

Objectives This case study will identify Canadian policies and practices that promote antimicrobial stewardship and surveillance in the aquaculture industry.

Methods i) Compare antibiotic use by Canadian salmon aquaculture to other global industry leaders. ii) Compare regulatory regimes and surveillance strategies across industry leaders.

Results Prescribed antibiotic use in Canadian salmon aquaculture exceeds that of Norway, the industry leader, which has implemented an array of strategies to drastically reduce antibiotic use since the 1990s. Unlike Norway, Canadian aquaculture lacks monitoring programmes for AMR and, furthermore, has yet to document possible occupational exposure pathways to this hazard. Current data repositories do not elucidate health risks associated with AMR emergence in aquaculture settings.

Conclusion Canadian salmon aquaculture has an opportunity to lead the country's animal production industries in the development of a standardized sentinel surveillance network to accommodate formal risk analyses and early warning systems. Continuous AMR surveillance coordinated with current public health monitoring would promote health protective strategy development and antimicrobial stewardship within the country.

P-368 OCCUPATIONAL BIOLOGICAL LIMIT DERIVATION PROCESS AND BIOLOGICAL LIMIT VALUES FOR SEVERAL PRIORITY SUBSTANCES

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Introduction Biomonitoring and atmospheric metrology are complementary approaches to assess occupational exposure to chemicals. The ANSES working group on biomarkers of exposure (WGBME) has developed an approach to derive Biological Limit Value (BLV) for occupational priority substances.

Objectives The aim of this communication is to present the approach as well as the derived BLV for the priority substances.

Methods Based on available data and using a decision tree, 4 types of BLV may be derived: a BLV based on a health effect for substances with threshold effects, a BLV based on an Occupational Exposure Limit (OEL), a BLV based on a cancer risk level (10–4, 10–5 or 10–6) or a theoretical value called 'pragmatic BLV'. When knowledge on the relationship biomarker-health effects or biomarker-exposure is lacking, no BLV is derived. Whenever possible, a Biological Reference Value (BRV) based on the 95th percentile of a non-occupationally exposed population is also proposed. BRVs are not risk-based but are part of the preventer's toolbox.

Results Since 2011, 16 substances were assessed by the ANSES WGBME. Detailed information has been published in scientific reports which are publicly available on the ANSES website. Lead and Cadmium were the only chemicals for which BLVs based on relationship between health effect and biological levels were derived: lead BLV of 180 µg.L-1 based on neurological effects and urinary cadmium (5 µg.g-1 creatinine) and blood cadmium (4 µg.L-1) based on nephrotoxicity. BLVs (urinary concentrations) based on OELs were derived for cobalt (5 µg.g-1 creatinine), dichloromethane (0.2 mg.L-1) and styrene (40 µg.L-1). A pragmatic BLV based on OEL was

calculated for chromium VI (2.5 µg.L-1). No BLV was based on cancer risk level. In addition, no BLVs but BRVs were proposed for substances such as acrylamide, beryllium, butadiene and some phthalates.

Conclusion This expertise from the ANSES WGBME has led to derive several BLV to prevent health effects in workers or to control exposure to contaminants. BLV and BRV help occupational physician to unfold prevention program and surveillance in occupational settings.

P-372 SAFETY DATA SHEETS AS A HAZARD COMMUNICATION TOOL: AN ASSESSMENT OF SUITABILITY AND READABILITY

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Introduction Safety data sheets (SDSs) are printed materials designed to communicate the hazards associated with using chemicals/hazardous products in the workplace. SDSs are highly technical in nature, often containing dense, ambiguous text, which places considerable comprehension demands on workers, especially those with lower literacy skills.

Objective To assess the suitability and readability of SDSs as a hazard communication tool for workers.

Methods A random sample of 50 SDSs compliant with WHMIS 2015 were extracted from the CCOHS m(SDS) database. The Suitability of Materials (SAM) tool, originally designed to evaluate patient education materials, was used to assess SDSs for content, literacy demand, use of graphics, and layout/typography. To account for legislated content requirements under WHMIS 2015, an amended SAM tool was also developed for scoring. Readability software was used to determine the reading grade level required to understand SDSs based on several common formulas/indices.

