



# **FACULTY OF PUBLIC HEALTH MEDICINE**

**ROYAL COLLEGE OF  
PHYSICIANS OF IRELAND**

**Summer  
Scientific  
Meeting  
2022:**

**Abstract  
Papers**

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# Can doctors be better supported to lead improvement of stop smoking care in Ireland? Results of a National Survey of Knowledge, Attitudes and Practices.

Aisling Busher<sup>1,2</sup>, Paul Kavanagh<sup>3,2</sup>, Des Cox<sup>4,2</sup>

<sup>1</sup>Temple Street Children's Hospital, Dublin, Ireland. <sup>2</sup>RCPI Tobacco Policy Group, Dublin, Ireland. <sup>3</sup>HSE Tobacco Free Ireland, Dublin, Ireland. <sup>4</sup>CHI at Crumlin, Dublin, Ireland

## Abstract

Good stop-smoking care by healthcare professionals is safe, low-cost and highly-effective preventive healthcare. However, many people who smoke using Irish health services are not asked about smoking or offered appropriate care. In 2022, Ireland's first National Stop-Smoking Clinical Guidelines were launched. We report a survey of doctors' knowledge, attitudes and practices regarding stop-smoking care.

In 2020, Royal College of Physician in Ireland (RCPI) and Irish College of General Practitioners members were surveyed using a literature-informed, pre-tested questionnaire by the RCPI Tobacco Policy Group. Descriptive statistics were derived. Thematic content analysis of free-text comments was conducted used the Capability, Opportunity, and Motivation (COM-B) framework.

There were 250 responses (58.7% female, 53.0% under-45-years, 57.2% general practice). While 84.9% reported often/always asking about smoking, 31.4% often/always ask about e-cigarette-use. Most (86.10%) reported often/always advising people who smoke to stop; however, 27.4% and 52.4% reported often/always referring to national QUIT services and prescribing stop-smoking medicines respectively. E-cigarettes are rarely recommended (78.1% never recommend), and few (15.0%) agree these are a stop-smoking tool. Few (11.2%) had recently completed stop-smoking care training and self-reported capability and motivation in this area were mixed. While barriers to opportunities for stop-smoking care were identified, capability and motivation featured as strong themes in free-text, triangulating quantitative findings. Specific needs to support advice on e-cigarettes were identified.

Doctors' leadership in driving good stop-smoking care across health services will depend on developing their capability and motivation. Toolkits and training, including e-cigarettes, should support national guideline implementation.

# Measuring and improving the real-world effectiveness of stop-smoking care in Ireland: exploiting the potential of “QUITManager” to support a Tobacco-Free Ireland

Caitriona Kelly<sup>1</sup>, Aishling Sheridan<sup>2</sup>, Keith Ian Quintyne<sup>1,3</sup>, Paul Kavanagh<sup>4</sup>

<sup>1</sup>Department of Public Health, HSE North-East, Navan, Ireland. <sup>2</sup>HSE Tobacco Free Ireland Programme, Dublin, Ireland. <sup>3</sup>School of Public Health, University College Cork, Cork, Ireland. <sup>4</sup>Health Intelligence Unit HSE, Dublin, Ireland

## Abstract

While reduction in smoking initiation is driving decreasing smoking prevalence in Ireland, better stop-smoking care for current smokers is required to achieve a Tobacco Free Ireland. We assessed the potential of the new “QUITManager” information system to measure and improve stop-smoking care.

Data completeness and validity for completed stop-smoking episodes 2019-2021 was measured. Cross-sectional analysis of unique client-episodes described client characteristics, as well as stop-smoking care processes and outcomes. Comparative analysis identified factors associated with real-world service effectiveness.

Since 2019, 19,907 episodes were recorded in “QUITManager”, of which 14,820 episodes were completed with at least one advice session. Data completeness ranged across variables from 37.5% (highest education level) to 100% (gender), but improved year-on-year. There were 11,607 unique client-episodes, of which 5,884 (50.7%) included a stop-smoking attempt date: males (54.1% v 48.4%;  $p<0.001$ ), older clients (47.8 years v 45.2 years;  $p<0.001$ ) and previous QUIT episode (58.1% v 49.4%;  $p<0.001$ ) were characteristics associated with greater likelihood of setting a stop-smoking attempt date. Of those with a stop-smoking attempt date, 1,091 (18.5%) were successfully stopped at 52-week follow-up: older age (50.5 years v 47.1 years;  $p<0.001$ ) and pharmacotherapy use (20.1% v 15.8%;  $p<0.001$ ) were associated with service effectiveness at 52-weeks.

Improved data quality management will increase the utility of “QUITManager”. However, this study demonstrates its potential to drive improvement in the real-world effectiveness of stop-smoking care. Focus on care of younger clients, increasing uptake of pharmacotherapy, and encouraging follow on care after unsuccessful stop-smoking attempt are early opportunities for quality improvement.

# Death of a salesman: An evaluation of the impact of plain packaging for tobacco products in Ireland.

Robert Conway<sup>1</sup>, Aishling Sheridan<sup>2</sup>, Fenton Howell<sup>3</sup>, Claire Gordon<sup>4</sup>, Maurice Mulcahy<sup>5</sup>, Siobhain Brophy<sup>4</sup>, Frank Doyle<sup>6</sup>, Paul Kavanagh<sup>1,2,7</sup>

<sup>1</sup>HSE, National Health Intelligence Unit, Dublin, Ireland. <sup>2</sup>HSE, Tobacco Free Ireland Programme, Dublin, Ireland. <sup>3</sup>Former National Tobacco Control Adviser to the Department of Health, Dublin, Ireland. <sup>4</sup>Department of Health, Tobacco and Alcohol Control Unit, Dublin, Ireland. <sup>5</sup>HSE, Environmental Health, Sligo, Ireland. <sup>6</sup>Royal College of Surgeons in Ireland, Division of Population Health Sciences, Dublin, Ireland. <sup>7</sup>Royal College of Surgeons in Ireland, Public Health and Epidemiology Department, Dublin, Ireland

## Abstract

Smoking still kills 100 people each week in Ireland. The promotional power of tobacco-product packaging sustains the epidemic of smoking-related harm. Implementation of plain-packaging (“PP”) potentially breaks this marketing platform, leading to “death of a salesman”. We report an evaluation of the impact of PP in Ireland.

Consecutive Healthy Ireland Surveys (2018-2019) included questions on policy approval and 13 established PP consumer response targets across three domains: Tobacco-Product Appeal; Graphic-Health-Warnings (GHW) Effectiveness; Harm Perception. An uncontrolled before-and-after study evaluated change in these measures pre (2018) versus post (2019) PP implementation. Pearson's chi-squared test determined statistically significant differences; logistic regression models calculated odds ratios (ORs).

Healthy Ireland Survey response rates were 62% (2018) and 61% (2019). Policy approval increased (OR 1.38 (1.28 - 1.95),  $p < 0.0001$ ). Statistically significant positive impacts were observed across Appeal and GHW domains e.g. likelihood of disliking packaging look and of attributing GHW to quit motivation increased (OR 1.21 (1.04 - 1.42),  $p < 0.05$  and OR 1.41 (1.06 to 1.87)  $p < 0.02$  respectively). However, Harm Perception targets, already high pre-PP, were unchanged.

As more countries consider PP to tackle the epidemic of smoking-related harm, these findings add momentum to policy-making, including valuable defence against tobacco industry led counter-measures to derail implementation. While we found evidence of a potentially fatal blow to the salesman in Ireland, the tobacco industry is already innovating to sustain its market. This study underlines the importance of public health policy evaluation in strengthening public and political trust in continuing bold actions to deliver a Tobacco-Free Ireland.

# Has e-cigarette use disrupted socioeconomic inequalities in smoking in Ireland? Findings from national Healthy Ireland Surveys 2015-2019.

Aishling Sheridan<sup>1</sup>, Andrea Bowe<sup>2</sup>, Frank Doyle<sup>3</sup>, Paul Kavanagh<sup>1</sup>

<sup>1</sup>HSE Tobacco Free Ireland Programme, Dublin, Ireland. <sup>2</sup>ICAT Fellow, INFANT Research Centre, UCC, Cork, Ireland. <sup>3</sup>Dept of Health Psychology, Division Population Health Sciences, Dublin, Ireland

## Abstract

Wide variation in smoking across socioeconomic groups drives health inequalities. With the recent emergence of e-cigarettes, there is a need to better understand potential implications for the distribution of smoking-related disease across society. We describe and analyse recent trends in e-cigarette and tobacco-use prevalence in the Irish population, focusing on differences by area-based deprivation.

Secondary analysis of consecutive Healthy Ireland Survey 2015-2019 was conducted. E-cigarette and tobacco-use prevalence trends were measured; annual prevalence differences were tested using Chi-Square with Bonferroni adjustment. Analyses were stratified by area-based deprivation (Haase-Pratschke index). Multivariate logistic regression identified independent associations with e-cigarette and tobacco-use across the period yielding adjusted odds ratios (AOR).

Across 2015-2019, tobacco-use declined (22.8% to 17.3% ( $p<0.001$ )) and e-cigarette-use increased (3.1% to 5.5% ( $p<0.001$ )). While annual tobacco-use prevalence was greater among those living in most versus least deprived areas, the gap was stable across 2015-2019. However, a gap in e-cigarette-use emerged (3.5%, most deprived versus 3.2%, least deprived,  $p=0.56$ , 2015; 7.1%, most deprived versus 3.8%, least deprived,  $p<0.001$ , 2019). After sociodemographic factor adjustment across 2015-2019, the likelihood of tobacco-use decreased and e-cigarette-use increased (compared to 2015, 2019 AOR 0.79 (0.73-0.86,  $p<0.001$ ) and 1.99 (1.69-2.36,  $p<0.001$ ) respectively); both area-based deprivation and education were significantly associated with likelihood of tobacco and e-cigarette use.

There is no evidence at population-level that increasing prevalence of e-cigarette-use, especially among those in most deprived areas, is leading to reduction of socioeconomic inequalities in tobacco-use in Ireland. Policy on e-cigarette and tobacco-use need separate equity impact assessment.

# Association between electronic cigarette use and tobacco cigarette smoking initiation in adolescents: a systematic review and meta-analysis

Doireann O'Brien<sup>1</sup>, [Jean Long](#)<sup>2</sup>, Joan Quigley<sup>1</sup>, Caitriona Lee<sup>1</sup>, Anne McCarthy<sup>1</sup>, Paul Kavanagh<sup>3</sup>

<sup>1</sup>Health Research Board, Dublin, Ireland. <sup>2</sup>Health Research Board, Dublin Ireland, Ireland. <sup>3</sup>Health Service Executive, Dublin, Ireland

## Abstract

This systematic review of prospective longitudinal primary studies sought to determine whether electronic cigarette (e-cigarette) use by teenagers who had never smoked conventional tobacco cigarettes (tobacco cigarettes) at baseline was associated with subsequently commencing tobacco cigarette smoking. The review followed the principles of a systematic review and meta-analysis. A key word search identified peer-reviewed articles published between 1 January 2005 and 2 October 2019 from seven bibliographic databases and one search engine. Feasibility assessment was done to detect clinical heterogeneity and choose an approach to meta-analysis. Analysis comprised pairwise random effects meta-analyses, and sensitivity and subgroup analyses. From the 6619 studies identified, 14 primary studies were suitable for inclusion. The participants comprised teenagers based in Europe and North America. Nine of the 14 one-off studies, with follow-up periods between 4 and 24 months, met the criteria for inclusion in a meta-analysis. Based on primary study adjusted odds ratios, our meta-analysis calculated a 4.06 (95% confidence interval (CI): 3.00–5.48,  $I^2$  68%, 9 studies) times higher odds of commencing tobacco cigarette smoking for teenagers who had ever used e-cigarettes at baseline. The systematic review found that e-cigarette use was associated with commencement of tobacco cigarette smoking among teenagers in Europe and North America, identifying an important health-related harm. Given the availability and usage of e-cigarettes, this study provides added support for urgent response by policymakers to stop their use by teenagers to decrease direct harms in this susceptible population group, as well as to conserve achievements in diminishing tobacco cigarette initiation.

# **An exploratory study of the level of folic acid in food staples in Ireland in 2021**

Daragh McMenemy, Mary Rose Sweeney

School of Nursing, Psychotherapy, and Community Health, Dublin City University, Dublin, Ireland

## **Abstract**

Ireland previously had widespread voluntary fortification but there has been a major decline in the number of food staples fortified with folic acid in Irish supermarkets in the past 15 years. In this research we set out to examine the level of folic acid in food staples in supermarkets with the leading market share in the Republic of Ireland.

The food labels of food staples (breads, spreads, milk, cereals, cereal bars, yoghurt/yoghurt drinks) were photographed in supermarkets with the leading market share in the Republic of Ireland (Tesco's, Dunnes, SuperValu, Lidl, Aldi, and M&S) between 2017 and 2021. The data was extracted and collated in an excel spreadsheet. The data was analysed to examine the level of folic acid in each product. We compared the levels captured at the current times with the levels previously captured in 2017.

Preliminary analysis suggests that folic acid level in food staples in Ireland continues to decline. Folic acid was not found in any breads (except a number of gluten free breads), milks, spreads but was found in several cereals marketed mainly at children.

This study reports on the declining levels of folic acid in the food chain in Ireland. The number of food staples fortified with folic acid continues to decline demonstrating that voluntary fortification in Ireland is no longer an effective measure for passively augmenting the folic acid levels of consumers. This is of concern due to the incidence of neural tube defects in Ireland largely preventable by folic acid.

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# Adolescent Binge Drinking in the West of Ireland: An Analysis of the 2020 Planet Youth Survey

Ciara Kelly<sup>1,2</sup>, Áine McNamara<sup>2</sup>

<sup>1</sup>Health Protection Surveillance Centre, Dublin, Ireland. <sup>2</sup>Department of Public Health HSE West, Galway, Ireland

## Abstract

This study aimed to examine potential risk and protective factors for binge drinking among a cohort of 15–16-year-old adolescents in the West of Ireland.

