



**FACULTY OF  
PUBLIC HEALTH  
MEDICINE**

ROYAL COLLEGE OF  
PHYSICIANS OF IRELAND

# Summer Scientific Meeting 2019

## BOOK OF ABSTRACTS



Three Minute Magic presentations .....	4
#HACKTHEPAIN- A MYNI SOCIAL MEDIA CAMPAIGN FOR SUPPORTED SELF MANAGEMENT OF PERSISTENT PAIN .....	4
10-YEAR MORTALITY FOLLOW-UP OF THE ALL IRELAND TRAVELLER HEALTH BIRTH COHORT STUDY 2008 – 2009: FINDINGS AND CHALLENGES .....	5
A HEALTH EQUITY AUDIT OF THE RELATIONSHIP BETWEEN SOCIO-ECONOMIC STATUS AND NOTIFIED CASES OF MEASLES IN THE MID-WEST DURING A NATIONAL OUTBREAK IN 2018 USING AN AREA LEVEL DEPRIVATION SCORE. ....	6
A MULTI-FACETED INTERVENTION TO IMPROVE BOWELSCREEN UPTAKE AMONG INITIAL INVITEES IN IRELAND .....	7
A REVIEW OF THE EFFECTIVENESS OF THE QUADRIVALENT INFLUENZA VACCINE: IMPLICATIONS FOR ITS INTRODUCTION INTO INFLUENZA VACCINATION PROGRAMME IN IRELAND .....	8
ALCOHOL CONSUMPTION & BREASTFEEDING: A REVIEW OF THE EVIDENCE.....	9
AUDIT OF HEPATITIS A IN THE HSE SOUTH 2011-2018: WERE CONTACTS VACCINATED WITHIN THE RECOMMENDED TIMEFRAME? .....	10
DESIGNING DAGS FOR ANALYSIS .....	11
EPIDEMIOLOGY OF PARVOVIRUS B19 INFECTIONS IN IRELAND, JANUARY 2009 - DECEMBER 2018.....	12
HEALTH ATLAS IRELAND AREA PROFILER - INTELLIGENCE FOR HEALTH SERVICE PLANNING .....	13
HOW ARE WE TESTING? A NATIONAL SURVEY OF <i>NEISSERIA GONORRHOEAE</i> DIAGNOSTICS .....	14
INTERNATIONAL MORTALITY MODELLING METHODOLOGIES – A COMPARATIVE AUDIT .....	15
Launch of the Irish Cancer Prevention Network – World Cancer Day 2019 "Bring a Friend to parkrun" .....	16
PHYSICALLY ACTIVE PLAY AND RECREATIONAL NEEDS OF CHILDREN AND YOUNG PEOPLE IN KILDARE: ITS RELEVANCE TO OVERALL HEALTH AND WELL-BEING .....	17
PREVALENCE OF TRANSMITTED HIV DRUG RESISTANCE: NATIONAL PILOT STUDY .....	18
SYPHILIS SURVEILLANCE IN IRELAND: AN EVALUATION OF SENSITIVITY, TIMELINESS AND COMPLETENESS..	19
THE EFFECT OF A FALSE-POSITIVE FIT SCREENING TEST ON ATTENDANCE IN THE NEXT ROUND IN BOWELSCREEN, THE NATIONAL BOWEL SCREENING PROGRAMME IN IRELAND .....	20
VARIATIONS IN HOSPITAL MORTALITY FROM SEPSIS: AN OPPORTUNITY FOR EVIDENCE-BASED DECISION-MAKING .....	21
Posters .....	22
AIR QUALITY AND ITS ASSOCIATION WITH HOSPITAL ADMISSIONS IN IRELAND .....	22
AN AUDIT OF LATENT TUBERCULOSIS MANAGEMENT AT BEAUMONT HOSPITAL .....	23
AN AUDIT OF CARDIOVASCULAR RISK ASSESSMENT AND MANAGEMENT IN HIV PATIENTS ATTENDING A TERTIARY REFERRAL OUTPATIENTS SERVICE .....	24
SCREENING FOR HEPATOCELLULAR CARCINOMA IN CHRONIC LIVER DISEASE: A SYSTEMATIC REVIEW AND META-ANALYSIS.....	25
THE BENEFITS AND DRAWBACKS OF IMPLEMENTING A NEW POLICY OF DIRECT FAECAL IMMUNOCHEMICAL (FIT) HOME SCREENING TEST PROVISION IN BOWELSCREEN, THE NATIONAL BOWEL SCREENING PROGRAMME. ....	26
THE GEM OF A SOLUTION TO STEM THE EMIGRATION OF IRISH-TRAINED JUNIOR DOCTORS? .....	27
THE INCLUSION HEALTH AWARENESS MONTH AT UNIVERSITY COLLEGE HOSPITAL GALWAY.....	28
Oral presentations .....	29
CANCER INCIDENCE AND MORTALITY DUE TO INADEQUATE PHYSICAL ACTIVITY IN IRELAND .....	29
EPIDEMIOLOGY OF INFLUENZA IN THE PAEDIATRIC POPULATION IN IRELAND, 2009 – 2019 .....	30
LOOKING UPSTREAM TO FACTOR PUBLIC HEALTH INTO THE URBAN DEVELOPMENT PROCESS.....	31
PROTECTIVE FACTORS FOR INCIDENT DEPRESSION IN OLDER ADULTS WITH MULTIMORBIDITY: RESULTS FROM THE IRISH LONGITUDINAL STUDY ON AGEING (TILDA).....	32
THE NORTHERN IRELAND VAGINAL MESH REVIEW 2017- 2019.....	33

TUBERCULOSIS HOSPITALIZATIONS IN IRELAND OVER A 4 YEAR PERIOD: A DESCRIPTIVE STUDY ..... 34  
WHAT CAN WE DO TO IMPROVE THE UPTAKE OF ROUTINE CHILDHOOD IMMUNISATIONS? ..... 35

# Three Minute Magic presentations

## #HACKTHEPAIN- A MYNI SOCIAL MEDIA CAMPAIGN FOR SUPPORTED SELF MANAGEMENT OF PERSISTENT PAIN

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### Abstract

Persistent pain costs 3- 10% of GDP. It is the most common physically disabling condition and often most troubling patients. It affects almost 500,000 people in Northern Ireland (NI). Numbers are rising due to obesity, multimorbidity and ageing. Information on prevention and management is scarce.

Most people self manage with GP support and community health care, but many need peer and multidisciplinary support to restore quality of life, and some require hospital services and rehabilitation.

Access to these is limited. Reliance on prescribed pain medication contributes to dependency, expenditure, suffering and death. Many lose employment, educational opportunities, friends, family and social lives.

NI Patient Client Council (PCC) published THE PAINFUL TRUTH in 2014 after surveying 2500 patient living with persistent pain. NI Public Health Agency (PHA) in collaboration with PCC and other statutory, voluntary, academic and private organisations set up the NI Pain Forum in response. It is a multidisciplinary practitioner and patient network for persistent pain prevention, supported self management and service improvement.

With NI Department of Finance (DoF) Innovation Lab, the NI Pain Forum organised a participative hackathon in 2017 to prototype digital solutions for better pain epidemiology and supported self management information. It informed a social media campaign delivered in 2018.

Its content was coproduced by pain forum members and received 18,000 unique page views with an over industry standards click through rate of 10.2%. Our evaluation indicates that 37% of respondents tried alternative therapies, connected with others living with pain or started attending support groups.

