sufficient evidence, WHO cautions against physicians and medical associations recommending or administering these unproven treatments to patients with COVID-19 or people self-medicating with them. WHO is concerned by reports of individuals self-medicating with chloroquine and causing themselves serious harm.

WHO guidance on compassionate use can be found at https://www.who.int/news-room/commentaries/detail/off-label-use-of-medicines-for-covid-19.
It seems like a lifetime ago that the SARS-CoV-2 pandemic was just a shadow on the horizon. In late February/early March it became apparent that it was on its way to Ireland. Our first priorities were to prepare for the expected impact of the pandemic and protect both our patients, staff and our medical students. Final Med clinical exams were brought forward and we adopted new ways of engaging with medical students of differing years. The class of 2020 showed amazing fortitude and solidarity, the lecturers performed miracles and 180 students had their clinical exams 6 weeks early, on the day the first case of COVID-19 infection was admitted to St James’s Hospital. These colleagues have now graduated and will join the front-line in the coming weeks. We are looking forward to working with them.

The Discipline of Clinical Medicine has a lot of expertise in clinical infectious diseases. Supported by Prof Keane, Head of Discipline and Prof Gill, Head of School; Prof Bergin, Prof Ni Cheallaigh and Drs Kerr, Townsend, Browne and Grant were rapidly redeployed to the coronavirus teams in St James’s Hospital. Their experience in looking after COVID-19 patients highlighted the pressing need for research to inform practice. Collaborations formed rapidly with researchers in TCD and other institutions to address knowledge gaps, including: understanding the role of the immune system in COVID-19, designing vaccines against SARS-CoV2 and finding out which medications work in COVID-19 as part of large international clinical trials.

Prof Bergin also plays a key role advising the government as a member of the National Public Health Emergency Team (NPHET) and the Expert Advisory Group (EAG). Prof Ni Cheallaigh’s expertise in Inclusion Health (healthcare specifically designed to meet the needs of people who are homeless, use drugs or are otherwise marginalised) has enabled her to contribute to the remarkable national response to COVID-19 in homeless people. Both have featured extensively in national media coverage on COVID-19 policy, their research endeavours, as well as advocacy for individuals living in Direct Provision and Roma communities.

Links to media coverage from members of the School:
https://www.medicalindependent.ie/measures-to-provide-covid-19-testing-and-accommodation-for-homeless-underway/?platform=hootsuite
In a time of crisis neither science nor politics have all the answers. Instead both must come together with the public to construct ethical and measured decisions about treatments, testing and prevention, even when the evidence at first seems incomplete and uncertain. As Michael Ryan the Director of Emergency Preparedness at the WHO said referring to COVID-19 “be fast, move first – have no regrets.”

The role of the Clinical Research Facility as a vital part of the research infrastructure is to stand firm alongside clinical colleagues and scientists. It aims to ensure every rare and valuable patient encounter counts in the fight against COVID, to perform and inform rapid and innovative COVID-19 research. Most importantly to be the curator of the clinical and biological history of the pandemic so that when this phase is over researchers can turn towards prevention, so that after the surge can come the recovery, and that our experience will help other countries to lift themselves out of the COVID-19 Crisis.

**Documenting the pandemic to solve the unknown challenges of COVID-19**

The CRF, collaborators at St James’s Hospital, Trinity Translational Medicine Institute and international colleagues have initiated a COVID-19 bioresource (STAR) of clinical data and samples. Seamlessly integrated into the care pathway, patients are working in partnership with us to solve the challenge of Covid. By exploring the immunology of viral response we will better understand who gains immunity. By investigating the genetic make-up of those infected we can identify those most at risk and why. By investigating genomic development of the virus over time we can get ahead of its evolution in our future plan for preparedness, by developing antibody tests and vaccines.

**Benchmarking the Irish response to COVID-19**

Data from Irish patients at St James’s and Tallaght Hospitals is being entered into the Global COVID-19 registry SPRINT –SARI. This allows us to reference our care pathways and efforts against actions taken globally, and we will have rapid access to the best data and collaborators worldwide so we can focus on control and elimination of current, and future, coronavirus outbreaks.

**Protecting Healthcare Workers worldwide**

Healthcare workers are at the frontline of the fight against COVID, and as such are at high risk for serious infection. The CROWN CORONATION trial re-purposes an inexpensive anti-malarial drug, chloroquine, to test if it can prevent coronavirus infection in essential workers. This global study with sites in Africa and led by the CRF and Professor Ellen O’Sullivan in Ireland, prioritises the protection of healthcare workers as a strategy to prevent collapse of healthcare services especially in resource poor settings.