This was a cross-sectional secondary analysis of 4,473 participants from the 2020 Planet Youth survey. Binge drinking was defined as ever consumption of  $\geq 5$  drinks in  $\leq 2$  hours. Data were analysed using SPSS version 27. Independent associations between potential risk and protective factors and binge drinking were examined using multivariable logistic regression. A p-value of  $< 0.05$  was deemed statistically significant.

The prevalence of binge drinking was 34.1%. Self-rated 'bad/very bad' mental health (aOR 1.61, 95% CI 1.26-2.06,  $p < 0.001$ ), current cigarette use (aOR 4.06, 95% CI 3.01-5.47,  $p < 0.001$ ) and current cannabis use (aOR 2.79, 95% CI 1.80-4.31,  $p < 0.001$ ) increased odds of ever binge drinking.

Parental supervision (aOR 0.80, 95% CI 0.73-0.88,  $p < 0.001$ ) and negative parental reaction to adolescent drunkenness (aOR 0.51, 95% CI 0.42-0.61,  $p < 0.001$ ) reduced odds of ever binge drinking. Getting alcohol from parents increased odds of ever binge drinking (aOR 1.79, 95% CI 1.42-2.25,  $p < 0.001$ ).

Adolescents with friends who drink alcohol had almost 5 times higher odds of ever binge drinking (aOR 4.59, 95% CI 2.65-7.94,  $p < 0.001$ ). Participating in team sports also increased odds of ever binge drinking (aOR 1.30, 95% CI 1.07-1.57,  $p = 0.008$  for 1-4 times/week, aOR 1.52, 95% CI 1.07-2.16,  $p = 0.020$  for  $\geq 5$  times/week).

This study identifies key influences in the social environment on adolescent binge drinking. Renewed public health action is needed to protect adolescents from alcohol-related harm.

# Fairer primary care resourcing for fairer health: using health intelligence to allocate new Social Deprivation Practice Grant Supports in Ireland

Ian Darbey, Angela McCourt, Declan O'Reilly, Howard Johnson, Paul Kavanagh

National Health Intelligence Unit, Dublin, Ireland

## Abstract

A 4-5 year socio-economic gap in life expectancy persists in Ireland. Fairer resourcing in primary care can support targeted action on health inequalities. Additional supports for General Practitioners (GP) to address higher burden of need in deprived areas was provided under the GP Agreement 2019. We report on the development of a transparent, fair and health intelligence-driven method to disperse new Social Deprivation Practice Grant Supports in Ireland.

GP Contract-Holder and Client datasets were sourced. Client addresses were geocoded to small-area and linked with Haase/Pratschke Deprivation Index (HP Index), transformed into 5 ordinal categories. Clients with addresses in HP 1 (most deprived) and 2 (deprived) were assigned weights based on independent association between HP category and census-measured self-rated health. A risk-adjusted capitation was explored for grant dispersal, and validated with stakeholders. Logistic regression identified GP Contract-Holder factors associated with greater scale of Client deprivation.

In total, 1,780,123 (86.6%) Clients were linked to HP category, 21.9% in HP1/2 categories: Client age, scheme and county were associated with HP category. After correcting for missing data, GP Contract-Holders had on average 181.2 (standard deviation 193.9) clients in HP1/2. GP Contract-Holder factors associated greater scale of client deprivation were: list-size; higher proportion of GMS Clients on list; Contract-Holder age; non-receipt of rural practice allowance; and receipt of methadone services payments.

The feasibility of risk-adjusted capitation grant dispersal was confirmed and will be implemented in 2022. Public health-led health intelligence should be central in health service resource allocation to “level-up” health inequalities in Ireland.

## Ensuring equity of service access – planning tools and techniques

Howard Johnson<sup>1</sup>, Fionnuala Donohue<sup>1</sup>, Declan O'Reilly<sup>1</sup>, Paul Kavanagh<sup>1</sup>, Pawel Stawarz<sup>2</sup>

<sup>1</sup>NHIU, HSE, Dublin, Ireland. <sup>2</sup>OpenApp, Dublin, Ireland

### Abstract

Equity of access to health services is the cornerstone of health policy as enshrined in Slaiticare. Processes to inform service planners as to the optimal location of services and the relative size of such services are of crucial importance in the quest for balanced population care provision. The National Health Intelligence Unit (NHIU) has evolved three complimentary tools to provide foundational spatial advice for the above.

Firstly, the Spider-web analyser within Health Atlas Ireland determines the projected population size within travel times (using adjusted Open Street Maps road segment speeds) and road distances from potential service location. Central Statistics Office (CSO) small area population weighted centroids are the building blocks. Secondly, the Watershed analyser within the Atlas refines the above analysis by determining the mid-time or mid-distance running between service locations, thereby estimating the relative sizes of the populations within their “natural” catchment areas. Thirdly, the Resource Analyser within the Atlas estimates how resources e.g. whole time equivalent staff for each catchment area, weighted by the overall size, age/gender structure and relative affluence/deprivation of the population should be shared to achieve balanced care delivery.

The above methodologies have been deployed to guide planning decisions related to the distribution of community and public health resources, and to inform the implementation of the National Cardiac and Trauma Strategies.

The spatial tools provide a transparent and evidence-based methodology to underpin health service improvement by informing decisions on optimal location and resourcing of services to achieve balanced delivery and equity of access.

# Moving beyond funding formulae: a review of population-based resource allocation policy and implications for Ireland in an era of healthcare reform

Bridget Johnston<sup>1</sup>, Sara Burke<sup>1</sup>, Paul M. Kavanagh<sup>2</sup>, Caoimhe O'Sullivan<sup>3</sup>, Steve Thomas<sup>1</sup>, Sarah Parker<sup>1</sup>

<sup>1</sup>Centre for Health Policy and Mangement, Trinity College Dublin, Dublin, Ireland. <sup>2</sup>National Health Intelligence Unit, Strategy and Research, Health Service Executive, Dublin, Ireland. <sup>3</sup>Department Public Health and Epidemiology, Centre for Population Health and Health Services Research, RCSI, Dublin, Ireland

## Abstract

Population-based resource allocation is a specific approach to population health planning that addresses differences in population need to promote equity and efficiency in health and health system outcomes. While previous studies have described this type of funding model, they have not compared how such policies and practices have been implemented across jurisdictions. This research examined the impacts and outcomes of population-based resource allocation across six high-income countries, in order to inform strategic decision-making as Ireland progresses its universal healthcare reform agenda.

A concurrent multi-method approach was employed to examine experiences in six jurisdictions: Australia, Canada, England, New Zealand, Scotland and Sweden. A documentary analysis of key policy, strategy and planning publications was combined with a narrative rapid review of peer-reviewed and grey literature (n = 8). Findings were verified by national experts.

Notable differences were observed across countries in terms of the stated objectives of models, as well as the criteria for choosing and incorporating variables in funding formulae. While population-based resource allocation can improve equity related to healthcare outcomes and access, several tensions were revealed between the need to ensure alignment between policy goals and model design; transition between models; support regionalisation policies; and develop robust governance and monitoring mechanisms.

This review progresses 'thinking' about population-based resource allocation beyond the technical aspects of model or formulae construction. Population-based resource allocation should be viewed as just one lever of large-scale health system reform that can be developed, monitored and adjusted in a way that supports the delivery of universal healthcare.

<b>Faculty of Public Health Medicine</b> <b>Day One: 24<sup>th</sup> May 2022</b>	
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# **An Innovative Programme for Integrating Ukrainian Displaced Persons with Irish Health Services**

Mark McLoughlin, Fionn Donnelly, Paul Mullane, Mary O'Meara, Miriam Owens

Department of Public Health, CHO9, Dublin, Ireland

## **Abstract**

The Russian-Ukrainian war has resulted in the mass exodus of Ukrainian citizens, of whom 14,000 are now in Ireland. This influx of displaced persons requires rapid integration with local and national health services to aid with both acute/chronic conditions. In response to this crisis, the Department of Public Health in Community Health Organisation 9 (CHO 9), in collaboration with CHO 9 Social Inclusion (CHO9 SI), organised a novel method of engaging these populations through a health/wellbeing assessment centre, as endorsed by the CHO 9 Area Crisis Management Team.

The site was based in a COVID-19 testing centre. The service was offered to all Ukrainian displaced persons, who were initially identified by CHO9 SI. All attendees were offered a COVID-19 test, a COVID-19 vaccine and had a brief health screen, from which referral to appropriate services could be facilitated. All attendees were assisted in completing a medical card application and were assigned a local GP, if applicable.

The centre processed approximately 100 individuals a day, with scope for further scaling-up in the future. Data collected included key demographics, previous vaccination history, the need for a nursing assessment and if a COVID test/vaccine was availed of.

The centre provided a successful model for assessment and linkage with local health services in an efficient and respectful manner. This model, the first of its kind in Ireland, can be replicated across other regions to allow for timely integration into Irish health systems for all Ukrainians who seek safety in Ireland.

**Faculty of Public Health Medicine  
Day Two: 25<sup>th</sup> May 2022**

**Session Five: Lessons from the Covid-19 Pandemic- Part One**

**Three Minute Magics**

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# Frontline workers' satisfaction with occupational Covid-19 control measures during the third pandemic wave in Ireland: insights from a national online survey

Carolyn Ingram, Yanbing Chen, [Mark Roe](#), Vicky Downey, Conor Buggy, Carla Perrotta

School of Public Health, Physiotherapy, and Sports Science, Dublin, Ireland

## Abstract

This study examined workers' perspectives on how diverse occupational sectors implemented the Covid-19 hierarchy of controls from July to November 2021.

A validated survey for identifying COVID-19 protections in the workplace was distributed via email to workers across Ireland by UCD Centre for Safety and Health at Work alumni. Adjusted odds ratios (AOR) and 95% confidence intervals generated from multivariable logistic regression models assessed how occupation type and employee demographics, engineering controls, administrative controls, and PPE contributed to worker risk perception.

Respondents were predominantly female (65%, N=187/289), vaccinated (90%, N=164/225), and unable to work remotely (83%, N=240/289). Working in a public institution (AOR=0.4[0.2,0.8]), non-management role (AOR=0.3[0.1,0.5]), or in education (AOR=0.1[0.03;0.6])/assisted living (AOR=0.3[0.1,0.8]) vs. healthcare decreased the likelihood of feeling protected from Covid-19 at work. Ventilation adjustments were uncommon (31%, N=68/218) though in terms of engineering controls, only physical barriers (AOR=2.6[5.7,3.7]) and physical distancing (AOR=2.25[1.1,4.6]) contributed to feeling protected. Of 222 frontline respondents, a minority identified administrative controls including worker bubbles (33%), temperature checks (46%), or symptomatic (43%)/universal (14%) testing. Facility entry restrictions (AOR=4.77[2.22,10.25]), temperature checks (AOR=2.51[1.13,5.57]), symptomatic testing (AOR=3.76[1.64,8.59]), and surface disinfection (AOR=4.53[1.69,12.14]) were significantly associated with feeling protected. PPE training contributed to workers' perception of safety (OR=2.76[1.42,5.37]); employee masking requirements did not (OR=1.57[0.62,3.96]).

Frontline workers in Ireland, particularly those in educational and assisted living services, did not feel sufficiently protected from Covid-19 highlighting a need for improved infectious disease control initiatives in medium-to-high-risk occupational settings.

# **An outbreak of SARS-CoV2 in a Predominantly Vaccinated Residential Care Facility**

Julianne Harte, Aine McNamara

Department of Public Health, HSE West, Galway, Ireland

## **Abstract**

Residential Care Facilities (RCF)s have been disproportionately affected during the SARS-CoV2 pandemic. The SARS-CoV2 vaccination programme began in RCFs in January-2021. This study describes the investigation and management of the first large outbreak of SARS-CoV2 in a predominantly vaccinated RCF in Public Health West.

Data included was gathered as part of the Public Health outbreak investigation. Additional data was sourced from the HSE Contact Management Programme, Computerised Infectious Disease reporting system and the HSE Covid-19 Vaccination Management System.

This outbreak was declared in August 2021 in a private facility where 58/60 (97%) residents and 53/56 (95%) staff were fully vaccinated. 40/60 residents and 17/56 staff tested positive for SARS-CoV2 on PCR test during the outbreak. 38/40 of the positive residents and 15/17 positive staff were fully vaccinated. 95% (36/38) of vaccinated positive residents were asymptomatic or experienced mild symptoms while 5.3% (2/38) experienced moderate symptoms. 50% (1/2) of unvaccinated residents developed moderate and 50% (1/2) developed severe symptoms. The timing of receipt of the 2nd vaccination dose for vaccinated residents ranged from February to June 2021. No association was found between days since last vaccination and risk of infection.

This outbreak occurred despite high vaccination uptake. Vaccination alone is not sufficient in preventing infection and virus transmission; promotion and adherence to other IPC measures remains critical in the prevention of infection in RCFs. The ethical implications of current outbreak control measures in RCFs may need consideration given the emerging evidence for reduced symptomatology among vaccinated groups.

## Positive outcomes from mixed methods review of the response to COVID-19 in schools in HSE-East during the 2020/2021 academic year

Peter Naughton, Elizabeth Kennedy, Anne Healy, Mary Ward

Department of Public Health, HSE-East, Dublin, Ireland

### Abstract

During the 2020/2021 academic year, mitigation of COVID-19 transmission in schools was managed by dedicated teams within public health departments, comprising both public health and Department of Education staff. The aim of this study was to evaluate the work of this intersectoral HSE-East Schools Team.

School testing data was examined to determine the positivity rate of close contacts of COVID-19, during the 2020/2021 academic year. The positivity rate of close contacts in HSE-East schools was compared to the national rate. Linear regression analysis was conducted to investigate the influence of school characteristics (school type, location, size, area deprivation) on the positivity rate of close contacts of COVID-19. An online survey and semi-structured interviews were conducted to explore the experiences of School Team members. Qualitative results were evaluated using thematic analysis.