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# 10-YEAR MORTALITY FOLLOW-UP OF THE ALL IRELAND TRAVELLER HEALTH BIRTH COHORT STUDY 2008 – 2009: FINDINGS AND CHALLENGES

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## Abstract

In 2010 the All Ireland Traveller Health Birth Cohort Study (AITHSBCS) documented infant mortality rate among Traveller children. The aim of this study was to estimate mortality at 10 year follow-up.

A comprehensive search of mortality records in the General Registration Office, using information from Traveller Birth Cohort participants was undertaken with both a specific and a general search for time period. The death rate for Traveller children was estimated using CSO Census data from 2016 and 2011 and CSO reported deaths 2010-2018.

Sufficient follow-up information was available for 582 of 989 children born in Ireland (59%). According to CSO figures, 22% of deaths of children under 10 occur after the first year of life. Using CSO deaths and census profiles for children <10, we estimated the death rate for the general population children of 1-9 years to be 2.5 deaths/10,000. The AITHSBCS estimated Traveller infant mortality at 3.7 times the general population. Extrapolating these figures to age 1-9 years suggests we should expect at most 1 death in our ~1000 sized child cohort by age 9/10. No deaths were identified.

The finding of the no deaths could be a real finding relating to improved maternal-child health services, a reflection of precision in the small population or due to logistical barriers to death registration. Key barriers to death registration for Travellers were identified, including a change to the legal obligation to register deaths with the onus put on families in 2005, and the abolition of the bereavement grant in 2013.

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# A HEALTH EQUITY AUDIT OF THE RELATIONSHIP BETWEEN SOCIO-ECONOMIC STATUS AND NOTIFIED CASES OF MEASLES IN THE MID-WEST DURING A NATIONAL OUTBREAK IN 2018 USING AN AREA LEVEL DEPRIVATION SCORE.

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## **Abstract**

### Purpose

A national measles outbreak in 2018 which began in Limerick City resulted in 30 notified cases from the Mid-West. The aim of this audit was to investigate whether people from lower socioeconomic groups within the Mid-West were at a higher risk of developing measles during the period of this outbreak.

### Methods

A Small Area level deprivation score from Pobal was assigned to each case. These scores were stratified into eight deprivation groups, defined by Pobal. Population estimates were taken from Health Atlas. Descriptive analysis was performed using Excel. Odds ratios were calculated using R.

### Results

63.3% of cases occurred in people living in areas with a deprivation score below the national average. For the period of the outbreak, people in “extremely disadvantaged” areas had a rate of measles per 1,000 persons of 0.55. In comparison, those in “affluent” areas had a rate of 0.03. There were no cases notified from “very affluent” or “extremely affluent” areas. The odds ratio of being a case for those from areas of “extremely disadvantage” compared with a reference population from “affluent” areas was 16.16 ( $p < 0.001$ ).

### Implications

Interpretation of these results is limited as they pertain to a single outbreak with a relatively small number of cases. However, the inequality revealed requires investigation into its causes so a strategy can be developed to reduce the risk of future measles outbreaks in this population. An analysis of MMR vaccination uptake by area level deprivation in the Mid-West will be completed as a next step.

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# A MULTI-FACETED INTERVENTION TO IMPROVE BOWELSCREEN UPTAKE AMONG INITIAL INVITEES IN IRELAND

Therese Mooney<sup>1</sup>, Helen Byrne<sup>1</sup>, Lorraine Fahy<sup>1</sup>, Deirdre Ryan<sup>1</sup>, Lisa Heffernan<sup>1</sup>, Liz Yeates<sup>2</sup>, Patricia Fitzpatrick<sup>3,1</sup>, Hilary Coffey<sup>1</sup>

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## Abstract

BowelScreen, the National Bowel Cancer Screening Programme in Ireland commenced in 2012. The first round had an uptake of 40.2% against a standard of >50%. International research has shown a letter of endorsement from a respected organisation or person can increase uptake. Additionally, outdoor advertising can raise awareness of the programme. The aim was to increase uptake among initial invitees and to raise awareness of BowelScreen.

Two intervention areas were selected; a hard-to-reach area of Dublin, and Galway a middle-income area. Comparison areas with similar population and deprivation score were selected to eliminate contemporaneous confounding factors of uptake. The intervention involved 1) a plain-English letter of endorsement from the Marie Keating Foundation, encouraging uptake; 2) advising of a drop-in centre in a busy local shopping centre where a nurse would explain the test and answer questions; 3) sensationalised outdoor advertising.

In Dublin, there was a 6.4% increase in uptake compared to the comparison area. An extreme weather event in the region may have affected both arms. The intervention in Galway at a different time gave a 7.1% increase in uptake. Uptake in all areas remained suboptimal. During the intervention period in Galway, a controversy erupted about the CervicalCheck programme. This may have affected confidence in all screening programmes, but would have affected both arms equally.

It is difficult to tease-out the multiple parts of this intervention, however overall uptake among initial invitees increased by 7.3%. Uptake of bowel screening may be improved by the endorsement of a respected agency.

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# A REVIEW OF THE EFFECTIVENESS OF THE QUADRIVALENT INFLUENZA VACCINE: IMPLICATIONS FOR ITS INTRODUCTION INTO INFLUENZA VACCINATION PROGRAMME IN IRELAND

Annalisa Quattrocchi<sup>1,2</sup>, Julie Arnott<sup>1</sup>, Lisa Domegan<sup>1,2</sup>, Meadhbh Hunt<sup>1</sup>, Paula Flanagan<sup>1</sup>, Joan O'Donnell<sup>1</sup>

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## Abstract

### Purpose

Quadrivalent influenza vaccines (QIV) provide broader protection against circulating influenza B/lineage viruses than trivalent influenza vaccines (TIV). In Ireland, TIVs are the main vaccines in use. The 2017/2018 B/lineage vaccine mismatched season resulted in reduced influenza B vaccine effectiveness (VE) estimates and increased influenza mortality and morbidity. We reviewed the VE and cost-effectiveness (CE) of QIV, to assess the benefit of its introduction in Ireland.

### Methods

We conducted an extensive (non-systematic) literature review on Pubmed and the Cochrane library for articles published between 2009-2018 on VE and CE of QIV and TIV. Additionally, we searched for publications by selected study groups estimating influenza VE.

### Results

Cross-lineage protection against influenza B/lineages not included in the TIV was reported during some B mismatched seasons. Overall, QIV showed higher VE compared to TIV, but low VE for both vaccines was reported for older adults.

Despite the greater unit cost of QIV, CE modelling studies showed substantial savings with QIV through reductions in influenza cases, hospitalisations and deaths and also gains in quality-adjusted life years. The use of QIV for children combined with adjuvanted/high dose TIV in those aged  $\geq 65$  years, resulted as the most CE vaccination strategy.

### Implications

QIV can reduce the impact of a B/lineage vaccine mismatch, improving influenza B VE across seasons, which may increase public confidence in influenza vaccine and lead to increased vaccine uptake. Preferential use of QIV in children should assist in reducing influenza transmission and also indirectly protect vulnerable populations through herd immunity in Ireland.

# ALCOHOL CONSUMPTION & BREASTFEEDING: A REVIEW OF THE EVIDENCE

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## Abstract

### Background

The benefits of breastfeeding for the mother-infant dyad are recognised. Every effort should be made to encourage and facilitate women to breastfeed successfully. The use of alcohol in the context of breastfeeding is the subject of debate. Guidance can be conflicting. The HSE Alcohol Programme requested public health expertise to undertake a review of the evidence to provide clarity for women.