**Solidarity in finding new pathways and Treatments**

Everything we do in the months ahead will be based on collectively seeking and acting on evidence. Right now just a handful of drugs seem to have effects in lab-based settings on coronavirus but it’s unknown if they work in humans. The CRF in collaboration with Professor Colm Bergin is taking part in the WHO SOLIDARITY Trial, to test these critical drugs in hospitalised patients and ICU settings and adapt care flexibly and rapidly based on developing evidence. Time is critical, research resources are focused towards reducing COVID-19 mortality and morbidity as soon as possible. This has led to unique and unprecedented collaborations between nations and between the public and private sectors across the World in a global effort to control the pandemic.

WHO guidance on compassionate use can be found at: https://www.who.int/news-room/commentaries/detail/off-label-use-of-medicines-for-covid-19
Connecting families separated by COVID-19

Dr Ruaidhri Keane and Dr Caoimhe McGarvey

COVID-19 hospital in-patients are not allowed visitors. These measures are considered necessary to decrease transmission rates, however, their opportunity cost is the isolation of our friends and family members when they may need us the most. We were made aware of the tragic isolation of an elderly patient receiving end of life care due to COVID-19 in our hospital. Patient isolation may be overcome with digital devices, such as, the Apple iPad which via video chatting provide a convenient solution to a complex problem.

We sought advice from Accenture’s innovation centre The Dock, which is based here in Dublin. They investigated various solutions and found that medical grade protective covers for an iPad were difficult to source in the current environment. They then evaluated the use of polyethylene zip-lock food storage bags and found them to be a low cost and disposable solution.

After consultation our microbiology colleagues, we successfully trialed the use of polyethylene zip lock bags as iPad covers on a COVID-19 designated ward (See Fig 1). We developed a simple aseptic technique to remove the iPad from the Ziploc bag to allow its reuse. A survey of patients and their families revealed a universal positive response allowing direct video engagement between concerned family members and their relative in hospital.

In these challenging COVID-19 times, where hospitals are under increasing pressures, it is important to help preserve a sense of humanity for those who are most vulnerable under our care.

Information for Healthcare workers - the role of an academic public health specialist

Professor Catherine Hayes - Assoc Professor/Specialist in Public Health, TCD

In my role as a public health specialist I work on the dedicated helpline set up to deal with COVID-related queries from health professionals. The helpline operates from the Public Health Department at Dr Steevens’ Hospital. Callers to the helpline typically include GPs, Directors of Nursing in Residential Care Facilities, Hospital Consultants, Health Care Workers (HCW). Calls are triaged by a nurse. My role is to manage complex queries and to sign off on all queries. The nature of the queries varies depending on when new guidance or change in guidance are issued. Commonest queries include public health management of cases and outbreaks in general practice and assistance with nursing homes/residential service outbreaks. The HSE Health Protection Surveillance Centre www.hpsc.ie is an excellent source of information on all aspects of COVID-19.

Peer-led Addiction Recovery initiative to cope during COVID-19

Professor Joe Barry and Dr Jo-Hanna Ivers

Professor Joe Barry and Dr Jo-Hanna Ivers run College’s MSc in Addiction Recovery. Both are also board members of the Recovery Academy of Ireland (RAI). The RAI has developed a Recovery Coaches’ training programme, to qualify persons in recovery to provide peer support. Six weeks into their placements the country went into lockdown. Here six of the coaches describe how they went from initially experiencing helplessness to pro-actively documenting how they have constructively faced the challenges of the lockdown. These brave and inspiring stories are being shared widely on social media.
Exercise during the COVID-19 pandemic - a lifeline, a privilege, an opportunity
Dr Cuisle Forde - Assistant Professor, Discipline of Physiotherapy

The COVID-19 pandemic has changed the way we live and brings challenges for everyone on a daily basis. One such challenge is keeping physically fit. From the very outset of this pandemic, the importance of keeping fit was mentioned by the government, but with gyms, clubs, swimming pools and other such amenities closed, many people cannot get the exercise they’re used to. On the other hand, some people who may have been “time poor” due to work or long commutes may now find the time, but are out of practice. If you are lucky enough not to be sick, then whether you are self-isolating, cocooning or working from home, it’s important to stay healthy.