Testing of close contacts of COVID-19 was conducted in 676 out of 942 schools in HSE-East during the 2020/2021 academic year. 43,881 tests yielded 1,055 positive results. The positivity rate in HSE-East and nationally were similarly low (2.40 % vs 2.41%,  $p = 0.98$ ). Regression analysis did not reveal a statistically significant effect of school characteristics on the positivity rate of close contacts ( $R^2 = 0.011$ , 95%CI 0.00-0.02). Survey respondents reported strong satisfaction with communication, training and work culture within the Schools Team.

This study demonstrates the low transmission rate of COVID-19 in HSE-East schools during the 2020/2021 academic year. Successful collaboration between clinical and non-clinical colleagues in the Schools Team provides a model for future public health initiatives.

## **An Audit of COVID-19 Death Reporting in the Department of Public Health HSE South, November 2021 to January 2022.**

Catherine Crowe, Andrea Bowe, Philippa White, Aline Brennan, Margaret B. O'Sullivan, Mary T. O'Mahony, Anne Sheahan, Peter Barrett

Department of Public Health HSE South, Cork, Ireland

### **Abstract**

The Health Protection Surveillance Centre (HPSC), in line with the World Health Organisation (WHO) guidance, defines a Covid-19 death as a death in all possible, probable and confirmed Covid-19 cases, unless there is a clear alternative cause of death that cannot be related to Covid-19 infection. However, neither this definition nor national surveillance reporting systems capture clinical nuances, such as whether Covid-19 was deemed to be the primary cause of death, a contributory, or an incidental factor. The objectives of this audit were to determine whether the HPSC definition was followed in the reporting of COVID-19 deaths in HSE-South, and to determine whether clinical opinion deemed Covid-19 to be the primary cause, a contributory, or an incidental factor.

For each death notified to the Department of Public Health HSE-South from 22/11/21 to 31/01/22, the decedents' demographic details, clinical data, and their clinicians' medical opinions on cause of death were obtained. Descriptive statistical analysis was performed using SPSS Version 28.

There were 60 deaths included in the audit, of which 55 were recorded as Covid-19 deaths on the national Computerised Infectious Disease Reporting (CIDR) system. According to the clinical opinion, Covid-19 was the primary cause of death in 72.7% (n=40), but for 21.8% (n=12) and 5.5% (n=3) Covid-19 was deemed a contributory or incidental factor respectively.

Current definitions of a COVID-19 death should be reviewed. Additional fields on CIDR should be made available to record whether COVID-19 was a primary cause, contributory or incidental factor in the death.

# **A National Campaign for Vaccine Equity: Lessons Learned for Pandemic Preparedness**

Ciara Conlan<sup>1</sup>, Christine Kelly<sup>2</sup>, Kieran Harkin<sup>3</sup>, Susan Smith<sup>4</sup>

<sup>1</sup>The National Virus Reference Laboratory, Dublin, Ireland. <sup>2</sup>University College Dublin, Dublin, Ireland.

<sup>3</sup>SafetyNet Primary Care, Dublin, Ireland. <sup>4</sup>Trinity College, Dublin, Ireland

## **Abstract**

Doctors for Vaccine Equity (DVE) was formed by doctors in Ireland in September 2021 in response to striking inequity in access to COVID-19 vaccinations globally. At the time, only 2% of people in low-income countries had received at least one dose of a COVID-19 vaccine.

The goal of DVE was to advocate for the Irish Government to support the World Health Organisation recommendations regarding global vaccine equity. This would include supporting an intellectual property rights waiver on COVID-19 vaccines to allow diverse geographic production, and committing to rational purchasing of vaccines to avoid contributing to scarcity worldwide. The group also argued that vaccine donations, while partly fulfilling an urgent need, were unsustainable as a long term strategy.

DVE raised awareness among the medical community via social media, presentations at grand rounds and conferences and through a public seminar with expert speakers. DVE managed to mobilise the commitment of many individuals and organisations. 358 doctors from 28 different specialties endorsed the mission statement, and support was also gained from many key medical organisations. In terms of impact, DVE had a significant influence on the passing of a motion in the Seanad regarding an intellectual property waiver.

A vaccine strategy is an important component of pandemic preparedness. A faster global rollout of vaccinations could have saved millions of lives. The medical community was quick to mobilise in Ireland once awareness was raised, however a proactive rather than a reactive campaign will be important for ensuring rapid vaccine coverage in future health emergencies.

# EXPLORING THE TRANSMISSIBILITY OF COVID-19 FROM CASES TO CLOSE CONTACTS

Michael Hanrahan<sup>1</sup>, E Khoo<sup>2</sup>, E Mooney<sup>2</sup>, F Cordon English<sup>2</sup>, A Sheahan<sup>1</sup>, M O'Sullivan<sup>1</sup>, M O'Mahony<sup>1</sup>, P Barrett<sup>1</sup>, P White<sup>1</sup>, A Brennan<sup>1</sup>, O Bruton<sup>1</sup>

<sup>1</sup>Department of Public Health, HSE-South, Cork, Ireland. <sup>2</sup>University College Cork, Cork, Ireland

## Abstract

Transmission of novel coronavirus, SARS-CoV-2, mainly occurs via respiratory droplets from infected cases to those who have had close contact (1). This study aimed to compare the rates of transmission from symptomatic versus asymptomatic cases, children versus adult cases and vaccinated versus unvaccinated cases.

A retrospective cohort study was undertaken to compare the proportion of close contacts that became infected and the number of secondary cases linked to primary cases of COVID-19 that occurred in Cork and Kerry, Ireland, between 01/03/2021 and 30/06/2021. A randomised sample of cases from each subgroup of interest was used for this study. Data was obtained from the National Case Tracker Customer Relationship Management System.

Fully vaccinated cases (n=74) generated 56% fewer secondary cases compared to unvaccinated cases (n=100) (rate ratio (RR) 0.44, 95% CI 0.28–0.70). Those who displayed symptoms of COVID-19 (n=100) resulted in three times as many secondary cases as those who were asymptomatic (n=100) (RR 3.00, 95% CI 1.93–4.65). Children aged 0-4 years (n=100) and children aged 5-11 years (n=100) were associated with 46% and 62% fewer secondary cases of COVID-19 compared to unvaccinated adults (RR 0.54, 95% CI 0.37–0.78, and RR 0.38, 95% CI 0.25–0.59, respectively).

This study has shown that fully vaccinated cases, asymptomatic cases, and cases aged 0 – 11 years were associated with fewer secondary cases and reduced risk of transmission to close contacts compared to unvaccinated adult cases. This information may help inform public health policy in relation to the ongoing management of COVID-19.

## References:

1. European Centre for Disease Prevention and Control. 2021. Transmission of COVID-19. [Internet] European Centre for Disease Prevention and Control [cited 3 July 2021] Available from: <https://www.ecdc.europa.eu/en/covid-19/latest-evidence/transmission>

## Views on COVID-19 vaccination of young children in Ireland, results from a cross-sectional survey of parents

Louise Marron<sup>1,2</sup>, Annamaria Ferenczi<sup>2,3,4</sup>, Katie M O'Brien<sup>2</sup>, Suzanne Cotter<sup>2</sup>, Lucy Jessop<sup>1</sup>, Yvonne Morrissey<sup>1</sup>, Chantal Migone<sup>1</sup>

<sup>1</sup>National Immunisation Office, Unit 8-9 Manor Street Business Park, Dublin, Ireland. <sup>2</sup>Health Protection Surveillance Centre, 25-27 Middle Gardiner Street, Dublin, Ireland. <sup>3</sup>European Programme for Intervention Epidemiology Training (EPIET), European Centre for Disease Prevention and Control (ECDC), Stockholm, Sweden. <sup>4</sup>Epidemiology and Surveillance Centre, Semmelweis University, Budapest, Hungary

### Abstract

Vaccination of children aged 5 years and older is recommended as part of a multifaceted strategy to protect children against SARS CoV-2 infection and serious disease, and to control spread of infection. COVID-19 vaccine trials in children aged under 5 years are underway, however, parental acceptance of COVID-19 vaccines for this age group in Ireland is unknown.

As part of a larger cross-sectional national survey of parental attitudes towards childhood vaccination in Ireland, parents of children aged 0-48 months were surveyed between June and August 2021 to determine attitudes towards COVID-19 vaccines.

Overall, 50.6% of parents (Total N=855) reported their intention to vaccinate their child, 28.7% reported that they did not intend to vaccinate and 20.2% were unsure. Believing COVID-19 can be a serious illness in children was a strong predictor of parental intention to vaccinate (aOR 4.88, 95% CI 2.68, 8.91, p-value <0.001). In comparison with Irish-born parents, parents born in a Central and Eastern European country were less likely to report intention to vaccinate (aOR 0.35, 95% CI 0.15, 0.82, p-value, 0.016). Parental concern about risks and side effects of vaccination was the primary reason reported for not intending to vaccinate. Parental trust in official vaccine information sources was associated with increased intention to vaccinate.

Understanding parental attitudes to vaccination of young children against COVID-19 is important to tailor the provision of information to parents' needs, and to inform the development of vaccination information and communication campaigns for current and future COVID-19 immunisations programmes for children.

## Lessons from the pandemic – the challenges of health mapping

Howard Johnson<sup>1</sup>, Fionnuala Donohue<sup>1</sup>, Patricia Garvey<sup>2</sup>, Paul Kavanagh<sup>1</sup>, Declan O'Reilly<sup>1</sup>, Angela McCourt<sup>1</sup>, Laurin Grabowsky@hpsc.ie<sup>1</sup>, Edel Hennessy<sup>3</sup>, Sahar Ali<sup>3</sup>

<sup>1</sup>NHIU, HSE, Dublin, Ireland. <sup>2</sup>HPSC HSE, Dublin, Ireland. <sup>3</sup>OpenApp, Dublin, Ireland

### Abstract

The importance of displaying data by person, place and time in the control of health threats was epitomised by John Snow in the 1854 London cholera outbreak. The National Health Intelligence Unit (NHIU), in collaboration with the Health Protection Surveillance Centre, undertook the mapping of COVID-19 in Ireland.

Data on PCR confirmed cases were provided by the Computerised Infectious Disease Reporting system (CIDR) from 01/03/2002 to 13/05/2021, and subsequent to the HSE cyber-attack, from the Integrated Information Service (IIS). Addresses were matched to XY location, small area or neighbourhood and aggregated to primary care team, electoral division, hospital catchment, water treatment, and local electoral areas using Health Atlas Ireland/Geodirectory via automatic and manual processes in collaboration with the Central Statistics Office. The process (file transfers, geocoding, map and trend plot generation) apart from manual geocoding, were automated end-to-end in 2021.

The accuracy of case mapping depends on the quality of home addresses provided i.e. general practice, hospital, laboratory or CCT, and varied by source. The presence of the Eircode proved critical. Approximately 65% of records were automatically matched, with manual interpretation bringing the match rate to ~95%. Experienced manual geocoders processed ~100 records per hour.

Recording of good quality addresses at source, especially the inclusion of Eircodes, underpin close-to-real time health mapping. A new module to Health Atlas Ireland facilitated feedback, and process automation proved invaluable, especially when incidence was high. These lessons from COVID can be applied to powerful map visualisations of other communicable and non-communicable diseases.

# Novel Method Of Engaging with Vulnerable, Settled Communities in the Midlands During COVID-19

Mark McLoughlin<sup>1</sup>, Jimmy Todd<sup>2</sup>, Fiona O'Reilly<sup>3</sup>, Douglas Hamilton<sup>4</sup>

<sup>1</sup>Department of Public Health, HSE East, Dublin, Ireland. <sup>2</sup>Community Development Service, HSE Midlands, Tullamore, Ireland. <sup>3</sup>Safetynet Primary Care, Dublin, Ireland. <sup>4</sup>Department of Public Health, HSE Midlands, Tullamore, Ireland

## Abstract

Ongoing high COVID-19 rates within settled vulnerable populations in the Midlands of Ireland required a novel, non-discriminatory model of engagement. To address this issue, a two-step plan was implemented: a pop-up COVID-19 testing programme in March/April 2021 and, following the trust generated from this success, several pop-up vaccination clinics across multiple sites in the Midlands in June/July 2021.

During March/April, pop-up testing centres were held at designated sites and offered free COVID-19 PCR tests to any who attended, hosted by an innovative partnership consisting of the Midlands Department of Public Health, the Traveller Primary Health Care Projects and Safetynet Primary Care. Following the trust generated from this success, this partnership hosted several pop-up vaccination clinics across multiple sites in the Midlands from June to July.

Between 16/03/2021 and 30/04/2021, six pop-up testing centres resulted in 576 COVID-19 tests being performed, from which 42 members of vulnerable populations were identified, 221 health promotion videos were sent and 448 IPC packs were distributed. Between 08/06/2021 and 20/07/2021, thirteen clinics were hosted resulting in 890 first-dose Pfizer vaccinations being delivered to vulnerable populations.

While the effectiveness of the process to identify positive COVID-19 cases was limited, it offered a unique opportunity for Public Health Medicine to build a relationship of trust with settled vulnerable populations. This contributed significantly to the strong vaccine uptake seen in June/July 2021, ultimately allowing us to successfully provide both testing and vaccination services to populations that may otherwise not have availed of either.

## Setting up a National Serosurveillance Programme in Ireland using residual sera sourced from general practice – pilot evaluation

Dr Thomas Roux<sup>1</sup>, Dr Lelia Thornton<sup>1</sup>, Dr Jeff Connell<sup>2</sup>, Prof. Mary Keogan<sup>3</sup>, Dr Ann Leonard<sup>4</sup>, Dr Shari Srinivasan<sup>3</sup>, Dr Derval Igoe<sup>1</sup>

<sup>1</sup>Health Protection Surveillance Centre, Dublin, Ireland. <sup>2</sup>National Virus Reference Laboratory, Dublin, Ireland. <sup>3</sup>Beaumont Hospital, Dublin, Ireland. <sup>4</sup>Tallaght University Hospital, Tallaght, Ireland

### Abstract

Timely infectious disease serosurveillance is needed. Population-based seroprevalence studies are time and resource intensive. The Health Protection Surveillance Centre (HPSC) proposed a National Serosurveillance Programme (NSP) using residual GP sera samples. A programme pilot was evaluated to determine feasibility, acceptability and practicality.