### Methods

A research request was made through the HSE Library Service to source relevant literature. Keywords in the search strategy included 'breastfeeding', 'breast milk', 'alcohol', 'ethanol', 'infant', 'paediatric'. Multiple databases were searched: Scopus, Pubmed, Embase and Web of Science. Crosschecking was also performed against the top ten obstetrics and gynaecology journals by impact factor.

### Results/Key Messages

- Avoid alcohol in the first month postpartum as feeding is very frequent and it takes time to establish a routine.
- For women breastfeeding beyond 1 month:
- Continue to adhere to guidance on **low-risk** alcohol consumption (<11 standard drinks *per week*; standard drink = half-pint beer, 100ml 12.5% wine).
- Feed your baby before having a drink.
- Express milk before drinking alcohol. This will allow you to feed your baby if they need feeding before you are ready.
- 2 hours required, on average, to metabolise 1 standard drink.

### Conclusion

This review provides an important update to HSE advice on alcohol use and breastfeeding. Our findings have since been incorporated into new user-friendly guidance, available at [askaboutalcohol.ie](http://askaboutalcohol.ie), [breastfeeding.ie](http://breastfeeding.ie) and the recently launched [mychild.ie](http://mychild.ie). The information presented is consistent throughout to ensure robust and transparent advice.

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# AUDIT OF HEPATITIS A IN THE HSE SOUTH 2011-2018: WERE CONTACTS VACCINATED WITHIN THE RECOMMENDED TIMEFRAME?

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## Abstract

### **Background:**

Hepatitis A is an acute infection of the liver cause by the Hepatitis A virus, a single stranded RNA virus [i]. Over the last decade, Ireland had an average of 36 Hepatitis A notifications annually [ii]. The HSE South had the highest notification rate nationally (1.2/100,000) from 1997-2016. There is a safe effective vaccine for Hepatitis A. The National Immunisation Advisory Committee (NIAC) recommends that contacts are vaccinated within two weeks of exposure [iii].

### **Methods:**

All CIDR and paper records of Hepatitis A cases notified to the HSE South 2011-2018 were reviewed.

### **Results:**

49 cases of Hepatitis A were notified to the HSE South from 2011-2018, with 111 contacts for whom post exposure vaccination was indicated. 73/111 (65.7%) of contacts were vaccinated by public health. The remainder were vaccinated by GPs/student health services. Of the contacts vaccinated by public health, 69/73 (94.5%) were vaccinated within the recommended two week time-frame. It is unknown whether contacts vaccinated by GPs/student health were in fact vaccinated within the recommended time-frame.

### **Implications:**

Public health should endeavour to vaccinate contacts where possible or phone GPs/ student health to flag the sense of urgency with the vaccination window. For future practice, it would be judicious to follow up with GPs/student health services to ensure that Hepatitis A vaccinations are administered within the recommended time-frame.

[i] WHO: Hepatitis A Factsheet.

[ii] Health Protection Surveillance Centre. Annual Report 2016.

[iii] National Immunisation Guidelines for Hepatitis A. 2015.

## DESIGNING DAGS FOR ANALYSIS

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### Abstract

The causes of autism remain obscure, with higher risk for males, for certain genetic factors, certain social factors, and a limited number of perinatal factors. All of these are strongly associated with each other. Our standard approach to modelling is challenged by this. More recent, rigorous and formal methods for causal inference from observational data, based on the work of Judea Pearl, are of value in addressing these problems. These allow, to some extent at least, more formal consideration of confounding, and the various so-called 'paradoxes' of inference.

We completed surveys on 5,640 children in primary school in three areas of Ireland. For each of these children we completed a Social Communications Questionnaire (SCQ) a screening tool to identify children at high risk of autism, questions on perinatal exposures, and on social status. A key challenge is to identify the causal structure of this model.

Reviewing the literature we identified a temporal, and potentially causal sequence of events from maternal and paternal age, through education, employment, housing, pregnancy, and delivery. Based on the literature, and on the temporal sequencing of exposures, we developed a causal model for these exposures. We created a directed acyclic graph (DAG), and used this to identify models to be fitted.

The response rate to our survey was 61%. There was strong evidence for an effect of male gender, and pre-natal folic acid exposure on the SCQ score. Lower levels of maternal and paternal education, maternal and paternal employment, were all associated with higher risk.

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# EPIDEMIOLOGY OF PARVOVIRUS B19 INFECTIONS IN IRELAND, JANUARY 2009 - DECEMBER 2018

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## Abstract

### Purpose

Parvovirus B19 is a common cause of childhood infection with fever/rash symptoms. The clinical presentation of parvovirus B19 can be mistaken for rubella or measles. This usually mild illness can cause complications in certain groups, including pregnant women. As Europe is seeking to eliminate measles, an understanding of the epidemiology of parvovirus B19 in Ireland is necessary.

### Methods

Acute infection is diagnosed by laboratory detection of parvovirus B19-specific immunoglobulin M (IgM). Data were obtained from the National Virus Reference Laboratory regarding all samples tested for parvovirus B19 between January 2009 and December 2018. Data were analysed by the Health Protection Surveillance Centre to describe the epidemiology of laboratory-confirmed parvovirus B19 by patient demographics, seasonal variation, and geographical location.

### Results

Over the ten year time period, 4.3% (1,747/40,476) of parvovirus B19 IgM tests yielded a positive result. Females were tested more frequently due to the risks associated with infection during pregnancy with 3.9% testing positive (1,334/34,347) compared to 6.7% (391/5,878) in males. The median age of females with laboratory-confirmed parvovirus was 31.9 years (range:0-84) compared to 10 years of age (range:0-85) for males.

Parvovirus B19 infection is seasonal with increases in infection rates in late spring and early summer. There is a cyclical increase in the annual incidence every 3-4 years with peaks observed in 2012/2013 and 2017/2018.

### Implications

An understanding of the epidemiology of Parvovirus B19 in Ireland may facilitate appropriate case management and public health actions in the context of an outbreak where measles or rubella is suspected.

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# HEALTH ATLAS IRELAND AREA PROFILER - INTELLIGENCE FOR HEALTH

## SERVICE PLANNING

Howard Johnson<sup>1</sup>, Fionnuala Donohue<sup>1</sup>, Padraic Flemming<sup>1</sup>, Paul Kavanagh<sup>1</sup>, Ger Sayers<sup>1</sup>, Declan McKeown<sup>1</sup>, Anne O'Farrell<sup>1</sup>, Keith Murray<sup>2</sup>, Edel Hennessey<sup>2</sup>

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### Abstract

Population profiling is recognised by *Slaintecare* as a cornerstone of health service planning. The local area population “shape” (age and deprivation) are the dominant drivers of health and service need. The Health Atlas Ireland Area Profiler was designed to provide easy access to available data to inform service planning processes at all geographical levels.

The Atlas Profiler, available to all Health Atlas Ireland users (username or password not required), enables the selection of any geographical area/s of interest including Community Health Organisation, Community Healthcare Network, Primary Care Team or CSO small area. All published CSO Census parameters can be viewed and exported in PDF and Excel formats.