A lifeline

The benefits of exercise on your health are undisputed. If we stay moving during this pandemic we have a better chance of bouncing back to our pre-pandemic selves when this is over. People who exercise regularly are less likely to get ill and end up in hospital. Yes, keeping yourself healthy now will help our front-line health workers during and after this pandemic. As well as that, being active helps reduce stress and has proven benefits for our mental health, something many of us will be struggling with in these trying times.

A privilege and opportunity

Being able to exercise outdoors daily is a privilege during this crisis. It is something we should respect and use wisely. Exercise safely and alone or with members of your household. For many people, exercise is a social activity but learning to exercise alone is a skill that will stand to you. Those who can self-motivate to exercise are more likely to stay physically active over time. Challenge yourself to self-motivate and reap the benefits for a lifetime.

The role of Physiotherapy throughout the COVID-19 Recovery Trajectory
Dr Julie Broderick, Discipline of Physiotherapy

From information available so far it appears the majority of people who get COVID-19 will suffer a mild to moderate disease and will recover. A smaller number (13.8%) will have severe disease and 6.1% are critical. Physiotherapists have a role throughout the COVID-19 disease trajectory from initial acute illness to recovery. In the acute hospital setting, physiotherapists remotely screen referred patients using electronic records where possible and available medical information. This is to minimise unnecessary exposure to COVID-19 patients. They also link in with the healthcare team and access tests such as x-rays and arterial blood gases and will weigh up on a case-by-case basis if there is an indication or a need for physiotherapy treatment at this stage.

READ THE FULL ARTICLE ONLINE »

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Several of the School’s disciplines and labs in TBSI have donated personal protective equipment such as gloves, masks, goggles and gowns to St James’s and Tallaght Hospitals to help healthcare workers. This initiative was coordinated by School Manager, Dr Alex McKee, with help from Dr Evi Numan Kontogoni, and Fiona Brown from the Faculty of Health Sciences. We are also grateful for the assistance of Prof Tomas Ryan (Biochemistry and Immunology). The initiative gathered a substantial amount of PPE, with contributions from many Schools around college, who all mobilised at short notice to gather equipment in TBSI for delivery to the hospitals.

Edited from an article in University Times by Emma Donohoe

SCIENCE & RESEARCH CORRESPONDENT

Trinity Donates Medical Equipment to Hospitals

Several of the School’s disciplines and labs in TBSI have donated personal protective equipment such as gloves, masks, goggles and gowns to St James’s and Tallaght Hospitals to help healthcare workers. This initiative was coordinated by School Manager, Dr Alex McKee, with help from Dr Evi Numan Kontogoni, and Fiona Brown from the Faculty of Health Sciences. We are also grateful for the assistance of Prof Tomas Ryan (Biochemistry and Immunology). The initiative gathered a substantial amount of PPE, with contributions from many Schools around college, who all mobilised at short notice to gather equipment in TBSI for delivery to the hospitals.

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READ THE FULL ARTICLE ONLINE »
COVID-19 preparedness for radiotherapy departments - towards consensus on best practice
Michelle Leech, Associate Professor and Head of Discipline of Radiation Therapy

Michelle Leech, Associate Professor and Head of Discipline of Radiation Therapy recently contributed to an expert panel webinar on COVID-19 preparedness for radiotherapy departments for the International Atomic Agency. The webinar was live attended by over 2,000 radiation oncology professionals internationally and is available at: https://humanhealth.iaea.org/HHW/

Recommendations for Radiation Therapists (RTTs) during Covid-19 pandemic.

Radiation therapists are frontline staff who continue to deliver treatment to cancer patients during the Covid-19 pandemic under difficult circumstances. Michelle Leech, Associate Professor and Head of Discipline of Radiation Therapy led the development of the European Society for Radiotherapy and Oncology (ESTRO) recommendations for RTTs during Covid-19 pandemic, which are available at: https://www.estro.org/About/Newsroom/News/COVID-19-RECOMMENDATIONS-FOR-RTTS-ESTRO-RTT-COMMIT

Low dose radiation therapy in the reduction of lung inflammation for COVID-19 patients.
Dr. Laure Marignol, Associate Professor in Radiobiology at the Discipline of Radiation

Dr. Laure Marignol, Associate Professor in Radiobiology at the Discipline of Radiation participated in international discussions involving radiation oncologists, radiobiologists and physicists for the development of clinical trial proposal testing the ability for low dose radiation therapy to reduce lung inflammation in COVID-19 patients, leveraging early twentieth century success in reducing pneumonia mortality with low dose (<100 cGy) radiotherapy. The protocol, initially aimed at severely ill patients, is currently under ethical review in several institution worldwide.