Expression of interest (EOI) surveys were circulated to all Irish hospital laboratories (July 2021). Interested respondents were invited to virtual meetings to co-develop standard processes (SOPs) (August-September, 2021). Using co-developed SOPs, laboratories participated in one-week collection of 100 samples (October, 2021). Following SARS-CoV-2 antibody testing in National Virus Reference Laboratory (NVRL) and analysis in HPSC, a process evaluation was conducted (November, 2021). Evaluation involved Qualtrics survey of laboratories, and document review with NVRL and HPSC.

Eighteen of thirty-nine hospitals responded to EOI survey; eight hospitals agreed to participate. Over one week, 791 of 800 expected samples were collected. The largest challenge identified was staffing due to resource intensive manual anonymisation process, with average 18-person work hours needed (range:6-40 hours), at average cost of €528 per 100 specimens (range: €300-€1,000). Six participants indicated willingness to participate in further rounds, with average 150 specimens per collection week (range: 100-300). Minor documentation edits were identified to facilitate processes at HPSC and NVRL.

The pilot successfully showed residual sera surveillance is more timely, less resource intensive and more feasible to repeat regularly than population-based seroprevalence studies. Utilising an active engagement partnership approach kept laboratories on board, despite pandemic-related increased work load and staff shortages. The Irish NSP has now been implemented.

# Ambient air pollution and asthma-related hospital admissions in the context of COVID-19 transport restrictions

Caitriona Kelly<sup>1</sup>, Michael O'Dwyer<sup>2</sup>, Patrick Kenny<sup>2</sup>, Keith Ian Quintyne<sup>1,3</sup>

<sup>1</sup>Department of Public Health, HSE North-East, Navan, Ireland. <sup>2</sup>National Ambient Air Quality Unit (NAAQU), Environmental Protection Agency (EPA), Dublin, Ireland. <sup>3</sup>School of Public Health, University College Cork, Cork, Ireland

## Abstract

Exposure to poor air quality is a known risk factor for asthma exacerbations, emergency attendances and hospitalisations. Transport restrictions introduced in response to the COVID-19 pandemic provided an opportunity to examine if such restrictions had an impact on ambient air quality and on asthma-related admissions.

A retrospective population cohort study was conducted using routinely collected data. All asthma-related admissions in Dublin were collected from the Hospital In-Patient Enquiry system and daily nitrogen dioxide (NO<sub>2</sub>) and particulate matter (PM) concentrations were provided by the Environmental Protection Agency. The two years prior to the pandemic were compared with the period of transport restrictions (from March 2020).

There was a significant decrease in mean daily concentrations in two pollutants: PM<sub>2.5</sub> (7.8 v 8.9 µg/m<sup>3</sup> p=0.002) and NO<sub>2</sub> (16.7 v 24.0 µg/m<sup>3</sup> p<0.001) during the period of transport restrictions. There was also a significant reduction in the mean number of daily asthma admissions (2.8 v 4.5 admissions p<0.001). NO<sub>2</sub> was the only pollutant to show a statistically significant correlation with asthma admissions (r=0.132 p<0.001).

The transport restrictions introduced to mitigate against COVID-19 led to reductions in pollutant concentrations. Previously described associations between pollutants and asthma would suggest that the improvements in air quality contributed to the reduction in asthma admissions. The lack of correlation between asthma admissions and PM is likely due to its complex nature, as compared with NO<sub>2</sub> whose primary source is transport emissions. Public Health need to advocate for transport policies which can improve air quality, and as a result, public health.

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## **Seroprevalence of SARS-CoV-2, Ireland: findings from blood donor residual sera surveillance, 17 October 2021 – 20 February 2022**

Katie M O'Brien<sup>1</sup>, Dearbhla Butler<sup>2</sup>, Laurin Grabowski<sup>2</sup>, Adrienne Meehan<sup>2</sup>, Dermot Coyne<sup>2</sup>, Thomas Roux<sup>1</sup>, Ciara Kelly<sup>1</sup>, Niamh O'Flarherty<sup>2</sup>, Derval Igoe<sup>1</sup>

<sup>1</sup>Health Protection Surveillance Centre, Dublin, Ireland. <sup>2</sup>Irish Blood Transfusion Service, Dublin, Ireland

### **Abstract**

Using blood donor residual sera in the adult population between October 2021 and February 2022, the Sero-epidemiology Unit at the Health Protection Surveillance Centre and the Irish Blood Transfusion Service aimed to estimate SARS-CoV-2 seroprevalence, assess trends in quantitative antibody levels, a proxy for waning immunity, and determine under ascertainment using case-based surveillance.

Approximately 450 residual specimens were collected weekly , 7910 samples overall. Specimens were screened for antibodies to SARS-CoV-2 spike protein (anti-S), if positive, they were subsequently tested for SARS-CoV-2 nucleocapsid protein antibodies (anti-N). Seroprevalence estimates were compared with laboratory confirmed notifications of COVID-19, extracted from the Computerised Infectious Disease Reporting system.

Initially, mean quantitative antibody levels in the 50+ years cohort were lower than in younger age groups, however from 14 November antibody levels rose for this cohort, followed by younger age groups 2-3 weeks later.

The proportion of samples with evidence of SARS-CoV-2 infection increased from 11% in 17 October 2021 to 43% in 27 February 2022. Using this seroprevalence estimate as an approximation for the proportion of 20-79 year-olds with a previous infection, we estimated that as of 13 February 2022, 6 in 10 infections were notified.

Surveillance of blood donor residual sera provides useful information on trends in SARS-CoV-2 seroprevalence by age group, and can be used to approximate community prevalence. It aids interpretation of notification rates, and can provide complementary information on population exposure, particularly in situations where large surges in cases may affect testing capacity and notification rates.

# **Vaccine effectiveness against COVID-19 hospitalisations estimated from real-world surveillance data, Ireland, August - November 2021: A nationwide retrospective analysis.**

Rita Howe, Mark Roe, Carolyn Ingram, Carla Perrotta

University College Dublin, Dublin, Ireland

## **Abstract**

This study examined vaccine effectiveness (VE) for hospital admission, ICU admission, and mortality due to COVID-19 across time and age groups in Ireland using publicly available data.

Estimates of the total number of vaccinated or unvaccinated individuals that were admitted to hospital, ICU, or died due to a Covid-19 infection in Ireland were obtained from the Health Protection Surveillance Centre (HPSC). Data on the rates of hospitalisation and ICU admission were obtained by vaccine status for different age cohorts from the Central Statistics Office (CSO) and Health Service Executive (HSE). Relative risk reduction (RRR), Absolute Risk reduction (ARR), and Numbers needed to Vaccinate (NNV) were calculated to determine VE by age. The age denominators were calculated using population statistics from the CSO.

Vaccine coverage was low for the younger cohorts during this period but rose to approximately 100% for the older cohorts. VE against hospitalisations ranged from 73% (95% CI: 59% - 82%) in the 80+ cohort to ~90% for 25 – 79 cohort. ARR was low ( $\leq 0.096\%$ ) and NNV high ( $\geq 1,042$ ) for those under 45, while improved scores were observed for the 65 - 79 (ARR: 0.85%, NNV: 117) and 80+ cohorts (ARR: 0.62%, NNV: 161). VE against ICU admission was high in all cohorts ( $\geq 95\%$ ). ICU ARR ranged from 0.4% in the 65 – 79 cohort to less than 0.07% for those under 65.

These results are consistent with empirical studies of VE and demonstrate that accurate first approximations of VE can be derived from surveillance data.

## COVID-19 incidence and outcomes by affluence/deprivation across three pandemic waves in Ireland

Declan McKeown<sup>1</sup>, Angela McCourt<sup>1</sup>, Louise Hendrick<sup>1</sup>, Anne O'Farrell<sup>1</sup>, Fionnuala Donohue<sup>1</sup>, Laurin Grabowsky<sup>1</sup>, Paul Kavanagh<sup>1</sup>, Gerardine Sayers<sup>1</sup>, Patricia Garvey<sup>2</sup>, Joan O'Donnell<sup>2</sup>, Lois O'Connor<sup>2</sup>, John Cuddihy<sup>2</sup>, Matt Robinson<sup>1</sup>, Declan O'Reilly<sup>1</sup>, Anthony Staines<sup>3</sup>, Howard Johnson<sup>1</sup>

<sup>1</sup>National Health Intelligence Unit, HSE, Dublin, Ireland. <sup>2</sup>Health Protection Surveillance Centre, HSE, Dublin, Ireland. <sup>3</sup>Dublin City University, Dublin, Ireland

### Abstract

This study explores the incidence and outcomes of COVID-19 in relation to affluence/deprivation across three pandemic waves in Ireland.

All PCR-confirmed cases reported to the Health Protection Surveillance Centre between 01/03/2020 and 13/05/2021 were included. Home addresses were geo-referenced using Health Atlas Ireland/GeoDirectory; a small area Haase and Pratscke (HP) deprivation/affluence score was assigned to each case. Statistical analysis was undertaken in JMP version 16.

The study included 252,637 cases. The gender proportions were similar. The median age was 37 years. A total of 14,420 (5.7%) were hospitalized, 1,536 (0.6%) admitted to ITU and 4,646 (1.8%) died. COVID-19 incidence was associated with deprivation in all age groups and all pandemic waves, with a relative risk (RR) of 1.28 for the more deprived, 0.90 for the more affluent when compared to average, except for the 20-39 age group (RR 1.12 in deprived and 2.14 in the more affluent). Older age (OR 13.26, 95% CI 12.31-14.27), comorbidities, (OR 3.27, 95% CI 3.11-3.42); male gender (OR 1.32, 95% CI 1.26-1.38) and deprivation (OR 1.22, 95% CI 1.15, 1.28) were associated with hospitalisation. ITU admission was associated with older age (OR 9.67, 95% CI 6.74-12.58), comorbidities (OR 27.82, 95% CI 22.47-34.46), but not deprivation. Mortality was strongly associated with older age (OR 494.60, 95% CI 305.56-800.59), comorbidities (OR 9.44, 95% CI 8.29-10.78) but not with deprivation.

Deprivation was associated with higher incidence of COVID-19, except in the 20-39 age group, and with hospital admission but not with ITU admission or death.

# COVID-19 Impact on Waiting Lists: Using National Health Service Discrete Event Simulation to Inform Scheduled Care Recovery Planning in Ireland.

Ian Darbey, Marian Keane, Lorraine Fahy, Mibin Daniel, Doireann Waldron O'Loughlin, Declan O'Reilly, Howard Johnson, Paul Kavanagh

National Health Intelligence Unit, Dublin, Ireland

## Abstract

COVID-19 severely impacted struggling scheduled care performance in Ireland: waiting lists have grown and unmet healthcare need increased, with greatest risk of impact falling on poorest groups. Using scheduled care as an example, we describe the novel application of discrete-event-simulation through the HSE Integrated Service Model (ISM) to support better healthcare decision-making at this crucible moment.

Historical healthcare data is combined public health expertise to characterize discrete patient pathways by age, clinical profile, day and location across the simulated and integrated healthcare system, including inherent stochasticity. Demographic and non-demographic factors build demand scenarios, which are then processed through the simulation to forecast healthcare performance across key indicators (e.g. waiting lists volumes). Future risks to performance are delineated and strategic intervention impact, (e.g. 2022 Waiting List Action Plan), is assessed.

Without additional interventions, in a low COVID-19 activity scenario, scheduled care in-patient waiting lists will increase by 4,117 (24%), day-case by 6,603 (13%) and GI scopes by 13,126 (51%) to end 2022 versus end 2021. Further COVID-19 surges and re-presentation of "missed care" 2020-2021 are major performance risks. Planned interventions offered moderate impact on waiting lists (e.g. 2022 Waiting List Fund reduced in-patient waiting list end 2022 by 4,818 (-23%) versus no intervention); however, novel high-impact opportunities were also identified (e.g. "Super Saturdays" reduced day-case waiting list end 2022 by 18,976 (-34%) versus no intervention).

This innovative application of health intelligence combining health service epidemiology, discrete-event simulation methods and public health expertise offers significant utility to health service improvement in Ireland.

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# Potential for Google search queries as a Covid-19 surveillance tool after widespread testing has ceased

Cale Lawlor<sup>1</sup>, Fionn Donnelly<sup>1</sup>, Jay Borchard<sup>2</sup>, Ronald Allison<sup>3</sup>, Chinyere Elizabeth Kalu<sup>4</sup>, Lois O'Connor<sup>5</sup>

<sup>1</sup>Department of Public Health, Dublin, Ireland. <sup>2</sup>University of Tasmania, Hobart, Australia. <sup>3</sup>Irish Heart Foundation, Dublin, Ireland. <sup>4</sup>Merchants Quay Ireland, Dublin, Ireland. <sup>5</sup>Health Protection Surveillance Centre, Dublin, Ireland

## Abstract

To quantify the correlation between Google search queries for symptom and Covid-related terms with infection and hospitalisation rates in Ireland to assess utility after widespread community testing has ceased in Ireland.

Google search query data was compared to 14-day infection rate, 14-day death rate, hospitalisation number and ICU admission number through 2021 for the country of Ireland. Each of these combinations was compared in R Studio to derive a Pearson correlation coefficient to assess whether search query frequency correlated with disease rates.