Themes include the following: age (5 and 1 year); gender; deprivation (Hasse & Pratschke Index); self-reported health; disability; housing; language; migration; family structure; housing; commuting; and computing. Population change 2011-2016 is shown. A simple visual highlights relative differences between the selected area and all Ireland. Indicative population projections (age and gender) to 2045, evolved from CSO small areas using CSO assumptions for migration, fertility and mortality, are scaled to health service areas, and should be interpreted in light of projection uncertainties and the potential impact of future local housing/business/transport developments. The design of the Atlas Profiler is future-proofed to accommodate new areas such as RICOs and health sector data once available by small geographical area, ideally via the use of the Eircode.

The Atlas Profiler supports strategic planning processes by displaying data critical to informing resource allocation decisions as recommended by *Slaintecare*.

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# HOW ARE WE TESTING? A NATIONAL SURVEY OF *NEISSERIA GONORRHOEAE* DIAGNOSTICS

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## Abstract

In response to the development of cephalosporin resistant *N. gonorrhoeae*, both the World Health Organisation (WHO) and European Centre for Disease Prevention and Control (ECDC) have published action plans to control the spread and impact of antimicrobial resistance in *Neisseria gonorrhoeae*.

The HPSC published National guidelines for the prevention and control of Gonorrhoea and for minimising the impact of antimicrobial resistance in *Neisseria Gonorrhoea* in 2017.

STI testing in laboratories should be established to ensure that there is timely and accessible testing. A mapping and needs assessment of STI diagnostics is one of the priority actions of the Sexual Health Strategy.

A national survey was distributed to all laboratories in Ireland to assess both the testing facilities and guidelines utilised.

## Results:

17 questionnaires were distributed to microbiology departments in public hospitals in Ireland. 59% hospitals did not have local guidelines for the treatment of *Neisseria gonorrhoeae*.

In terms of diagnostic testing availability, 88% (15/17) laboratories performed microscopy, 94% (16/17) performed culture testing, 35% (6/17) laboratories performed NAAT testing and 76% (13/17) laboratories performed Antimicrobial Susceptibility Testing.

In 2017, 339 isolates of *Neisseria Gonorrhoea* were processed for culture and 418 samples had NAAT testing performed.

This survey demonstrates the discrepancies in the availability *Neisseria Gonorrhoea* diagnostics on a national scale. Laboratories should be resourced to perform the recommended tests such as NAATs, culture and antimicrobial susceptibility testing, which is a standard that has still not be achieved nationally. There should also be consideration to establish a national reference laboratory service for *N. gonorrhoeae*.

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# INTERNATIONAL MORTALITY MODELLING METHODOLOGIES – A COMPARATIVE AUDIT

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## **Abstract**

In-hospital mortality is recognised internationally as one facet in the management of quality of care in acute hospitals. In Ireland, the National Audit of Hospital Mortality (NAHM) has deployed an Irish variant of the Hospital Standardised Mortality Ratio (HSMR) since 2015. The HSMR derives a predictive model based on a range of routinely-collected variables. Other countries use variants of this approach.

The aim of this audit was to compare the Irish methodology with that in the UK, USA, Australia, the Netherlands and Canada and to determine whether there have been any substantive methodological changes since the Irish system first launched. Using published guidelines and literature sources, a matrix was developed, comparing all variables across each health jurisdiction.

The Irish parameters are in line with international thinking as regards mortality modelling. For example, Ireland includes all hospital diagnoses and deaths, and is similar to international practice in terms of controlling for variables such as admission source, admission type, comorbidities and the inclusion of transfers. The only change in international hospital mortality risk modelling between 2015 and 2019 is the upgrade by some jurisdictions from ICD-9 to ICD-10.

NQAIS NAHM is deployed in all publicly funded acute hospitals under the National Office for Clinical Audit (NOCA). It is one of a suite of metrics within the National Quality Assurance and Improvement System. It is recommended that the international literature continues to be monitored on an ongoing basis to ensure that NQAIS NAHM continues to reflect best practice in hospital mortality indices.

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## Launch of the Irish Cancer Prevention Network – World Cancer Day 2019

### "Bring a Friend to parkrun"

Aine Lyng<sup>1</sup>, Roisin Guiry<sup>2</sup>, Caitriona McCarthy<sup>1</sup>, Abigail Collins<sup>1</sup>

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#### Abstract

For World Cancer Day (WCD) 2019 the Irish Cancer Prevention Network (ICPN) collaborated for the first time to increase public awareness of the role of physical activity in reducing cancer risk and enhancing quality of life for those living with and beyond cancer.

Information alone does not change behaviours, therefore the ICPN partnered with *parkrun* (a national free running event) to encourage the public to bring a friend to parkrun on WCD. A single overarching message was established: *“Bring a friend to parkrun on the 2nd of February for World Cancer Day to reduce risk of cancer and support those living with and beyond cancer”*. In conjunction with parkrun and with support from HSE communications, activity was planned targeting the general public and parkrun participants. A partner pack was disseminated to cross-sectorial agencies and charities sharing key messages, social assets, campaign activity and research evidence. Media communications, locally and nationally, was planned.

On WCD ICPN members attended Porterstown parkrun together. Articles of the event were published in parkrun newsletter, national print media and on national radio. Analysis of social media showed a reach of over 100,000 on HSE facebook and twitter.

The public awareness and engagement event marked the launch of the ICPN. A memorandum of understanding was signed by ICPN members (NCCP, Irish Cancer Society, Marie Keating Foundation and Breakthrough Cancer Research) for future collaboration. Following WCD parkrun are piloting “5km your way”, an initiative which invites those affected by cancer to attend parkrun: walk, run, cheer or volunteer.

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# PHYSICALLY ACTIVE PLAY AND RECREATIONAL NEEDS OF CHILDREN AND YOUNG PEOPLE IN KILDARE: ITS RELEVANCE TO OVERALL HEALTH AND WELL-BEING

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## **Abstract**

Existing national policies such as *Get Ireland Active! National Physical Activity Plan for Ireland 2016* recommend increased time in physical activity for children and young people. However the research to date has largely ignored the role of physically active play, such as chasing games in achieving these goals. The purpose of this research was to identify the outdoor play and recreational needs of children and young people growing up in Kildare and its relevance to physical activity and health.

To obtain the views and experiences of children and young people, 23 participatory consultation workshops were conducted with 411 children and young people (3 – 17 years) living in Kildare. 1,257 parents contributed via an online questionnaire. Key stakeholders took part in further consultation workshops. This primary research was supported with an extensive literature review.

Parents across Kildare deem outdoor play as essential to children's health and well-being. The built environment and its infrastructure is central to children's access to outdoor play and recreation resources. Back gardens remain the most common outdoor play space for young children under 12 years of age in Kildare. Recreational forestry areas and waterways, such as canals are actively used by children and their families for physical activity play opportunities on a regular basis.

It is imperative that we consult with children and young people on their preferred forms of physical activity play and recreation. Affording more opportunities for physical activity play has a central role to play in promoting Irish children's health and well-being.

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# PREVALENCE OF TRANSMITTED HIV DRUG RESISTANCE: NATIONAL PILOT STUDY

Melissa Brady<sup>1</sup>, Martha Neary<sup>2</sup>, Joanne Moran<sup>2</sup>, Jeff Connell<sup>2</sup>, Suzie Coughlan<sup>2</sup>, Sarah Doyle<sup>3</sup>, Orla Ennis<sup>4</sup>, Fionnuala Cooney<sup>4</sup>, Erin Nugent<sup>5</sup>, Siobhan O’Dea<sup>6</sup>, Lysander Preston<sup>7</sup>, Helen Tuite<sup>8</sup>, Kate O’Donnell<sup>1</sup>, Derval Igoe<sup>1</sup>, Cillian De Gascun<sup>2</sup>

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## Abstract

The WHO has warned that all HIV antiretroviral drugs are at risk of becoming ineffective due to the emergence of resistant virus. Transmitted HIV drug resistance (TDR) in antiretroviral treatment (ART)-naïve HIV positive individuals carries significant implications for first-line treatment options. A pilot study was undertaken, which linked epidemiological data with laboratory data to produce more accurate population TDR prevalence rates for Ireland.

