

(i.e., medical technicians, pharmacists and administrators). Reasons of declining influenza vaccination included doubt of the need for the vaccine (27.8%), concern of vaccine safety (21.0%), bad experience following vaccination in the previous year (41.5%), insufficient time to attend immunisation clinic (9.6%) and fear of the needle (6.6%).

Conclusion Number of confirmed influenza cases is mostly under-reported. HCPs are at increased risk for influenza infection and efforts should focus on Infection prevention strategies and increasing immunisation coverage among HCPs and patients.

210 OCCUPATIONAL HEALTH PRACTICES FOR WASTEWATER TREATMENT WORKERS

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Introduction The increase in the global population entails large production of wastewaters (WW) around the world. WW treatment plants (WWTP) may represent a challenging and hazardous work environment, since various biological agents (viruses, bacteria, fungi, parasites), as well as endotoxins, can be transmitted to the ambient air in WW bioaerosols and cause various disorders. No occupational exposure limit values are currently available. Thus, the potential biohazard (BH) to WWTP workers (WWTPW) has become an increasingly relevant occupational health and safety (OHS) issue. Aims of our contribution are: to provide a state-of-the-art overview on the occupational BH to WWTPW and to elaborate good OHS practices, based on a field study.

Methods Ten-year (2008–2017) scoping review of articles in the PubMed® database, published in English, French, Italian or Spanish; full text review of the articles. Field study in a sample of 4 WWTP companies managing more than 200 plants overall, with a capacity varying from less than 1000 to more than 8 70 000 population equivalents and employing about 5 to 50 WWTPW. The study entails: collection of OHS documentation on risk assessment and management, health surveillance, education and training; microbiological environmental monitoring (culturable, countable, assayable biological contaminants); investigation on general and specific health data in a sample of WWTPW, by administering a questionnaire regarding socio-demographic aspects, life habits, occupational and clinical history, preventive and protective measures, and by collecting some functional data (e.g. respiratory function); exploring correlations between BH and OHS outcomes among WWTPW.

Result Scoping review is ongoing as well as enrolment of WWTP and occupational data collection.

Discussion Main expected results are: assessment of occupational BH in WWTP; development of good OHS practices, particularly on risk assessment, health surveillance, fitness for work, immunisation and preventive practices in WWTP; generation of benchmarks; contribution to the research on occupational limit values for BH.

633 AIRBORNE DISPERSION OF LEPTOSPIROSIS IN A MEAT PROCESSING PLANT

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Introduction Leptospirosis is the most common occupational zoonosis in New Zealand, with the highest incidence observed in meat processing workers and farm workers. New Zealand has a high incidence of human infection relative to other temperate developed countries, and the organism is widespread in livestock. Serological testing has confirmed infection in livestock presenting to abattoirs and in meat workers. The objective of this study was to determine whether leptospires were present in bioaerosols within the abattoir.

Methods Ambient air samples (n=18) were collected in an abattoir from ovine and bovine processing areas, using a SASS 3100 high volume sampler located adjacent to workers performing exsanguination (halal sticking), pelt removal, evisceration, a splitting saw (bovine only) and boning or meat cutting. Nucleic acid (DNA) in the bioaerosol samples was amplified using multiple displacement amplification (MDA) for metagenomic analysis, but the material was also tested for specific pathogenic species including *L. interrogans* sv Pomona and *L. borgpetersenii* sv Hardjobovis by quantitative PCR. The original (unamplified) DNA samples were also tested.

Result Leptospires were detected in 11 of the (MDA) samples from both ovine and bovine processing areas at the splitting saw, evisceration, exsanguination and pelt removal. There was no evidence of leptospires in samples taken in the boning or meat cutting areas, or in the five blanks taken. Two of the original DNA samples, both from the ovine pelt removal area, also tested positive for leptospires.

Discussion This is the first study to show that leptospires can be detected in a bioaerosol within an abattoir, suggesting a possible route of transmission to meat workers. The organism was detected at locations adjacent to slaughter, pelt removal and evisceration, with the strongest evidence near ovine pelt removal. This distribution directly mirrors the pattern of risk shown in serological testing of meat workers.

Integrated Worker Health and Well Being

1684 DEVELOPING HEALTHY WORKPLACES IN IRELAND

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Aim of special session To outline key elements in the development of the Healthy Workplace Framework and present Irish worksite case study

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1684a REVIEW OF REVIEWS ON THE EFFECTIVENESS OF WORKPLACE WELLBEING PROGRAMMES

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Introduction According to the world health organisation, workplace health programmes are one of the best ways to prevent and control chronic disease, and also to support mental health. There are over 2 million people employed in Ireland and this literature review informed the development of a national healthy workplace framework for Ireland.