Certain search terms were highly correlated with Covid-19 rates. Fifty-one combinations had a correlate of  $>0.6$ , and seven had a correlate  $>0.8$ . Searches for testing showed high degrees of correlation with 14-day notification rates. The search term "Covid test" showed a Pearson correlation coefficient of 0.93 with the 14-day notification rate, and was the highest correlated term. Hypoxemia\* was the highest correlated symptom term, with a Pearson correlation coefficient of 0.89 with the 14-day death rate. Other symptoms search terms were also correlated with different infection and hospitalisation rates, and many were found to not be correlated with rates.

There is a role for online search query data to be used to compliment traditional public health surveillance in Ireland, based on data from searches and infection in 2021. This will need to be adaptive into the future as online health seeking behaviour will change.

\*non-Irish spelling

# Public Health Response to Outbreaks of Highly Pathogenic Avian Influenza (H5N1) Among Poultry in North-East of Ireland (2021/2022)

Keith Ian Quintyne<sup>1,2</sup>, Caitriona Kelly<sup>1</sup>, Elaine Brabazon<sup>1</sup>, Katherine Harrison<sup>3</sup>, Eithna White<sup>3</sup>

<sup>1</sup>Department of Public Health, HSE North-East, Navan, Co Meath, Ireland. <sup>2</sup>University College Cork, Co Cork, Ireland. <sup>3</sup>Department of Agriculture, Food, and the Marine (DAFM), Co Dublin, Ireland

## Abstract

### AIM

Human infections from highly pathogenic avian influenza (HPAI) H5N1 are associated with significant morbidity and mortality internationally. This study aimed to use routinely available data to examine key strategies to prevent H5N1 transmission to humans during outbreaks in poultry in residents in Cavan, Louth, Meath and Monaghan.

### STUDY DESIGN

Cross-sectional based study.

### METHODS

Data were obtained from Health Protection Team (HPT) in the Department of Public Health (DPH), HSE North-East and Department of Agriculture, Food, and the Marine (DAFM). Data entry and analyses were conducted using Microsoft Excel 2016.

### RESULTS

The public health response focussed on contact tracing, monitoring, and follow-up for household, farm-workers, and DAFM staff exposed on the affected farms. A total of 157 contact episodes were identified. Contacts received advice about active monitoring from their last exposure. A total of 111 (80%) were recommended chemoprophylaxis for exposure to HPAI H5N1. During the active monitoring period, two contacts developed acute respiratory symptoms, and parainfluenza 3 and rhino/enterovirus were identified in these individuals respectively.

### CONCLUSIONS

The findings of this study, using routinely gathered data, highlighted that collaboration between public health and DAFM at regional and national level was key to rapid response to these outbreaks of HPAI in domesticated poultry. In addition, the public health response was successful in preventing H5N1 transmission from domesticated birds to humans.

## National survey of parents' views on childhood vaccinations in Ireland

Louise Marron<sup>1,2</sup>, Annamaria Ferenczi<sup>2,3,4</sup>, Katie M O'Brien<sup>2</sup>, Suzanne Cotter<sup>2</sup>, Lucy Jessop<sup>1</sup>, Yvonne Morrissey<sup>1</sup>, Chantal Migone<sup>1</sup>

<sup>1</sup>National Immunisation Office, Unit 8-9 Manor Street Business Park, Dublin, Ireland. <sup>2</sup>Health Protection Surveillance Centre, 25-27 Middle Gardiner Street, Dublin, Ireland. <sup>3</sup>European Programme for Intervention Epidemiology Training (EPIET), European Centre for Disease Prevention and Control (ECDC), Stockholm, Sweden. <sup>4</sup>Epidemiology and Surveillance Centre, Semmelweis University, Budapest, Hungary

### Abstract

Vaccine hesitancy is a threat to global health which is complex and multifactorial. Uptake of some recommended childhood immunisations remain below the 95% World Health Organisation target.

A national cross-sectional survey of parental attitudes towards childhood vaccination for children aged 0 to 48 months was conducted between June and August 2021 to determine the factors associated with vaccine uptake in Ireland (Total N=855). A descriptive analysis of questionnaire responses was conducted using absolute frequencies with percentages for categorical variables. Univariate and multivariable logistic regression models were constructed to identify the association of parental characteristics with vaccine hesitancy.

There was a strongly positive sentiment towards childhood vaccinations among parents of children aged 0 to 48 months in Ireland with high uptake of recommended vaccines (96.1%) and a strong belief in the importance (94.4%) and safety (89.2%) of vaccines. Concerns about safety and vaccine side effects were the most commonly identified as reasons for delayed and missed vaccines. Trust in official vaccine information sources was high; 9 in 10 parents reported trust in the vaccine information provided by healthcare professionals and the Health Service Executive (HSE). Among the minority of parents who were vaccine hesitant there were low levels of trust in official vaccine information sources and a reported lack of convenience accessing vaccinations.

Understanding parental attitudes towards vaccination will inform the development of evidence informed, targeted interventions to increase and sustain the uptake of childhood vaccines delivered as part of the national childhood primary immunisation programme in Ireland.

## Flu vaccine errors following introduction of the adjuvant flu vaccine during the 2021/22 flu season

Louise Marron<sup>1,2</sup>, Tom Barrett<sup>1</sup>, Chantal Migone<sup>1</sup>, Lucy Jessop<sup>1</sup>, Aparna Keegan<sup>1</sup>

<sup>1</sup>National Immunisation Office, Unit 8-9 Manor Street Business Park, Dublin, Ireland. <sup>2</sup>Health Protection Surveillance Centre, 25-27 Middle Gardiner Street, Dublin, Ireland

### Abstract

Preventable immunisation errors can contribute to adverse events following vaccination and may affect vaccine confidence. Adjuvant quadrivalent influenza vaccine (aQIV) was introduced for those aged 65 years and older for the first time in the 2021/22 seasonal influenza (flu) programme in Ireland. The aim of this study was to review flu vaccine errors reported to the National Immunisation Office (NIO) email advice service for clinicians and to use the results to inform clinical education and training.

Clinical vaccine queries from September-November 2021 were reviewed (1,935). Flu vaccine errors were analysed and categorised. Errors were cross-referenced against the Frequently Asked Questions for influenza vaccination and training developed for healthcare professionals.

During the study period, 33 flu vaccination errors were notified; accounting for 1.6% of all queries and 44.6% of all vaccine errors reported. Two-thirds (66.7%) of flu vaccine errors related to the incorrect administration of aQIV. The majority of errors occurred in General Practice (72.8%) reflecting the proportion of vaccines administered in this setting. No adverse events were reported.

The introduction of aQIV resulted in vaccination errors being reported to the NIO. This study provides key learnings in relation to the rollout of a new vaccination programme. As the majority of vaccinations are administered in the community, it is important that vaccination errors in these settings are reported, collated and analysed. Currently no such system exists. Understanding the nature of vaccination errors will allow for further development of education and training materials to reduce errors and improve quality of vaccine administration.

# Venous thromboembolism in vulnerable groups in Ireland: an exploratory analysis

Osas Edebiri<sup>1</sup>, Karl Ewins<sup>2</sup>, Kevane Barry<sup>1</sup>, Anne O'Farrell<sup>3</sup>, Fionnuala Donohue<sup>3</sup>, Declan McKeown<sup>3</sup>, Fionnuala Ní Áinle<sup>1</sup>, Clíona Ní Cheallaigh<sup>4</sup>, Howard Johnson<sup>3</sup>

<sup>1</sup>University College Dublin School of Medicine, Dublin, Ireland. <sup>2</sup>Beaumont Hospital and RCPI, Dublin, Ireland. <sup>3</sup>Health Intelligence, Knowledge Management, Health & Wellbeing Directorate, HSE, Dublin, Ireland. <sup>4</sup>Trinity College Dublin School of Medicine, Dublin, Ireland

## Abstract

### Introduction

Social exclusion is experienced by people with substance use disorders, homeless people, people with severe and enduring mental illness, prisoners and certain minorities. It imposes a more profound effect on health than poverty alone. Venous thromboembolism (VTE) is associated with drug use and can dramatically affect quality of life of socially excluded persons (SEP). We hypothesized that VTE risk is increased in Irish SEP.

### Methods

Hospital Inpatient Enquiry (HIPE) data were extracted from Health Atlas Ireland and used to identify emergency inpatient hospital admissions with any diagnosis of VTE during 2017. We identified VTE cases by ICD-10 codes. An exploratory "socially excluded" composite variable was created.

### Results

There were 494,972 emergency inpatient admissions identified in patients >16 years during this 12 month period, of which 5717 (1.2%) had a VTE diagnosis. In total, 306 of the 5717 VTE hospitalizations during 2017 were in patients with the "socially excluded" composite variable.

Upon multivariate analysis, the "socially excluded" composite variable was independently associated with having a VTE diagnosis (OR 1.81; 95% CI 1.60-2.03). In order to explore the incidence of VTE during 2017 in socially excluded persons, using the maximum and minimum assumptions of our SEP population (18,720-30,055 persons), we estimated a VTE incidence-range of 2.85-4.58% in SEP in 2017. For comparison, the incidence of VTE-hospitalizations in the general population >16 years in 2017 was 1.5%.

### Conclusion:

Social exclusion is associated with VTE in Irish hospitals. These findings will inform policymaking in caring for socially excluded persons.

## **Preparation for vaccination for Ukrainian people displaced by war- a descriptive piece**

Niamh Bambury, Tom Barrett, Yvonne Morrissey, Chantal Migone, Lucy Jessop

National Immunisation Office, Dublin, Ireland

### **Abstract**

Since February 2022, a war in the Ukraine has resulted in millions of people being displaced from their homes. It is anticipated that tens of thousands of Ukrainian people will be rehoused in Ireland in accommodation ranging from private family homes to larger venues, including hotels. Living conditions during transit or upon arrival increase the risk of infection transmission, while exposure to nutritional stress and temperatures extremes may exacerbate vulnerability. Vaccine coverage is sub-optimal in Ukraine both for routine childhood immunisations and for COVID-19 vaccines, with some of the lowest uptake rates in Europe.

The National Immunisation Office (NIO) is developing a suite of information for people from Ukraine and for health care professionals (HCPs) to encourage vaccine uptake. This descriptive piece aims to outline the materials developed, the recommended catch up schedule for vaccinations and the challenges to the roll out of the vaccination programme.

Materials produced include written translated information for Ukrainians (in English, Ukrainian and Russian), video presentations and a social media campaign. Guidelines and supporting documents for HCPs are also required. Challenges associated with the roll out of the vaccination programme include disseminating information swiftly among HCPs and adapting and translating documents to make them appropriate to this population. Other considerations include the vaccine supply in the country to meet the demand, where the vaccines will be delivered and who will administer the vaccines. Building trust about vaccination among recipients will be key and involvement of Ukrainian healthcare professionals crucial as vaccine advocates.

# **An exploration of reformulation efforts by the food industry in Ireland**

Daragh McMenemy, Mary Rose Sweeney

School of Nursing, Psychotherapy, and Communit Health, Dublin City University, Dublin, Ireland

## **Abstract**

Previous research conducted in 2020 by our team examined the progress made by food manufacturers in reformulation between 2014 and 2017 (i.e., improving the nutrition profile of food staples by reducing salt, sugar, saturated fat and overall energy contribution). Our previous study showed improvements in salt and sugars levels across many food staples, but we found rising energy levels, total fat, and saturated fat in many food categories.

This study aimed to explore the ongoing progress in reformulation between 2017 to 2021.

We photographed the labels of food staples in supermarkets with the leading market share in the Republic of Ireland (Tesco's, Dunnes, SuperValu, Lidl, Centra, Aldi, and M&S). We extracted the data, collated it in an excel spreadsheet, and analysed it to examine the nutrients of interest to the study (i.e., salt, sugar, fat, saturated fat, energy, carbohydrates, protein, fibre, and micronutrients). We compared the levels captured at this time point with those previously recorded in 2017.

Eight hundred and seventy-two products were directly compared, including 80 spreads, 34 cereal snacks, 87 fruit juices, 193 cereals, 210 breads, 88 milks, and 169 yoghourts. This study shows that previously reported improvements in salt and sugar levels now appear to be going in the wrong direction. Moreover, fat and saturated fat levels that were once on the increase now appear to be reducing, possibly implying that as salt and sugar go up, fat levels go down and vice versa. This may relate to product taste and palatability.

## Is Occupational Safety and Health a Part of Public Health?

Yanbing Chen, Carolyn Ingram, Vicky Downey, Mark Roe, Rita Howe, Anne Drummond, Penpatra Sripaiboonkij, Carla Perrotta, Conor Buggy

School of Public Health, Physiotherapy and Sports Science, University College Dublin, Dublin, Ireland

### Abstract

To achieve the goal of “increased preparedness for potential future health crises” outlined in the EU Strategic Framework on Health and Safety at Work 2021-2027, the European Commission advocates that synergies between Occupational Safety and Health (OSH) and Public Health (PH) should be further developed. However, “the evident interaction between OSH and PH” is not clarified in the existing research literature.

As part of our project, this study aims to describe the relationship between role of OSH and PH in Ireland during COVID-19. Between April and May 2021, fifteen focus groups were conducted with OSH/HR professionals (n=60) from various occupational settings, using the protocol designed by experts from multiple disciplines within OSH and PH.

As identified from thematic analysis: 1) Some OSH professionals did not consider themselves as a part of PH, as they believed OSH and PH have different focuses; 2) Some agreed that OSH should be integrated with PH for more effective function, especially during pandemics; and 3) most OSH professionals in participating organisations had no interaction with PH sector before COVID-19.

This is the first study in Ireland investigating relationship dynamics between OSH and PH during a public health crisis. The workplace, as an important setting for pandemic prevention, plays a vital role in transferring related knowledge to the community and the public. This study has the capacity to contribute to the future development of a practical work mode to avail of collaboration between OSH and PH for the purpose of early preparedness for future crisis.