De-identified HIV epidemiological data from the Computerised Infectious Diseases Reporting system (CIDR) were linked to genotypic antiretroviral testing (GART) data from the National Virus Reference Laboratory, for individuals diagnosed with HIV-1 in Ireland during 2017. Analysis was conducted of TDR prevalence (with 95% CI) by drug class and demographic characteristics.

GART could be conducted for 58% (n=283) of HIV diagnoses in 2017. Of those, prior ART exposure could be determined for 73%. The prevalence of TDR to any drug class was 9% (95% CI 5.3-13.5) among those tested. Non-nucleoside reverse transcriptase inhibitor (NNRTI) resistance (8%) was significantly higher than NRTI resistance (1%) and protease inhibitor resistance (2%). TDR prevalence was higher in men who have sex with men (9%) and heterosexual females (8%), compared to heterosexual males (3%). By region of origin, TDR prevalence was highest in individuals from sub-Saharan Africa (13%).

This study has improved knowledge of HIV-TDR in Ireland by successfully combining data from two sources. In the context of increasing HIV drug resistance internationally, ongoing TDR monitoring is essential to inform future treatment guidelines and preferred medicine strategies for the management of HIV.

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# SYPHILIS SURVEILLANCE IN IRELAND: AN EVALUATION OF SENSITIVITY, TIMELINESS AND COMPLETENESS

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## Abstract

### Purpose

Timely notification of high quality information on syphilis is required for effective public health (PH) action. The case definition for notifying syphilis has changed three times in recent years in efforts to continuously improve timeliness whilst maintaining sensitivity and good data completeness. This study was undertaken to evaluate the effect of these changes on syphilis surveillance.

### Methods

The syphilis surveillance system was evaluated using international guidance. De-identified syphilis case data reported to the Computerised Infectious Disease Reporting (CIDR) system were analysed for sensitivity, timeliness and completeness for the three different case definitions used between 2013 and 2018.

### Results

Sensitivity (median number of notifications per 6 months) increased with each case definition change (93 to 155 to 206); specificity also improved (proportion of non-infectious cases requiring subsequent de-notification decreased from 38% to 4%). However, a small number of very early clinical cases not meeting the latest case definition were identified. Timeliness from sample collection date to PH awareness of a case improved slightly (median time 14 to 12 days). Enhanced data were completed in 65% of cases; completeness of individual variables improved over time.

### Implications

The syphilis surveillance system detects infectious cases in Ireland quickly. Case definition changes reduced the workload required to follow up cases; information for action is available within 2 weeks of sample collection date. The evaluation identified the need to amend the case definition to include clinical criteria for very early cases (implemented January 2019). The development and introduction of syphilis surveillance completeness standards should be considered.

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# THE EFFECT OF A FALSE-POSITIVE FIT SCREENING TEST ON ATTENDANCE IN THE NEXT ROUND IN BOWELSCREEN, THE NATIONAL BOWEL SCREENING PROGRAMME IN IRELAND

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## Abstract

All screening tests have false positive results. Little research exists on return to screening following a false-positive faecal immunochemical test (FIT) test. False-positive FIT was defined as a positive test with subsequent colonoscopy showing no evidence of malignancy or adenoma(s) requiring surveillance. The aim was to quantify the impact of false-positive FIT screening results in the first round on re-attendance in the second round of BowelScreen, the National Bowel Screening Programme in Ireland.

A retrospective cohort study was conducted using data from the first two rounds of BowelScreen. In those with a false-positive FIT, logistic regression was used to predict repeat participation in the second round.

Second round uptake was higher in those FIT-negative compared to those false-positive (87.5% vs 73.1%;  $p < 0.001$ ); this finding was similar in all subgroups after age and gender stratification. Older age ( $\geq 65$  years) (OR 0.75; 95%CI 0.60-0.94), CT colonography (due to unsuitability for or failed colonoscopy) (OR 0.40; 95%CI 0.21-0.75) and longer duration from screening invitation to FIT result (OR 0.994; 95%CI 0.992-0.996) were significant predictors of non-re-attendance in the next screening round.

This study shows a significant reduction in re-attendance rates for clients having a false-positive FIT result. Gastroenterologists giving colonoscopy results need to be aware they need to emphasise the importance of regular FIT tests after a negative colonoscopy. Letters sent to clients following a negative colonoscopy will be reviewed to ensure sufficient information is provided to promote re-attendance in the next round.

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# VARIATIONS IN HOSPITAL MORTALITY FROM SEPSIS: AN OPPORTUNITY FOR EVIDENCE-BASED DECISION-MAKING

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## **Abstract**

Worldwide, sepsis claims more lives than breast, bowel and prostate cancers combined. The overall sepsis mortality rate is approximately 19%, over twice that of mortality from myocardial infarction (6.4%). The Sepsis National Clinical Programme facilitates early intervention, which improves mortality, reduces acuity and shortens length of stay (LOS).

The Health Information Unit (HIU) used the Hospital Inpatient Enquiry (HIPE) system to explore factors influencing sepsis incidence and mortality. Sepsis severity codes were introduced to the International Classification of Disease Australia Modification (ICD-10-AM) in 2016. Use of the codes have yet to be fully deployed throughout the hospital system. The HIU, therefore, developed Boolean definitions to categorise relevant ICD codes that encompassed three severity levels: R65.1 (infection without sepsis); R65.1 (sepsis without shock) and R57.2 (septic shock).

In 2017, there were 125,370 patients diagnosed with one of the three levels, with 7,365 deaths. The death rate was 3.6% for infection without sepsis, 18.4% for sepsis without shock and 40.3% for septic shock. Significant factors for mortality included age, comorbidity and deprivation. These factors were included in a mortality risk model and checked for interactions. The results of the analysis were used to inform the development of a sepsis Standardised Mortality Ratio (SMR) for Irish hospitals.

A sepsis SMR will allow a standardised approach to underpinning the audit sepsis incidence and mortality in Irish hospitals. It is envisaged that the model will be adopted as a formal National Quality Assurance Improvement System (NQAIS) module, and deployed to all hospitals in the country.

# Posters

## AIR QUALITY AND ITS ASSOCIATION WITH HOSPITAL ADMISSIONS IN IRELAND

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### Abstract

#### Background

Air quality (AQ) has been shown to significantly affect human health, causing up to 7 million premature global deaths annually with an even larger number of hospitalisations. Published reports have demonstrated that ambient air pollution contributes to various problems including cardiovascular (CVS), respiratory (RS), and central nervous system (CNS) diseases. The Air Quality Index for Health (AQIH) reported by the EPA provides a level of health risk associated with ambient AQ. The aim of this study was to explore the relationship between short-term AQIH and hospitalisations for specific diseases in Dublin between 2014 and 2018.

#### Methods

Hospitalisation data collected from the HSE Hospital In-Patient Enquiry (HIPE). Daily counts on the number of patients with an address in Dublin city and county with a primary diagnosis of certain CVS, RS, and CNS diseases. The daily AQIH was obtained from the EPA for Dublin city. Data was analysed using Excel (Microsoft 2010).

