

Centre for Veterinary Epidemiology and Risk Analysis (CVERA)



In this CVERA e-zine, we provide a brief overview of some of the recent work conducted by CVERA staff in collaboration with a wide range of national and international institutions. More in-depth information can be found at <http://www.ucd.ie/cvera/>, noting the role of CVERA to provide high quality independent scientific research and advice to support national evidence-based policymaking in animal health & welfare and public health and related matters.

Professor Simon More re-elected Chair of EFSA's Scientific Committee

Professor Simon More was recently re-elected Chair of the Scientific Committee (SC) of the European Food Safety Authority (EFSA) for a second three-year term, from 2021-2024. The SC is EFSA's overarching scientific panel, bringing together the Chairs of each of EFSA's ten Scientific Panels (focusing on different areas of the food and feed chain) plus six independent experts. The SC supports the work of the panels on cross-cutting issues, and focuses on the development of harmonised risk assessment methodologies in fields where EU-wide approaches are not yet defined.

An evaluation of four private animal health and welfare standards and associated quality assurance programmes for dairy cow production

Private standards in animal health and welfare (AHW) and associated quality assurance (QA) programmes have the potential to substantially improve AHW. However, there are concerns that they do not necessarily do so. In this study, we evaluated four private AHW standards and associated QA programmes for dairy cow

production, from Denmark, Ireland, the Netherlands and the UK, using an existing (but adapted) conceptual framework. We found limited objective information to support programme claims, although there were considerable differences between programmes. Across all programmes, problems were identified with respect to transparency, and attempts to scrutinise claims would not be a straightforward process for most consumers. Among the programmes, there were notable examples of best-practice in AHW. There is a strong case for regulatory oversight of private standards in AHW and associated QA programmes. [[More et al. *Food Policy* \(in press\)](#) available shortly].

Spatio-temporal models of bovine tuberculosis in the Irish cattle population, 2012-2019

In Ireland, the incidence rate for bovine tuberculosis (bTB) varies by herd and location. It is hoped that statistical disease-mapping models accounting for both spatio-temporal correlation and covariates might contribute towards explaining this variation. This study, conducted by Madden et al. in collaboration with the University of Limerick and the Department of

Agriculture, Food and the Marine, highlights national bTB incidence rates and suggests that shifting from national level analysis to smaller geographical regions may help identify localised high-risk areas. [[Madden et al. *Spatial and Spatio-temporal Epidemiology* 39, 100441](#)].

Protective immunity against tuberculosis in a free-living badger population vaccinated orally with *Mycobacterium bovis* Bacille Calmette Guérin (BCG)

In experimental trials, vaccination of badgers with *Mycobacterium bovis* Bacille Calmette–Guérin (BCG) has been shown to protect badgers against tuberculosis. This is supported by results from the 3-year County Kilkenny BCG vaccine field study, which suggest that BCG vaccination of badgers could be a highly effective means of reducing the incidence of tuberculosis in badger populations. The results are consistent with an indirect protective effect in the non-vaccinated badgers leading to a high level of population immunity. This study was led by the UCD Tuberculosis Diagnostics and Immunology Research Laboratory with colleagues from CVERA and the Department of Agriculture, Food and the Marine. [[Gormley et al. *Transboundary and Emerging Diseases* \(in press\)](#)].

Pre-symptomatic transmission of SARS-CoV-2 infection: a secondary analysis using published data

Using published data, this study estimated the proportion of pre-symptomatic transmission of SARS-CoV-2 infection that can occur, and the timing of transmission relative to symptom onset. The estimated mean transmission time relative to symptom onset ranged from -2.6 (95% CI -3.0 to -2.1) days before infector symptom onset to 1.4 (95% CI 1.0 to 1.8) days after symptom onset, and the proportion of pre-symptomatic transmission ranged from 45.9% (95% CI 42.9% to 49.0%) to 69.1% (95% CI 66.2% to 71.9%). There is

substantial potential for pre-symptomatic transmission of SARS-CoV-2 across a range of different contexts, highlighting the need for rapid case detection, contact tracing and quarantine. The study was led by Miriam Casey-Bryars in collaboration with the staff from the DAFM One Health Scientific Support Unit, the Health Information and Quality Authority, the UCD School of Veterinary Medicine and other UCD research centres. [[Casey-Bryars et al. *BMJ Open* 11, e041240](#)].