## Health Atlas Ireland Finder Module – Population Profiling

Gerardine Sayers<sup>1</sup>, Fionnuala Donohue<sup>1</sup>, Paul Kavanagh<sup>1</sup>, Ailbhe Spillane<sup>1</sup>, Angela McCourt<sup>2</sup>, Doireann Waldron O'Loughlin<sup>1</sup>, Marian Keane<sup>1</sup>, Declan McKeown<sup>1</sup>, Declan O'Reilly<sup>1</sup>, Anne O'Farrell<sup>1</sup>, Ben Nolan<sup>2</sup>, Laurin Grabowsky<sup>3</sup>, Howard Johnson<sup>1</sup>

<sup>1</sup>HSE National Health Intelligence Unit, Dublin, Ireland. <sup>2</sup>Formerly of HSE National Health Intelligence Unit, Dublin, Ireland. <sup>3</sup>Formerly of HSE National Intelligence Unit, Dublin, Ireland

### Abstract

The Health Atlas Ireland Finder module provides a population profile by geographical area from three perspectives: (a) population projections, (b) census 2016 and (c) health benefit/risk and morbidity estimates.

Projections by overall population, age and gender till 2051 based on the 2016 CSO census and migration, fertility (M2F2) and mortality assumptions are provided.

2016 census parameters like population by sociodemographic variables and general health, at Small Area (SA) Level are available. The weighted 2016 Pobal Haase & Pratschke HP deprivation score for each CSO Census 2016 SA is used in relevant Atlas profiles. This Index is based on three affluence and disadvantage dimensions: demographic profile, social class composition and labour market situation.

Available age/sex specific health benefit/risk rates from Healthy Ireland Surveys 2018 and 2019 can be applied as a “national reference rate” to the selected population/projection to provide national and Area health benefit/risk estimates of the “person count” per category.

Available age/sex specific morbidity rates from TILDA (wave 5, 2018) can be applied as a “national reference rate” to the selected population/projections to provide national and Area estimates of the “person count” per category. Dementia prevalence can be estimated by applying the European Collaboration on Dementia (EuroCoDe) prevalence rates for the 60+ and the relevant EURODEM prevalence rates for the 30-59 category.

It is imperative that estimates are not used to suggest that there is a higher or lower occurrence of ill-health locally or to monitor health status or evaluate interventions over time.

## Patient and Public Partnership working in the National Screening Service

Estelle McLaughlin<sup>1</sup>, [Caroline Walsh](#)<sup>1</sup>, Caroline Mason-Mohan<sup>1</sup>, Breda Duff<sup>2</sup>, Grace Rattigan<sup>2</sup>, Mary Hewson<sup>2</sup>

<sup>1</sup>National Screening Service, HSE, Dublin, Ireland. <sup>2</sup>Patient and Public Partnership, National Screening Service, HSE, Dublin, Ireland

### Abstract

#### Background:

In 2019, the National Screening Service (NSS) launched its first Patient and Public Partnership (PPP) Strategy (1) in response to Scoping Inquiry into the Cervical Check Screening Programme by Dr Gabriel Scally (2). The NSS is committed to partnership working as it is critical to delivering person-centred care.

#### Methods:

Co-production methodology was used to develop the strategy and is being carried through the implementation process. The strategy vision, strategic work areas and action plan was co-designed over two workshops, overseen by a joint project team of staff and patients.

An Implementation Group was set up in 2021 comprised of patients and staff. They are co-producing how PPP should be organised and supported in NSS, to successfully embed across the organisation and ensure patients are central to decision-making.

#### Results:

Twenty-four patient representatives are involved in NSS, contributing to over twenty NSS projects. A PPP Progress Report highlighting the actions over the past two years was recently published (3). The structure of the Implementation Group has resulted in learning for addressing power-imbalances, and the use of language, leading to a revised approach.

#### Next Steps:

NSS and PPP will continue to jointly implement the remaining strategy actions which include projects such as a BowelScreen Patient Reported Experience Measures survey. This will provide better quantitative data to guide improvement projects.

1. G. Scally. 2018. Scoping inquiry into CervicalCheck Final Report.
2. National Screening Service. 2019. Patient and Public Partnership Strategy 2019-2023.
3. National Screening Service. 2022. Patient and Public Partnership Progress Report 2022.

## **“Big Formula” and the increase in the use of specialised formula for cow’s milk allergy in Ireland.**

Shaunna Kelly<sup>1</sup>, Daniel O'Reilly<sup>2,3</sup>, Robert Conway<sup>4</sup>, Patrick Fitzpatrick<sup>5</sup>

<sup>1</sup>Royal College of Surgeons in Ireland, Dublin, Ireland. <sup>2</sup>Irish Clinical Academic Training (ICAT) Programme, Mullingar, Ireland. <sup>3</sup>Midland Regional Hospital, Mullingar, Mullingar, Ireland. <sup>4</sup>National Health Intelligence Unit, HSE, Dublin, Ireland. <sup>5</sup>Children's University Hospital, Temple Street, Dublin, Ireland

### **Abstract**

Our nearest neighbours in the UK have seen sales of specialised formula for cow’s milk allergy (CMA) increase dramatically over the past two decades. This has occurred with no sign of a rising prevalence of CMA and deeply embedded relationships between formula manufacturers (“Big Formula”) and the medical industry. Overdiagnosis and treatment of CMA by attribution of common infant symptoms to CMA may cause harm by discouraging breastfeeding and increasing formula costs.

Study design: descriptive time-series analysis. Prescription trends for 16 specialised formula over four years (2016 – 2019) using national data from the Primary Care Reimbursement Services (PCRS) are described. Study population: children registered for the General Medical Services (GMS) scheme aged 0-4 years nationally (n= 327,603). Trends and annual change were analysed through joinpoint regression.

Children registered for the GMS scheme represented between 24% and 28% of the population aged 0-4 in each year. Prescriptions of specialised formula linearly increased from 2016 to 2019. The proportion of 0-4 year olds prescribed a specialised formula rose five-fold from 0.52% (CI95%: 0.48% - 0.57%) in 2016 to 2.62% (CI95%: 2.5% - 2.73%) in 2019.

As medical institutions in other countries (including the British Medical Journal) aim to disentangle themselves from “Big Formula”, we demonstrate a rising trend in prescriptions in Ireland of specialised formulas for CMA, which occurred out of proportion to the prevalence of the condition. Vigilance regarding sponsorship from breastmilk substitute manufactures is necessary to protect breastfeeding in line with the WHO International Code of Marketing of Substitutes.

# Investigation of an acute intestinal gastroenteritis (AIG) outbreak in a residential care facility in North-East Ireland, November 2021

Melissa Brady<sup>1,2</sup>, Caitriona Kelly<sup>3</sup>, Elaine Brabazon<sup>3</sup>, Helen Byrne<sup>3</sup>, Keith Ian Quintyne<sup>3</sup>

<sup>1</sup>European Programme for Intervention Epidemiology Training (EPIET), European Centre for Disease Prevention and Control (ECDC), Stockholm, Sweden. <sup>2</sup>Health Service Executive (HSE) Health Protection Surveillance Centre, Dublin, Ireland. <sup>3</sup>Department of Public Health, Health Service Executive North-East, Ireland

## Abstract

Controlling outbreaks in complex settings is challenging. We aimed to describe an acute intestinal gastroenteritis (AIG) outbreak in a 76-bed residential care facility (RCF) with four discrete units in North-East Ireland, and to investigate possible risk factors for the outbreak.

An infection prevention and control (IPC) audit was conducted onsite by the Regional Public Health Team. Data were collected using standardised templates and a semi-structured questionnaire. A case was defined as a resident or staff member with gastrointestinal symptoms (nausea, diarrhoea or vomiting) between 23rd November and 24th December 2021. Descriptive analysis included calculation of attack rates (AR), relative risks (RR) and 95% confidence intervals.

The AR was 49% (37/76) among residents and 18% (19/108) among staff. All units were affected. The RR was higher in a dementia care unit compared to other (non-specialist) units, for residents (RR=2.0, 95% CI:1.3-2.9) and staff (RR=3.5, 95% CI:1.6-7.6). Residents in two units tested positive for norovirus. Person-to-person transmission was suspected. Delayed recognition in the facility likely contributed to ongoing transmission; the first (resident) case had gastrointestinal symptoms mistaken as atypical COVID-19 and stopped isolating after 24 hours, upon testing negative for SARS-CoV-2. Other resident cases were isolated appropriately, for 72 hours after last symptoms. The IPC audit identified lapses in outbreak control measures including cleaning regimens.

Early recognition is essential for AIG outbreak control; national COVID-19 guidance should be updated to reflect urgent checking for other pathogens if SARS-CoV-2 results are negative/inconclusive. Community IPC supports can help RCFs to manage outbreaks.

# **A snapshot of the Health Protection experience gained by a first year trainee in Public Health Medicine during Wave 4 of the Covid-19 Pandemic.**

James Gilroy, Catherine Lynch

Department of Public Health South East, Kilkenny, Ireland

## **Abstract**

Health Protection is one of the key domains of Public Health Medicine (PHM) practice and the new PHM Curriculum (2021) states that trainees should gain experience in an All-hazard and all contexts approach. The Covid-19 pandemic represents a unique period where trainees in PHM might experience a breadth and volume of Health Protection contexts. This retrospective review will seek to document the Health Protection experience of a trainee in a department of Public Health during Wave 4 of the Covid-19 Pandemic.

From the departmental electronic database of Covid-19 complex settings, a retrospective review was undertaken of the settings for which this trainee was responsible, from commencing placement on 12/7/2021 until 7/9/2021 inclusive (58 days). The settings were grouped into broad categories.

A total of 104 settings were allocated to the trainee. The most numerous category was 'Other workplace', accounting for 61% of the settings. Within this heading would be included settings such as bars, restaurants, hotels (staff), offices and farms. Childcare facilities (crèches) accounted for 10% of settings and healthcare and residential facilities accounted for 7% of the total. Outbreaks were declared in 10 (12%) of the general complex settings, in 2 (28%) of the residential care facility settings and in 2 (18%) of the childcare settings.

This review has shown that the Covid-19 Pandemic has presented PHM trainees with the opportunity to experience a volume and breadth of experience in mixed-acuity health protection contexts. However, it was not possible to find published data against which to benchmark these findings.

## **Two years of COVID-19 outbreaks in nursing homes: quantifying the workload impact for public health teams.**

Cian Carey<sup>1,2</sup>, Anne Sheahan<sup>1</sup>, Margaret O'Sullivan<sup>1</sup>, Mary O'Mahony<sup>1</sup>, Peter Barrett<sup>1,2</sup>

<sup>1</sup>Department of Public Health HSE-South, St. Finbarr's Hospital, Cork, Ireland. <sup>2</sup>School of Public Health, University College Cork, Cork, Ireland

### **Abstract**

The COVID-19 pandemic caused an unprecedented escalation in workloads for regional Departments of Public Health. Nursing homes (NHs) were one high risk setting which required substantial public health input due to their complexity, and vulnerable nature of their population. Many outbreaks required multidisciplinary outbreak control team (OCT) meetings to co-ordinate control measures. We aimed to describe the workload for one regional Department of Public Health in managing NH outbreaks during the first two years of the COVID-19 pandemic.

All NH outbreaks occurring between March 2020 and March 2022 in the Cork and Kerry region (HSE-South) were identified. Routine data pertaining to each outbreak, and regarding any OCT meetings, were extracted onto standardised data collection forms. Descriptive statistics were used to estimate the public health resources required to manage OCTs.

In HSE-South 224 NH outbreaks were reported, and 374 NH OCT meetings were held. These outbreaks involved over 3000 Covid cases and 256 Covid deaths. The mean number of OCT meetings per facility was 3, and a median 8 participants (range 2-19) attended each OCT. In Cork and Kerry, NH OCTs accounted for an estimated 393 working hours of Specialist in Public Health Medicine (SPHM) time, and over 600 working hours of other departmental clinical staff (nursing/SMO/SpR) time. A substantial amount (at least 1849hours) of other HSE staff time was also required.

COVID-19 outbreaks in NHs necessitated intensive public health input during the first two years of the pandemic. Substantial public health resources are needed to manage NH OCTs.

## **Feasibility of community outreach programme for improving cancer related health behaviour.**

Patricia Fitzpatrick<sup>1</sup>, Vikram Niranjana<sup>1</sup>, Rachel Morrogh<sup>2</sup>, Kevin O'Hagan<sup>2</sup>

<sup>1</sup>University College Dublin, Dublin, Ireland. <sup>2</sup>Irish Cancer Society, Dublin, Ireland

### **Abstract**

The Covid-19 pandemic disrupted cancer services and will have likely impacted cancer staging. In response the Irish Cancer Society (ICS) delivered a number of cancer roadshow events at 4 regions in Ireland in areas of relative deprivation. The aim was to increase awareness of cancer screening, encourage positive lifestyle changes and improve medical care-seeking behaviour.

Motivational interviews and health checks (blood pressure, BMI & CO2 monitoring) were carried out by ICS nurses and trained ICS volunteers (NVs). Data was collected via anonymous questionnaire from participants and staff. SPSS was used for analysis.

98 members of the public (54 male, 44 female) participated; after attending 72.5% stated that they would likely make changes to their current lifestyle to reduce their cancer risk. Overall, 87.7% found the information provided useful and 84.7% approved of the health check. Nine of 10 would recommend the event to others and recommended a nationwide roll out. Among the 42 NVs, 40 (95.2%) felt this event should be rolled out more widely. NVs reported moderate to high levels of public engagement; the most common topics discussed were person's own treatment experience, cancer screening, information on making lifestyle changes and ICS services. NVs reported the need for more training and improved event organisation in future.

The results of this pilot intervention at this time in the pandemic are encouraging. The importance of location was well documented, but the events were feasible and acceptable to the public, providing a timely and important health promoting service in areas of deprivation.