#### Results

Overall, AQIH distribution was: Good: 96% (1,575/1,642); Fair: 3% (52/1,642); and Poor: 1% (11/1,642). There was a significant rise in hospitalisations for CVS diseases (10.7 days to 13.3 days for Good to Poor AQIH respectively) ( $p < 0.001$ ). There were no significant changes in hospital admission rates for RS and CNS diseases.

#### Conclusion

This study, using routinely collected data, found that at fair and poor AQIH, there is a short-term risk of increased hospitalisations for CVS disease. It does not appear to influence RS and CNS hospitalisations. This study does highlight that AQ is a public health concern.

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# AN AUDIT OF LATENT TUBERCULOSIS MANAGEMENT AT BEAUMONT HOSPITAL

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## Abstract

It is estimated that 25% of the world's population has latent tuberculosis (TB). In low incidence countries identifying and treating latent TB in groups at high risk of reactivation is an important part of disease control.

## Aims:

1) to determine the prevalence of latent TB in our cohort 2) to determine referral patterns to the infectious disease department 3) to audit practice against the 2010 national guidelines for the prevention and control of tuberculosis.

## Methods:

166 patients were chosen at random from a dataset of all patients on whom QuantiFERON testing had been performed in our tertiary referral centre in 2018 (673 patients). The patients QuantiFERON test result, risk factors for TB and chest x-ray findings were collected.

## Results:

Data was available for 136/166 patients. Screening indication was pre-TNF blockers in 91/136 patients (67%), pre-immunosuppression in 26/136 (19%) patients, contact with a TB case in 2/136 patients (1.5%). 14/136 (10%) patients were screened during investigation for active TB. Indication was unknown in 2/136 (1.5%) patients. 127/136 (93%) had a chest x ray performed.

The requesting team was rheumatology in 59/136 (43%), gastroenterology 34/136 (25%), dermatology 21/136 (15%), neurology 8/136 (6%), respiratory in 3/136 (2.2%) patients, infectious diseases in 2/136 (1.5%) patients and other specialties 7/136 (5%) patients

Overall 6/136 (4.4%) patients had latent TB.

## Conclusion:

The prevalence of latent TB in this cohort was low. Referrals and treatment patterns were appropriate and in line with national guidelines. A high number of QuantiFERONs are requested in the work up of active TB.

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# AN AUDIT OF CARDIOVASCULAR RISK ASSESSMENT AND MANAGEMENT IN HIV PATIENTS ATTENDING A TERTIARY REFERRAL OUTPATIENTS SERVICE

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## Abstract

European AIDS Clinical Society (EACS) guidelines recommend annual assessment of cardiovascular risk and use of the 5-year D.A.D risk prediction tool.

Aim: To assess adherence to EACS guidelines for cardiovascular risk assessment and management.

Methods: Charts were reviewed for 80 patients attending in 2014 and repeated for 2018.

Results: 54/80 (67.5%) of patients were female. 52/80 (65%) were African. Median age was 45 years (IQR=14). 2/80 patients were lost to follow up. 12/78 (15.4%) patients were on Abacavir. Mean exposure to protease inhibitors was 7.5 years (SD±5.8). 13/78 (16.7%) smoked. 32/78 (41%) drank alcohol. 27/78 (34.6%) had a diabetes screen in 2018. 2/78 patients had diabetes. Both were on treatment. 35/78 (44.9%) had a lipid profile check in 2018. 17/78 (17.8%) had hyperlipidaemia in 2018. 11/17 (64.7%) were on pharmacological treatment. None were to target. 11/78 (14.1%) had hypertension and all were on treatment. D.A.D score was calculable for 23/78 patients. Mean D.A.D score was 2.21% (SD±1.87) assuming all patients were normotensive and 2.33 (SD=2.00) assuming all patients had hypertension. One patient developed cardiovascular disease (D.A.D=6.02% prior to the event). One high risk patient was identified (D.A.D=7.59-9.42%). 0,1,2,3 and 4 modifiable risks were identified in 30/78, 29/78, 16/78, 2/78 and 1/78 patients respectively. Practice was not adherent to guidelines. The overall risk in those whom enough data existed was low. Protocolized risk assessment and management and an MDT approach for high risk patients could be considered. Patients could be encouraged to attend primary care annually for risk assessment.

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# SCREENING FOR HEPATOCELLULAR CARCINOMA IN CHRONIC LIVER DISEASE: A SYSTEMATIC REVIEW AND META-ANALYSIS

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## **Abstract**

### **Introduction**

Hepatocellular carcinoma (HCC) is the 5th most prevalent and second most common cause of cancer related mortality worldwide.

The objective was to determine if screening for HCC is beneficial or harmful in patients with chronic liver disease. Primary outcomes were all-cause mortality and quality of life. Secondary outcomes were mortality due to HCC, the number of cases detected and adverse events.

### **Methods**

This is a systematic review and meta-analysis of data from randomized controlled trials. Data extraction and analysis was performed independently by two reviewers.

### **Results**

When screening with six-monthly alpha-feto protein and ultrasound abdomen was compared to no screening there was no evidence of difference in HCC related mortality when adjusted for clustering across a range of intracluster correlation coefficients (Intracluster coefficient (ICC) 0.02, odds ratio (OR) 0.60, 95% confidence interval (CI) 0.31-1.15).

Screening with six-monthly alpha-feto protein when compared to a single alpha-feto protein check did not result in a statistically significant difference in all-cause mortality (OR 1.02, 95% confidence interval (CI) 0.65-1.60), mortality due to HCC (OR 1.01, 95% CI 0.57-1.78) or the number of HCC detected (OR 1.11 95% CI 0.64-1.92).

There was no evidence of difference in all-cause mortality (OR 0.81, 95% CI 0.26-2.53), mortality due to hepatocellular carcinoma (OR 0.81, 95% CI 0.26-2.53) or the number of patients with HCC detected (OR 1.09 95% CI 0.40-2.99) when twice-a-year ultrasound was compared with annual CT.

### **Conclusion**

There is currently insufficient evidence to support the routine screening for HCC in patients with chronic liver disease.

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# THE BENEFITS AND DRAWBACKS OF IMPLEMENTING A NEW POLICY OF DIRECT FAECAL IMMUNOCHEMICAL (FIT) HOME SCREENING TEST PROVISION IN BOWELSCREEN, THE NATIONAL BOWEL SCREENING PROGRAMME.

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## Abstract

BowelScreen, The National Bowel Screening Programme, offers free colorectal screening to men and women aged 60-69 through a home Faecal Immunochemical Test (FIT) kit. To improve the 40.2% uptake in Round One (2012-2015), an intervention saw FIT kits sent directly to previously screened clients rather than the "Usual-Invite" method, whereby clients contact the programme before receiving a FIT kit. The intervention proved successful hence was fully implemented into the programme in mid-2017 for all subsequent clients. Despite the improved uptake it was noted over time that the unsatisfactory FIT rate has increased and is approaching the programme standard of  $\leq 3\%$ . The aim of this study was to compare unsatisfactory rates before and after full FIT-Direct implementation.

Unsatisfactory FIT Rates for periods before and after full FIT-Direct implementation were estimated. Rates were compared using rate ratios. A z-test of the null hypothesis that the unsatisfactory FIT rates before and after FIT-Direct implementation were equal was computed.