Population mobility trends, deprivation index and the spatio-temporal spread of Coronavirus disease 2019 in Ireland

Like most countries worldwide, the coronavirus disease (COVID-19) has adversely affected Ireland. This study investigated the spatio-temporal trend of COVID-19 incidence; described mobility trends as measured by aggregated mobile phone records; and investigated the association between deprivation index, population density and COVID-19 cases while accounting for spatial and temporal correlation. Despite adjustment for population density and the average number of persons per room, Madden et al found an association between deprivation index and COVID-19 incidence for the most deprived quintile compared to the least deprived. There was a large range of spatial heterogeneity in COVID-19 cases in Ireland. The results suggest that prioritising densely populated deprived areas (that are at increased risk of comorbidities) during vaccination rollout may capture people that are at risk of infection and, potentially, also those at increased risk of hospitalisation. The study was conducted in collaboration with the Health Information and Quality Authority, the National University of Ireland Maynooth and the University of Limerick. [[Madden et al. *International Journal of Environmental Research and Public Health* 18, 6285](#)].

Trends in estimated intramammary antimicrobial usage in the Irish dairy industry from 2003 to 2019

Understanding antimicrobial (AM) usage is key to safely reducing the use of antimicrobials in food-producing animals and as part of addressing the global public health threat of AM resistance. The authors estimated intramammary AM usage in Ireland from national sales data for the period 2003 to 2019, updating previous work. Use of blanket dry cow therapy is still widespread. In addition, there was evidence of ongoing use of highest priority & critically important AMs. This study provides objective evidence in support of efforts to direct and prioritize urgent changes in AM prescribing and usage as well as securing farm-level and prescriber-level data in Ireland. This study was led by Catherine McAloon from the UCD School of Veterinary Medicine in association with CVERA and Animal Health Ireland. [[McAloon et al. *JDS Communications* 2, 271-276](#)].

The Irish programme to eradicate bovine viral diarrhoea virus – organization, challenges and progress

This paper presents a detailed overview relevant to the organisation, challenges and progress in the Irish programme to eradicate bovine viral diarrhoea (BVD) from Ireland. The mandatory national eradication programme, coordinated by Animal Health Ireland, commenced in 2013. A key challenge in the early years, highlighted by modeling, was the retention of PI animals by some herd owners. This has largely been resolved by measures including graduated financial supports to encourage their early removal, herd-level movement restrictions, ongoing programme communications and the input of private veterinary practitioners (PVPs). The prevalence of PI calves in 2013 was 0.66%, within 11.3% of herds, reducing in each subsequent year, to 0.03 and 0.55%, respectively, at the end of 2020. Recent regulatory changes within the European Union for the

first time make provision for official approval of national eradication programmes, or recognition of BVD freedom, and planning is underway to seek approval and, in due course, recognition of freedom within this framework by 2023. The study was led by Dr. David Graham, CEO of Animal Health Ireland in collaboration with UCD CVERA, the Irish Cattle Breeding Federation, DAFM, the Helmholtz Centre for Environmental Research GmbH - UFZ in Germany and Animal Health and Welfare NI. [[Graham et al. *Frontiers in Veterinary Science* 8, 674557](#)].

The Irish Johne's control programme

This study by Gavey et al. presents detail of the Irish Johne's Control Programme (IJCP), which provides a long-term approach to the voluntary control of Johne's disease (JD) in Ireland, strongly supported by Irish cattle industry leadership. It leverages the establishment of Animal Health Ireland for control of animal diseases not regulated by the European Union. The programme objectives including facilitating protection against spread of JD to uninfected farms, reducing the level of infection when present, assuring markets of JD control in Ireland, and improving calf health and farm biosecurity. The programme will continue to innovate and improve to meet farmer and industry needs. [[Gavey et al. *Frontiers in Veterinary Science* 8, 703843](#)].

Dr Áine Collins

Recently, Dr Áine Collins moved to a new role as Expert in Food and Waterborne Diseases and Legionnaire's Disease in the Emerging, Food and Vector-Borne Diseases Programme in the European Centre for Disease Prevention and Control in Stockholm, Sweden. During her time in CVERA, Áine contributed to several study areas including COVID-19, Schmallenberg virus, antimicrobial usage, cattle movements, bovine tuberculosis and the national pig population. Though her

time in CVERA was brief, Áine will be greatly missed, both professionally and personally, and we wish her well in her new role.

Previous news items, can be found at:

<http://www.ucd.ie/cvera/news/>

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