## **Programmatic Latent Tuberculosis Screening Among Immigrants: Conflicting International Evidence Highlights the Need for a Public Health Approach in Ireland.**

James O'Connell

Department of Public Health, Health Service Executive West, Galway, Ireland

### **Abstract**

Ending tuberculosis (TB) is a global priority. Despite low-incidence countries being well placed to eliminate TB, few are on track to do so, primarily because of a failure to prevent disease among immigrants. TB burden in low-incidence European countries highly depends on the risk of TB among recent immigrants. Programmatic latent tuberculosis infection (LTBI) management is recommended in low-incidence European countries and is underway in many. However, the merits of doing so among immigrants are contested. LTBI tests do not predict future TB disease well, and treatments are long and potentially harmful. Opponents of programmatic management cite ageing populations in low-incidence countries and the risk of treatment-related hepatotoxicity to achieve aspirational targets as questionable from a deontological perspective. In Australia, recent evidence suggests that programmatic LTBI screening among immigrants would unlikely be cost-effective and contribute little to TB elimination. In England, the national LTBI screening programme recently reported an 85% reduction in TB disease among immigrants with LTBI who completed preventive treatment. However, screening and treatment uptake was poor, undermining its effectiveness as a population-level intervention. Evidently, TB prevention among immigrants is complex. In Ireland, a cross-disciplinary team, stakeholder engagement (especially those at risk), qualitative research, national LTBI data collection (although challenging) with surveillance data linkage, high-quality care, and a greater understanding of the broader social determinants of health among immigrants are needed. A holistic person-centred public health approach to TB could help navigate the uncertainties. Doing so could not only prevent a costly resurgence but eliminate the disease.

# **We Need to Talk About Smoking: An Audit of the Prevalence of Recorded Smoking Status in a HIV Outpatient Department**

Shaunna Kelly<sup>1</sup>, Oisín Brady Bates<sup>1</sup>, Cora McNally<sup>2</sup>

<sup>1</sup>RCSI, Dublin, Ireland. <sup>2</sup>Beaumont Hospital, Dublin, Ireland

## **Abstract**

Tobacco smoking is a major risk factor for cancers in HIV-positive patients, including cervical carcinoma in females, where smoking can increase risk by up to 50% (particularly in current smokers with increased pack years). Thus, smoking status should be accurately recorded in patients' charts to aid risk assessment and prompt brief interventions for cessation (primary prevention approach).

A retrospective medical record audit was conducted in 2020 of HIV-positive female patients attending HIV Outpatient Department (OPD) in Beaumont Hospital. Patient charts were randomly sampled (based on the last two digits of the unique medical record number), with approximately 40% analysed (121/300). We assessed for and documented whether smoking status had been recorded and the most recent status. Descriptive statistics were used.

Seventy-six patients (63%) were recorded as being non-smokers. We used the term 'non-smoker' rather than the more clinically appropriate 'never smoker' as a wide range of non-specific nomenclature was recorded (e.g., 'Ø' and 'nil'). Eight patients (6%) were recorded as being ex-smokers and 18 (15%) as current smokers. There was inconsistency in recording pack years, with the majority of charts not containing this detail. Nineteen charts (16%) didn't contain any reference to smoking status.

Doctors should be trained and supported to ask and document accurate smoking status, and provide brief interventions for smoking cessation/health improvement in secondary healthcare settings. This could be facilitated/promoted in HIV OPD by adding a smoking section to the clinical summary sheet which currently contains information including vaccinations and cervical cancer screening results.

## **Determining the priorities and challenges for the consultants in public health medicine with a special interest in health intelligence.**

Mark O'Loughlin, Anne Dee

Department of Public Health, HSE Midwest, Limerick, Ireland

### **Abstract**

The organisation of public health medicine in Ireland is undergoing significant reform at present. As part of this change, consultants in public health medicine with a special interest in health intelligence are due to be appointed within regional departments of public health. This will result in an organised approach to health intelligence activities at regional level.

The study was a semi-structured interview of those working at Director of Public Health level in Ireland to summarise the main output/results of current public health intelligence, determine the role of health intelligence function at regional level as perceived by directors of public health and senior practitioners, define the priorities for regional public health intelligence work, and explore the potential challenges for the new multidisciplinary public health intelligence teams.

Recent and current health intelligence activities at regional level are extensively concerned with health protection matters with other activities being undertaken as opportunities arise and as personnel allow – primarily on an ad-hoc basis without consistency within or between departments. Priority activities for the incoming multidisciplinary teams include performing demographic assessment on an ongoing basis, undertaking public health needs assessments, and engaging with decision makers in other parts of the healthcare system to improve service delivery. The predicted challenges include concerns regarding proposed staffing levels, the role of the national unit, and access to high quality data.

Findings from this study are being reported to the chief clinical officer for consideration during the development of the role of the future consultants in public health intelligence.

## **Covid-19 cases amongst children and deprivation status**

Abigail Collins, Gerardine Sayers, Anne O'Farrell, Naomi Petty-Saphon

HSE, Dublin, Ireland

### **Abstract**

An association between deprivation and adult COVID-19 was observed. This study aims to analyse for any association among children across three pandemic waves in Ireland.

PCR-confirmed COVID-19 cases aged 0-19 years diagnosed between March 2, 2020 and November 15th, 2021 were included. Addresses of the cases were geo-referenced in Health Atlas and a deprivation score for each case was determined using the Haase and Pratscke (HP) deprivation index. Data was categorised into four age categories and further into four wave categories by date of diagnosis. Age specific rates per 100,000 population by deprivation status were calculated using cases as numerator and census data as denominator data. Analysis was undertaken in JMP version 16.

In total, 144,644 cases were identified. The gender ratio was 50:50. The median age was 11 (IRQ 6-16 ys).

The rate per 100,000 population for all cases over all waves was significantly higher among the deprived with a rate of 12,725 (95% CI 12,504-12,946) versus 10,519 (95% CI 10,318-10,721) for the average and 10063 (95% CI 9,866-10,259) among the affluent. These findings were similar across waves 2, 3 and 4 for all age groups. However in Wave 1, children aged 10-14 years from affluent backgrounds had a significantly higher rate per 100,000 population - 79.6 versus 49.6 in the average and 56.6 in the deprived category ( $p < 0.001$ ).

An association between paediatric COVID-19 and deprivation was found. The reversed deprivation gradient in affluent 10-14 year olds in Wave 1 may be associated with travel and testing practices.

# **An observational study on children hospitalised with Paediatric Inflammatory Syndrome during COVID-19 pandemic in Ireland: is deprivation a risk factor?**

Bryony Treston<sup>1</sup>, Abigail Collins<sup>2</sup>, Naomi Petty-Saphon<sup>3</sup>, Anne O'Farrell<sup>3</sup>, Angela McCourt<sup>3</sup>, Gerardine Sayers<sup>3</sup>, Patrick Gavin<sup>1</sup>

<sup>1</sup>CHI, Dublin, Ireland. <sup>2</sup>HSE, Athlone, Ireland. <sup>3</sup>HSE, Dublin, Ireland

## **Abstract**

Most children when infected with COVID-19, exhibit mild or no symptoms. However, a minority have developed a significant inflammatory response known as paediatric multi-system inflammatory syndrome (PIMS). Epidemiological risk factors for PIMS are unknown. Studies from UK and France have found an association with deprivation and ethnicity. Children's Health Ireland (CHI) at Crumlin and Temple Street provides the national paediatric infectious diseases (PID), cardiology and intensive care service (PICU) for children in Ireland. This study describes PIMS cases identified between April 2020 and April 2021 from these centres. The addresses of the cases were geo-referenced in Health Atlas and a deprivation score for each case was determined using the Haase and Pratscke (HP) deprivation index. Analysis was undertaken in JMP version 16.

Deprivation scores were available for 46 PIMS cases between April 2020 to April 2021 with over half (26, 56.5%) between January 2021 to March 2021. There were more males (54.3% vs. 45.7%,  $p=0.23$ ). The mean age was 7.3 yrs. (SD 4.5). Males were significantly older (8.5 yrs., vs 6.0yrs, T-ratio 1.92,  $p=0.03$ ). The majority were in the average HP category (67.4%). However there were significantly more cases in the deprived compared to the affluent category (19.6% vs.13.0%  $p<0.05$ ).

This small study found a significant association between deprivation and paediatric PIMS cases during the COVID-19 pandemic. A similar association has also been observed between deprivation and overall paediatric COVID-19 cases in Ireland. Such research highlights the need for ongoing focus on paediatric infectious diseases and health inequalities.

# Investigation and origin of sexually transmitted infections in minors in a health board region in Ireland.

Helen Byrne<sup>1</sup>, Lorraine Hosie<sup>1</sup>, Elaine Brabazon<sup>1</sup>, Keith Ian Quintyne<sup>1,2</sup>

<sup>1</sup>Department of Public Health, HSE North East, Meath, Ireland. <sup>2</sup>School of Public Health, University College Cork, Cork, Ireland

## Abstract

Sexually transmitted infections (STIs) in minors (under 17) may be as a result of a number of factors including peer-to-peer sexual transmission, sexual abuse, accidental contact or perinatal contact.

Data from notifications to the CIDR system was reviewed in relation to frequency, age and sex distribution, type of infection, routes of transmission and whether a referral to child protection agency was required. All notifiable STIs between 2016 and Q1 2022 in the region were examined with the exception of HIV.

In total, 27 STIs in minors were notified in the region between 2016 and Q1 2022, accounting for <1% of all STIs. Of these 67% were chlamydia notifications, with the remaining cases either gonorrhoea or herpes simplex (genital). The majority of cases were in females and in the 13 – 16 year age group. Almost half of all cases were linked in with an STI clinic, with the remaining cases dealt with by GP or other service. There were child protection issues identified in a small number of these notifications which warranted TUSLA referral. Peer-to-peer transmission or perinatal transmission were the most common mode of transmission.

STIs in minors are a serious cause of concern and each case is investigated to ensure that the appropriate pathways are followed, that vulnerable children are identified from this cohort and appropriate referral pathways are in place. While the overall numbers are small compared to the total STIs notified, they are labour intense to ensure that there are no child endangerment issues.

## **A country of birth analysis of Covid-19 data in the North East Region**

Helen Byrne<sup>1</sup>, Elaine Brabazon<sup>1</sup>, Keith Ian Quintyne<sup>1,2</sup>, Augustine Pereira<sup>1</sup>

<sup>1</sup>Department of Public Health, HSE North East, Meath, Ireland. <sup>2</sup>School of Public Health, University College Cork, Cork, Ireland

### **Abstract**

Much of the current literature to date has demonstrated that minority groups have been disproportionality affected by the Covid-19 pandemic.

The aim of this study was to examine the epidemiology of Covid-19 cases born in Ireland compared to those born in other countries, for cases notified in the North East (NE) region. Covid-19 data was extracted from the computerised infectious disease reporting system (CIDR) and analysed using Stata. Country of birth data was analysed in terms of frequency and distribution and severe outcomes.

Between March 2020 and June 2021 (Waves 1-3) over 25,000 cases of Covid-19 were notified in the NE region. Data on country of birth (COB) was complete for approximately 70% of cases in the NE during this time period. Overall 80% of the Covid-19 cases notified in the NE were born in Ireland, while 20% were born in countries outside of Ireland. Of those born outside Ireland over 50% were from countries in Eastern Europe, 15% were born in African countries and 15% were born in Asian countries. In total during this time period cases were from over 100 different countries. There were a number of severe outcomes reported in non-Irish born cases including hospitalisations, ICU admissions and deaths.

This study gives an insight into the epidemiology of cases in the NE during the first three waves of the pandemic and shows the diversity of the population in the NE affected by Covid-19 which posed challenges for Public Health teams in managing and controlling Covid-19.

## Evaluation of data quality of Covid-19 Outbreak Surveillance system in Ireland; March 2020 to March 2022

Mairead Madigan, Carina Brehony, Christina Dillion, Amy Griffin, Patricia Garvey, Lois O Connor, Eve Robinson, Joan O Donnell

HPSC, Dublin, Ireland

### Abstract

COVID-19 outbreak surveillance should provide timely, quality information to aid understanding of the pandemic and inform the response. We evaluated the COVID-19 outbreak surveillance system to ensure its objectives were met.

We included COVID-19 outbreaks notified to the national Computerised Infectious Disease Reporting System (CIDR) between March 2020 and March 2022. We assessed outbreaks against the following ECDC recommended quality measures: completeness, validity, timeliness and case linkage.

Over the evaluation period, 22,808 outbreaks were notified. Essential data fields county and CCA showed a completeness rate of 99%. Healthcare facility (HCF) related fields showed good completeness: number of staff 66%; number of patients 67%. The proportion of coding errors was very low for HCF outbreaks at 0.78%. For 42% of outbreaks, time from outbreak recognition to notification on CIDR was <48hrs. Among open outbreaks, 6% met the criterion for closure. The range between the first linked and last linked outbreak case was 1-417 days. 94% of outbreaks had linked case based data, while 87% reported only aggregate case numbers. Among outbreaks with linked cases, 91% had the complete linked number of cases.

The Covid-19 outbreak surveillance system shows high data completeness, validity and case linkage despite challenges such as the HSE Cyber-attack, case surges, prioritisation of specific outbreak categories by Public Health and testing practice changes. However, timeliness of outbreak notification could be improved. Further adaptations to the system will be required as we enter a new phase of the pandemic and into the future.

## **Audit of Management of Covid-19 Outbreaks within Residential Care Facilities (RCFs) in CHO6 between 01/08/21 and 31/10/21**

Margaret M. Brennan, Helena Murray

Department of Public Health, East, Dublin, Ireland

### **Abstract**

The audit aimed to assess whether COVID-19 outbreaks in RCFs, over three months, were managed in accordance with national standards and also examined outbreak control practices within CHO6.

Audit standards utilized were 'COVID-19 Interim Public Health, Infection Prevention & Control Guidelines on the Prevention and Management of COVID-19 Cases and Outbreaks in RCFs V6.7 17.08.2021'. To assess outbreak control practices, a series of practical questions were devised by the CHO6 team. Records were compiled into a excel file for analysis.