The unsatisfactory FIT rate for subsequent clients before full implementation was 1.03% (95% CI: 0.83%-1.27%) compared with 2.38% (95% CI: 2.17%-2.61%) after full implementation, giving an unsatisfactory FIT rate 2.3 times higher with FIT-Direct (95% CI: 1.84-2.92,  $p < 0.0001$ ).

The FIT-Direct intervention had an overall positive effect on uptake with client convenience likely to be important. However our study shows evidence that the FIT unsatisfactory rate is significantly higher after compared with before full FIT-Direct implementation. This rise in the unsatisfactory rate is of concern; further research is ongoing to explore possible reasons

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# THE GEM OF A SOLUTION TO STEM THE EMIGRATION OF IRISH-TRAINED JUNIOR DOCTORS?

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## Abstract

Medical graduates are an expensively trained, highly sought-after, geographically mobile cohort (1–3). Ireland’s loss of domestically-trained doctors and increased reliance on foreign-trained doctors concerns both healthcare planners and public health researchers (4–6). This study aimed to identify factors influencing Ireland’s medical students’ migration intentions.

Cross-sectional analysis of the 2018 intern wave of the *MedTrack* Study, a prospective, longitudinal observational study comprising all ‘Fottrell’ Final Year medical students in Ireland in 2017. Administered online in the final month of internship. Multinomial logistic regression analysis of doctors’ intention to migrate compared ‘leave but return’ and ‘leave permanently’ categories with those intending to ‘remain’ in Ireland.

Of 483 baseline responders, 232 completed the intern sweep (48% response rate). Pathway to study (Direct Entry Medicine (DEM) or Graduate Entry Medicine (GEM)) was significantly associated with migration intention ( $\chi^2(2)=20.490$   $p<0.0001$ ). 74%(104) of DEM doctors intended to migrate, compared with 43%(31) of GEM doctors. The relative risk for GEM v DEM to leave but return (compared to remain) was RRR 0.24 (95%CI 0.13–0.45)  $p<0.0001$ . Likelihood of leaving was reduced by Okay/positive intern experience (0.84 (0.72-0.99)  $p=0.03$ , adjusted D/GEM) and increased by negative perceptions of training in Ireland (1.22 (1.03-1.45)  $p=0.02$ , adjusted D/GEM).

Results suggest that increasing GEM places might improve retention rates for domestically-trained doctors in Ireland. However, migration intentions of all doctors are being adversely affected by poor experience during their final intern year, and negative perceptions of Ireland’s postgraduate training programmes

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# THE INCLUSION HEALTH AWARENESS MONTH AT UNIVERSITY COLLEGE HOSPITAL GALWAY

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## **Abstract**

Inclusion health is a service, research, and policy agenda that aims to prevent and redress health inequities among the most vulnerable and excluded populations. The aim of this initiative was to raise awareness of the healthcare needs of marginalized population groups and to educate healthcare professionals on how to address these needs. Weekly educational sessions were held over the month of March at UCHG. Sessions were 1 hour long and chaired by the NCHD organiser. Guest speakers were invited from advocacy groups for the travelling community, people who use drugs, sex workers and other marginalized groups. Attendees were surveyed on their experiences after its completion.

101 people attend over 4 sessions. 18 people attended the Galway Traveller Movement led session. 19 attended the MyUISCE led session. 42 attended the Anti-Human Trafficking Unit led session. 22 people attended the emergency department/GP led session. It is not known whether these were the same or different people attending each session from the data collected. There were 11 respondents to the survey. 11/11 found the educational sessions informative, well organised and made them more aware of the challenges faced by marginal groups. 10/11 said they would change their practice when dealing with marginalized group

The initiative received positive feedback. All respondents felt they were more aware of the healthcare needs of excluded populations and had learned from the initiative.

## **Acknowledgements**

Thank you to all speakers who contributed to this initiative. Thank you also to the GUH academic office who provided administrative support for the initiative

# Oral presentations

## CANCER INCIDENCE AND MORTALITY DUE TO INADEQUATE PHYSICAL ACTIVITY IN IRELAND

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### Abstract

There are approximately 22,000 incident invasive cancers and 9,000 cancer deaths per year in Ireland and it has been estimated that the number of new cases diagnosed annually could double by 2045. Cancer prevention has been highlighted as a key priority. It is known that inadequate physical activity is an important preventable risk factor for cancer. The purpose of this work was to improve understanding of cancer burden in Ireland by calculating the Population Attributable Fraction (PAF) of inadequate physical activity on cancer incidence and mortality.

A literature review identified relative risks for inadequate physical activity and cancer. The prevalence of inadequate physical activity in the population in Ireland was estimated utilising data from a nationally-representative survey. These data were used to calculate a PAF with a standard formula. This was then applied to the most recent 5-year period of Irish cancer incidence and mortality data (2011-2015) to provide the number of attributable incident cancers and deaths.

Inadequate physical activity in the population in Ireland resulted in over 1,500 cancer cases and 500 deaths from 2011-2015. Cancer sites causally related to inadequate physical activity were colon, breast, and endometrium. Women were disproportionately affected (over 1,000 incident cases and 300 deaths) compared to men (500 incident cases and 200 deaths).

These findings should inform and support policy and strategy aimed at reducing cancer burden in Ireland. Policy makers and the public must be made aware of the potential to prevent cancer through physical activity.

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# EPIDEMIOLOGY OF INFLUENZA IN THE PAEDIATRIC POPULATION IN IRELAND, 2009 – 2019

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## Abstract

### Purpose

In Ireland, influenza places a substantial burden on the health system, with the highest disease occurrence in children and the elderly. Trivalent influenza vaccines are recommended in risk groups each season. In this study we aim to support decisions regarding alternative vaccination strategies.

### Methods

We described the burden of influenza among cases aged 0-14 years in Ireland from 2009-2019, using data on clinical influenza-like illness (ILI) GP consultations and reported laboratory confirmed influenza cases from Ireland's Computerised Infectious Disease Reporting system and ICU surveillance system.

### Results

Higher GP ILI consultation rates in children were observed during seasons when influenza A(H1N1)pdm09 predominated (460/100,000 in 2009/2010; 206/100,000 in 2010/2011) and when B/lineage vaccine mismatched viruses (co)predominated (112/100,000 in 2015/2016; 118/100,000 in 2017/2018). Since 2009, over 4500 hospitalisations, 180 ICU admissions and 40 deaths were reported in children with laboratory-confirmed influenza. The median hospital length of stay was 2 days (IQR 1-4). Age-specific hospitalisation and ICU rates were higher in those aged less than one year. Hospitalisation rates were highest (110/100,000) in 2017/2018; more than double the 2009 pandemic. Influenza vaccine uptake ranged from 5-20%, in children in risk groups hospitalised with influenza.

### Implications

Considerable morbidity and mortality due to influenza was observed in seasons when influenza A(H1N1)pdm09 or B/lineage mismatched viruses (co)predominated. Additional strategies are needed to improve vaccine uptake in at-risk children and protect healthy children not eligible for vaccination. Quadrivalent vaccines and/or universal childhood vaccination should be considered.

# LOOKING UPSTREAM TO FACTOR PUBLIC HEALTH INTO THE URBAN DEVELOPMENT PROCESS

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## Abstract

### Purpose

The link between environment and health has long been studied. However, there is no broad understanding of built environment and health that affects decision-making around urban development or redevelopment. The transdisciplinary UPSTREAM study, funded by the Wellcome Trust, seeks to improve understanding of the processes surrounding development and whether consideration of health does or does not influence decisions.