Method The search strategy involved a keyword search of peer-reviewed databases of relevant subject areas (pubmed, econlit, psycinfo) and study type (cochrane library) supplemented by hand searches and selected citation searches. Included studies were systematic reviews or meta-analyses of a workplace intervention in the areas of nutrition and/or physical activity, mental health, smoking cessation and alcohol interventions, or health promotion. Evidence on outcomes across reviews was synthesised as 'strong' if the conclusion of at least two meta-analyses, 'moderate' if the conclusion of the one meta-analysis found, and 'some' if no pooled estimates, but the conclusion of the systematic review(s) found.

Results A range of measures of effect are used; they fall into the three broad categories of health behaviours, health outcomes, and economic or organisational outcomes. Most of the evidence from meta-analysis is on health outcomes, followed by organisational outcomes, and finally, health behaviours. In terms of health behaviours, there is strong evidence of a favourable impact on physical activity and fitness, and smoking cessation, while some evidence of a favourable effect on fruit and vegetable intake and dietary behaviour. With regard to health outcomes, there is strong evidence for a favourable impact on weight and BMI, stress/distress, anxiety and depression, and mental wellbeing. Examining organisational outcomes shows there is strong evidence of a favourable effect on work ability and sickness absences, while there is moderate evidence for task completion, supervisor's rating, job satisfaction, productivity, and work attendance.

Conclusion Overall, there is strong evidence of a favour effect of workplace programmes on health behaviours, health outcomes, and organisational outcomes.

[^] This presentation is based on a report, *Rapid Review of Evidence on Workplace Wellbeing Programmes: Effects, Costs and Benefits, Organisational Factors and Policy Mechanisms*, by Robert Murphy, Emma O'Donoghue, Claire Doyle, and Carol Taaffe, Department of Health, Ireland. All authors contributed to the content on which this abstract is based, and all authors agree to this abstract being published.

1684b LEARNING FROM THE CONSULTATION ON A HEALTHY WORKPLACE FRAMEWORK FOR IRELAND

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IPH designed, delivered and analysed the consultation process used to inform the development of a new national policy on healthy workplaces in Ireland. Pre-consultation workshops were used to inform the main consultation approach and prioritise consultation questions, alongside input from an expert Steering Group. An online consultation questionnaire was refined, and then launched by the Minister for Health Promotion alongside a communication and dissemination plan. 4 regional workshops were facilitated attracting 193 attendees over a 10 week consultation period. Responses to the online questionnaire were analysed using SPSS, alongside qualitative analysis of free text responses. 1602 valid responses were received (n=1521 submitted on a personal basis; 81 on behalf of an organisation). Over 60% of respondents were over 45 and over 70% were female. 87% were public sector workers and around half had line management responsibility. There was a high level of support for the proposed vision, aims and objectives of the framework. Respondents viewed culture change, communication, leadership and inclusion as the most important policy objectives. Training, guidance and case studies were the resources most commonly identified as useful tools to support implementation. Mental health was identified as a priority issue, followed by physical activity and healthy eating. Older workers and workers with existing chronic illness or disability were viewed as a priority group, in addition to low paid workers. A perspective analysis explored patterns of response based on respondent age, gender, chronic illness status and occupational characteristics. Core themes emerging from the qualitative analysis related to better use of plain English; concerns regarding implementation; better integration of work-life balance issues and a focus on culture change.

1684c DEVELOPMENT OF A POSTGRADUATE PROGRAMME IN WORKPLACE WELL BEING

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Introduction Public policy has focused recently on public sector workplaces, which account for 15% of the Irish workforce, in the form of a national workplace well-being bill. The aim of this policy initiative is to ensure that each public sector employer develops a 'healthy workplace initiative'. In order to develop healthy workplace initiatives consistent with good health promotion practice, capacity building, in the form of workforce development is required. The Healthy Workplaces Framework, a key element of both the Department of Health Strategy 2016–2019 and the Healthy Ireland agenda, contains a commitment to develop a post-graduate programme in workplace well-being, in order to address workforce development, and the process by which this has taken place is the subject of this paper.

Methods The Discipline of Health Promotion in NUI Galway offer a suite of programmes (Certificates in Health Promotion) for the 'wider workforce'; those interested in developing the skills to implement health promotion initiatives in their work setting or with particular populations. Certificates have been developed to date in Cardiovascular Health/Diabetes Prevention, Oral Health and Youth Health, comprising three modules delivered over one academic year;

1. Core Principles of Health Promotion,
2. the specialist knowledge appropriate to the topic or setting, and