There were 16 outbreaks during this time, with a total of 88 cases of Covid-19; 45 staff and 43 residents. Median cases per outbreak was 3 (lower quartile=2, upper quartile=6, minimum=2, maximum=21). Of note, there were no records available for 2/16 outbreaks. Compliance of 70%-100% was achieved for 20/22 of the criteria within the 14 outbreaks assessed. However, there was no Outbreak Control Team (OCT) meeting convened for 3/14 outbreaks and consequently no OCT chair agreed. There was also relatively low level of compliance with outbreak report circulation (36%) or reporting the outbreak to other healthcare providers (43%). There were varying practices re restriction of movements and testing. Median PCR positivity rates were 0% for both close and casual contacts.

Results have been disseminated locally and there has been a quality improvement initiative commenced re filing. Implementation of a national case and outbreak management system (utilizing unique health identifiers and integrated with lab results) is urgently required. Re-audit will be completed in 6 months.

# Rapid systematic review of smoking cessation interventions for people who smoke and are diagnosed with lung, cervical, breast or head and neck cancer

Kate Frazer<sup>1</sup>, Nancy Bhardwaj<sup>1</sup>, Patricia Fox<sup>1</sup>, Vikram Niranjani<sup>1</sup>, Seamus Quinn<sup>2</sup>, Cecily Kelleher<sup>1,3</sup>, Patricia Fitzpatrick<sup>1,3</sup>

<sup>1</sup>University College Dublin, Dublin, Ireland. <sup>2</sup>Project Steering Committee, University College Dublin, Dublin, Ireland. <sup>3</sup>Preventive Medicine, St Vincent's University Hospital, Dublin, Ireland

## Abstract

Continued smoking following a cancer diagnosis is associated with poorer treatment outcomes, increased risk of recurrence, development of second primaries, lower survival, and decreased quality of life. Notwithstanding the adverse outcomes, a significant number of people diagnosed with cancer (approximately 20%) continue to smoke. A rapid review of evidence was undertaken in advance of co-developing a smoking cessation programme for people diagnosed with lung, cervical, breast or head and neck (LCBHN) cancers.

Rapid review aimed to assess and describe smoking cessation interventions (SCI) for people diagnosed with LCBHN cancers. Systematic searches of Pubmed, Embase, and CINAHL 2015 to 2020 were conducted. Included studies examined characteristics of SCIs and impact on outcomes, including smoking abstinence, quit motivation, and quit attempts. Studies were restricted to adults with a cancer diagnosis and published in English. No restriction was placed on study designs, and narrative data synthesis was conducted. (CRD 42020214204).

Twenty-three studies met the inclusion criteria, representing five countries (USA, Canada, England, Lebanon, Australia). Hospital and cancer clinics were the settings for all studies. Methodological quality was variable, with most studies using self-reported smoking cessation and varying lengths of follow-up. There were limited data to identify an optimal SCI. Key elements include timing and frequency of quit conversations, electronic records, SCI counsellor, in-person meetings, NRT, smoking cessation services embedded in oncology, and engaging with families.

Tailored SCIs are needed to support people with a diagnosis of cancer. Engaging with patients is a critical element in developing programmes.

## **Approach and perspective of oncology healthcare professionals for smoking cessation for cancer patients: A qualitative study**

Nancy Bhardwaj<sup>1</sup>, Shiraz Syed<sup>2</sup>, Patricia Fox<sup>1</sup>, Vikram Niranjani<sup>1</sup>, Ailsa Lyons<sup>2</sup>, Kate Frazer<sup>1</sup>, Sinead Brennan<sup>3</sup>, Catherine M Kelly<sup>4</sup>, Donal Brennan<sup>4</sup>, Michael Keane<sup>1,2</sup>, James Geraghty<sup>2</sup>, Suzanne Guerin<sup>1</sup>, Patricia Fitzpatrick<sup>1,2</sup>

<sup>1</sup>University College Dublin, Dublin, Ireland. <sup>2</sup>St. Vincent's University Hospital, Dublin, Ireland. <sup>3</sup>St. Luke's Radiation Oncology Network, Dublin, Ireland. <sup>4</sup>The Mater Misericordiae University Hospital, Dublin, Ireland

### **Abstract**

Smoking cessation (SC) is not yet integrated as part of comprehensive cancer care, despite its widely recognised benefits. As part of a larger feasibility study aiming to develop a structured SC pathway for cancer patients, this qualitative study explored the approach, experience, and perspective of oncology healthcare professionals (HCPs).

Semi-structured interviews were conducted with 18 HCPs (doctors, nurses, social workers, psychologists) working in lung, breast, cervical, head and neck and general oncology, across four specialist adult cancer hospitals in Ireland. Interviews were analysed using thematic analysis.

Four key themes emerged: (1) 'frequently ask and advise but infrequently assist', with many HCPs asking about smoking and advising to quit, but with few referrals to formal SC service or provision of pharmacological support. While some HCPs did not routinely ask about smoking, almost all acknowledged the importance of SC; (2) 'patient related factors' encompassing cancer stage, social circumstances, level of stress having an impact on patient's ability to engage with quitting; (3) 'lack of a defined, uniform pathway'; (4) 'need for integrated or parallel service' – themes 3 and 4 reflect support for a structured and uniform service to promote health equity and assist quitting, a standardised yet individualised approach for a designated and tailored service; including subsidised pharmacotherapy, longer follow up, convenient options.

Cancer diagnosis is an important opportunity to assist patients to adopt healthier lifestyle choices. Recently published HSE national clinical guidelines should support provision of SC for cancer patients, but may require tailoring.

## **Review of Covid-19 outbreaks in Centres for Disabilities in the HSE North East Region**

Elaine Brabazon<sup>1</sup>, Helen Byrne<sup>1</sup>, Karen O'Reilly<sup>1</sup>, Keith Ian Quintyne<sup>1,2</sup>, Augustine Pereira<sup>1</sup>

<sup>1</sup>Department of Public Health, HSE North East, Co. Meath, Ireland. <sup>2</sup>School of Public Health, University College Cork, Cork, Ireland

### **Abstract**

Outbreaks in centres for disabilities have been prevalent through-out the Covid-19 pandemic and has impacted on both clients and staff. This study reviews the distribution of these outbreaks in the HSE North East region in Ireland.

Data was extracted from CIDR for all Covid-19 outbreaks in residential facilities between March 2020 and March 2022 and analysed in Excel.

In total, there were 212 Covid-19 outbreaks declared in Residential Institutions between March 2020 and March 2022 in the North East Region. Of these, 120 (57%) were in centres for disabilities. The number of outbreaks declared in centres for disabilities has increased over time with almost half of all outbreaks (n=58) being declared in the first three months of 2022. There were 22 outbreaks in 2020 and 40 in 2021.

There were 590 confirmed cases associated with outbreaks in centres for disability during this time period. Just over half of these cases were in staff with the remaining cases in clients. The number of positive clients associated with outbreaks in these settings increased since 2020 to 110 in 2022. There were six Covid-19 deaths in clients linked to outbreaks in these settings.

The number of outbreaks and corresponding number of clients and staff associated with outbreaks in centres for disabilities has increased since 2020 and most likely reflects the increased transmissibility of the Omicron variant.

## **Use of data visualisation tools & run charts to investigate the impact of community engagement messages during COVID-19 pandemic**

Elaine Brabazon, Anne McEneaney, Helen Byrne, Fiona Daly, Finola McMamany, Augustine Pereira

Dept. of Public Health,, HSE North East, Co. Meath, Ireland

### **Abstract**

Communication by Regional Public Health departments with the local population through various channels including radio interviews and social media has been a feature of COVID-19 Pandemic. This study aims to review data visualisation techniques and their impact during the pandemic.

Data was gathered from various sources including CIDR and various teams in HSE North East, Department of Public Health. Data from the communications team documenting significant engagement events with the public by the Department, was a useful source of information.

Run charts and various data visualisation tools were used to present data for communicating messages for the public and/or to assess the impact of engagement during the pandemic. At various milestones, infographics and maps on total cases notified in the region were released on social media. Some of these tweets had wide reaches – gaining over 20,000 impressions on the Departments twitter feed. Other messages on outbreaks, used spider diagrams to track outbreak transmission patterns and gained traction in national newspaper articles. Run charts also provided a method to review the impact of messages to the public in Louth during Wave 4 with reductions in the 7 day rolling averages detected following 3 periods of targeted communications with the public.

Using data visualisations to communicate public health messages is an important aspect of public health work. Further research is required to evaluate the reach and impact of messages and identify the most valuable tools that can be used to interact with the public to reduce the burden of infectious diseases.

# Adapting Public Health Surveillance Activities to COVID-19 using Quality Improvement methodologies

Elaine Brabazon<sup>1</sup>, Michael Carton<sup>2</sup>, Helen Byrne<sup>1</sup>, Augustine Pereira<sup>1</sup>, Keith Ian Quintyne<sup>1,3</sup>

<sup>1</sup>Dept. Public Health, HSE North East, Co. Meath, Ireland. <sup>2</sup>Quality Assurance Division, HSE, HSE, Ireland. <sup>3</sup>School of Public Health, University College Cork, Cork, Ireland

## Abstract

The supply of high quality surveillance information is a cornerstone of infectious disease epidemiology, outbreak management and disease control. While the focus of Regional Public Health surveillance includes a wide variety of applications of surveillance science, the scale of surveillance activity during the COVID-19 pandemic has been unprecedented in the organisational memory for regional departments. The scale up of surveillance activities and the rapid changes in surveillance priorities for both COVID-19 and other infectious diseases posed the greatest challenge.

The aim of this study was to capture learning from experiences of using Quality Improvement in the area of Surveillance during a period of significant health protection activity and identify how these methods can be harnessed to provide rapid responses to surges in infectious disease activity and emergency management.

Initially, process mapping, PDSA cycles and the seven wastes of lean were useful as the process evolved to deal with the VUCA environment in the initial phases of the pandemic. Focus subsequently shifted to analysis of large volumes of data from multiple sources to inform decision making. Run charts were utilised as an analytical method and as an engaging data visualisation for communicating variation and the effectiveness of interventions for both COVID-19 and other infectious diseases.

This study is intended to inform the planning for ongoing surveillance of infectious diseases. The methodologies employed offered a systematic approach to the design of processes and systems that fits well with high throughput aspects of surveillance and epidemiology.

## **Establishment of a TB control surveillance system the HSE North East**

Elaine Brabazon<sup>1</sup>, Helen Byrne<sup>1</sup>, Sinead Skerry<sup>1</sup>, Tracy Doherty<sup>2</sup>, Andrea King<sup>1</sup>, Keith Ian Quintyne<sup>1,3</sup>

<sup>1</sup>Department of Public Health, HSE North East, Co. Meath, Ireland. <sup>2</sup>Our Lady of Lourdes Hospital, Drogheda, Co. Louth, Ireland. <sup>3</sup>School of Public Health, University College Cork, Cork, Ireland

### **Abstract**

Integrated Patient Centred TB (Tuberculosis) Care and Prevention is one of the three pillars of WHO's "END TB Strategy" and recommends early diagnosis of TB and systematic screening of contacts and high risk groups.

In 2016, a regional TB service and surveillance system was established in the HSE North East to monitor the epidemiology of TB and LTBI. Data for this review was extracted from this surveillance system, patient charts and CIDR.

From 2016 to 2021, there were 119 cases of TB notified to the Department of Public Health HSE North East, the majority of which were Pulmonary TB. The service identified over 1100 TB contacts of which 17% were referred for chemoprophylaxis or TB treatment. A further 4% of cases were followed up by serial chest X-Ray. The rate of non-attendance at clinic was measured at 7% overall. Contacts per case identified for screening ranged from 0 - 128 contacts per case. This demonstrates the unpredictable nature of the workload associated with the TB contact tracing process. As part of a Quality Improvement initiative, reasons for attendance and non-attendance at the clinic were reviewed by means of a patient feedback survey. The impact of COVID was also noted during this review, with much lower numbers of TB and TB contacts identified in 2020 and 2021.

The development of a TB control surveillance system has provided a number of benefits in the region including the availability of information for surveillance, improvement, patient safety, assurance and meeting long term strategic goals.

# AN EXPLORATION OF COVID-19 TRANSMISSION DYNAMICS IN IRELAND USING NATIONAL CONTACT TRACING DATA

Ciara Carroll<sup>1</sup>, Jwensh Kumawat<sup>1</sup>, Claire Buckley<sup>1,2</sup>, Greg Martin<sup>1</sup>

<sup>1</sup>COVID-19 Contact Management Programme, Dublin, Ireland. <sup>2</sup>School of Public Health, University College Cork, Cork, Ireland

## Abstract

Close contacts identified to the COVID-19 Contact Management Programme (CMP) have been offered testing for SARS-CoV-2 since May 2020. This study sets out to use CMP data to explore factors impacting transmission of COVID-19.

Results for close contacts reported to CMP who attended directly for polymerase chain reaction (PCR) testing between 19th May 2020 and 18th January 2022 were identified. The proportion of close contacts testing positive was calculated with 95% confidence intervals (CIs), with subgroup analysis by circumstances of contact, predominant variant, case and close contact symptom status, and case and close contact demographics. Binomial logistic regression was used to calculate odds ratios for transmission.

PCR test results were available for 595,236 close contacts, 24.7% (n=147,048; 95% CIs 24.6%, 24.8%) of whom had a positive result. The proportion testing positive was lowest in July 2020 at 6.0% (95% CIs 4.9%, 7.1%) and highest in January 2022 at 39.8% (95% CIs 39.4%, 40.2%). The odds ratio (OR) of a positive result was highest when Omicron was the predominant variant (OR 1.76, 95% CIs 1.72, 1.79), the case was aged 45-64 (OR 1.73, 95% CIs 1.69, 1.77), or there was ongoing exposure to the case (OR 1.71, 95% CIs 1.69, 1.74), and lowest for workplace close contacts (OR 0.51, 95% CIs 0.49, 0.54) and prior to the emergence of novel variants (OR 0.64, 95% CIs 0.62, 0.65).

The proportion of close contacts testing positive varied significantly throughout the pandemic, with novel variants and the type of exposure having the greatest impact.