### Methods

Literature review on links between built environment and health was followed by economic valuation assigning monetary costs and/or benefits to the range of urban form factors affecting health. A two-part 'elite interviewing' process was undertaken with case study partners in the development world; volume house builders, financiers, planners and politicians. In the second round of 'elite' interviews, data on economic benefit or disbenefit were shared with interviewees and their reactions sought.

### Results

The literature review reveals a distinct variation in the quantity and quality of research on environment and health. The economic valuation produced a tool that was valuable in gaining attention of decision makers. The reaction from decision makers to the health and economic information confirmed their awareness of the extent of health consequences, but acknowledged that health is not adequately accounted for in the planning system, with widespread support for incorporation of such data into planning.

### Implications

There is a role for transdisciplinary approaches aimed at introducing health considerations at the very early stages of urban development. Public health practitioners should focus upstream in this development process, engaging in active partnerships with other relevant professional groups.

# PROTECTIVE FACTORS FOR INCIDENT DEPRESSION IN OLDER ADULTS WITH MULTIMORBIDITY: RESULTS FROM THE IRISH LONGITUDINAL STUDY ON AGEING (TILDA)

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## Abstract

This study aims to identify protective factors for incident depression in a nationally representative sample of adults with multimorbidity aged 50 years and over living in the community in Ireland.

A secondary analysis of data from TILDA collected between 2009 and 2015 was performed in this prospective cohort study. TILDA participants with multimorbidity that did not have depression at baseline, and had complete data, were included. The primary outcome was incident depression, defined by screening positive for depression with either the Center for Epidemiologic Studies Depression Scale (CES-D) or the short form of the Composite International Diagnostic Interview (CIDI-SF). Seven potential protective factors for depression from current evidence were explored: family support, presence of an intimate social relationship, social connectedness, role/identity maintenance, partaking in empowering activities, religiosity and absence of loneliness. Associations between exposures and incident depression were estimated using univariate and multivariable logistic regression models adjusted for sociodemographic factors (age, gender, marital status, disability and education).

1392 TILDA participants had multimorbidity and complete follow up data. Following full adjustment for sociodemographic factors and other potential protective factors in the final model, presence of an intimate social relationship, OR 0.56 (95% CI 0.36 – 0.87)  $p = 0.01$ , and absence of loneliness, OR 0.44 (95% CI 0.26 – 0.75)  $p = 0.003$ , proved significant.

Presence of an intimate social relationship and absence of loneliness are significant protective factors for incident depression in older adults with multimorbidity. Public Health interventions that enhance social support and prevent loneliness may help reduce incident depression.

## THE NORTHERN IRELAND VAGINAL MESH REVIEW 2017- 2019

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### **Abstract**

In June 2017, BBC Northern Ireland (NI) headlined the plight of women seeking help for mesh complications. This prompted many women to present to GPs and gynaecologists with mesh concerns, social media activity, political interest and patient complaints. The NI Mesh Review commenced in July 2017.

Led by a public health consultant, it collaborates with patients, clinicians, politicians, public and civil servants in three work streams, which have developed a network for multidisciplinary team (MDT) working, patient pathways, data management processes, informed consent materials, public information and professional advice.

The Royal College of Obstetricians and Gynaecology accredited the Belfast Health and Social Care Trust (BHSCT) mesh centre in December 2017. Between July 2017 and June 2018, it received 130 referrals. 8 women had not had mesh surgery, 13 mesh implants for pelvic organ prolapse (POP), 66 transvaginal obturator tapes (TVT-O) and 52 retropubic transvaginal tapes (TVT) for stress urinary incontinence. Most women presented with multiple symptoms, of which pain was most common. 16 had mesh erosions into urethra or vagina. 40 underwent surgery and 12 sought treatment in Great Britain. All other HSCTs also experienced a marked increase in referrals of women for assessment, investigation and treatment. This has necessitated significant service reconfigurations everywhere.

The UK wide vaginal mesh pause began in August 2018 and is due to finish with publication of revised NICE guidelines in April 2019. The first NI virtual MDT meeting is scheduled for May 2019. A skills and capacity needs assessment is in planning.

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# TUBERCULOSIS HOSPITALIZATIONS IN IRELAND OVER A 4 YEAR PERIOD: A DESCRIPTIVE STUDY

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## Abstract

Ireland has a low incidence of Tuberculosis (Tb). Understanding the nature of hospital admissions may help efforts to improve services and meet WHO End TB targets. The aim was to describe demographic and clinical characteristics of TB inpatient admissions.

The National Quality Assurance and Improvement System was searched for discharges where TB was the primary diagnosis from 1/1/15-31/12/18. Secondary diagnoses of TB admissions were searched for risk factors.

TB was the primary diagnosis for 909 patients with 1182 discharges. No significant decline in discharges occurred over time. 799 (67.6%) were emergency admissions. 732 (91.6%) of emergency admissions required admission overnight (EAO). The median length of stay for EAOs was between 11-13 days depending on the year. 387/732 (52.9%) admissions were to 9 level four hospitals. 306/732 (41.8%) of admissions were to 19 level three hospitals. The median age of patients was 42 years (IQR=28-58). 62%- 67% of admissions were male. 1389/560 (69.5%) had neither a medical card nor health insurance. 7/560 (3%) EAO patients died. 402/732 (43.9%) patients were admitted under 20 different specialties while the remainder were admitted under respiratory or infectious diseases. Risk factor prevalence was: diabetes 46/909(5.1%), HIV 28/909 (3.1%), chronic kidney disease 25/909 (2.8%), smoking 325/909 (35.8%), homelessness 13/909 (1.4%), illicit drug use 15/909 (1.7%), harmful alcohol use/alcoholic liver disease 36/909 (4%).

A high proportion of annual TB cases require emergency admission. Cases are managed in many hospitals and under many specialties. The introduction of a national TB lead, national multidisciplinary team, hospital group TB leads and a cohort review process should be considered.

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# WHAT CAN WE DO TO IMPROVE THE UPTAKE OF ROUTINE CHILDHOOD IMMUNISATIONS?

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## **Purpose**

Vaccine hesitancy has been listed among the top ten threats to global health in 2019 by the World Health Organisation. It has become an increasing problem in Ireland, especially in the North West, with uptake rates of the MMR falling to 88% in Donegal in 2018.

## **Methods**

A systematic literature review was undertaken, in order to inform local and national strategies to tackle vaccine hesitancy and increase the uptake of routine childhood immunisations. A search strategy was designed for the following databases; MEDLINE, Cochrane Library, CINAHL , PsycINFO, Open Grey and Google. Archaeological referencing was also performed on key research papers.

## **Results**

A total of 285 papers were identified through the initial search. After de-duplication and screening of abstracts for relevance, 170 papers were considered for full text review. 139 papers were available for appraisal.

## **Implications**

Reminders, both postal and telephone, and patient-held vaccination records are proven to increase the uptake of routine immunisations. Mass media campaigns, mandatory vaccination, financial incentives and counselling from a trusted health care professional can also have an impact on vaccination uptake. However, the effects of these interventions on the subsets of the population who are vaccine hesitant has not been well studied. More research is needed on how best to tackle vaccine hesitancy. New strategies need to be developed in order to use social media more effectively. New approaches also need evaluation, such as educating school children on the importance of vaccines in order to 'innoculate' them against future hesitancy.