Results When the original SAM tool was used, the mean total SAM score was 'not suitable' (30.22%). When the amended SAM tool was used, the mean total SAM score increased to 'adequate' (64.43%). The mean readability scores were as follows: Flesch-Kincaid Grade Level (10.2), Gunning-Fox Index (8.5), Coleman-Liau Index (12.2), and Simple Measure of Gobbledygook index (10.2).

Conclusion Even though the amended SAM tool was better able to identify content-related issues specific to SDSs, the use of SDSs as a hazard communication tool needs improvement. The SDSs analyzed required a reading grade level between the 8th and 12th grades. These levels exceed the 6th-grade reading level recommended to ensure that 75% of adult Americans can read the material without difficulty. Overall, chemical/hazardous product manufacturers should use readability assessments together with the amended SAM tool when writing SDSs to ensure that the written information is easily understandable for all audiences.

P-373 IMPACT OF MUSCULOSKELETAL DISEASES ON HEALTH-RELATED QUALITY OF LIFE AMONG OFFICE FEMALE WORKERS.

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The objective of this study is to assess the prevalence of musculoskeletal disorders (MSDs) among Medical Secretaries (MS) and their impact on their health-related quality of life (HRQL).

Methods A cross-sectional multicentric exhaustive study was conducted among medical secretaries working in three public hospitals. The survey included a self-administered questionnaire related to individual and professional characteristics, a French abbreviated version of the Karasek's Job Content Questionnaire, a French validated version of Nordic Questionnaire, a French validated version of the SF12 and NHP scores. The study also included objective validated clinical maneuvers. Determinants of MSDs and their impact on HRQoL were evaluated through univariate and multivariate analysis.

Results A total of 72 office female workers were included with a response rate of 81.8%. The mean age was 43.75 ± 8.9 years. The body mass index (BMI) was higher among workers over the age of 45 years. According to Karasek's model, 54 subjects (75%) were in 'Job strain' situation. During the last 12 months, back complaints were reported by 69.4% and neck complains were reported by 79.2% of workers. An impaired physical HRQoL (PCS <50,11) was identified in 72.2% of subjects. An altered mental HRQoL (MCS <47.96) was identified in 76.4% of workers. In the multivariate analysis, BMI was found to be a risk factor for MSDs of the back (OR: 1.2), whereas time spent in front of the computer screen was found to be a risk factor for MSDs of the neck (OR: 2.8). MSD of the back was an independent predictive factor for a more altered physical HRQoL (OR: 7.45), whereas MSD of the knees was an independent predictive factor for more altered mental HRQoL (OR: 1.87).

Conclusion The prevalence of MSDs among female office workers is high and have a negative impact on both physical and mental HRQoL.

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LIFE AND DEATH AT WORK: A TUNISIAN PROSPECTIVE STUDY

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Introduction Death at work remains a frequent pressing public health issue despite undeniable progress in occupational health and safety. This study aims to assess cases of deaths at the workplace reported in the Forensic Medicine Department of a public hospital in the central region of Tunisia.

Patient and Methods A prospective exhaustive study was conducted in the Forensic Medicine Department of a public hospital located in the central region of Tunisia (Mahdia). This study concerned death occurring in the workplace for which a forensic investigation was carried out during a period of four years from January 2016 to December 2019.

Results Of the 728 deaths reported to the Forensic Medicine Department during the study period, only thirty-five deaths occurred in the workplace with an incidence of 4.8%. The deceased were mostly men (sex ratio = 4) and mean aged 48 years. Victims were blue-collar workers in 97% of cases, fishermen in 34% of cases, security guards in 14% of cases, construction workers in 12% and finally agricultural labourers in 2% of cases. The mechanism of

death mostly reported was drowning (34%) followed by cardiac accidents (23%) and trauma (16%). This study revealed a case of suicide in the workplace and two cases of white autopsy.

Conclusion Deaths in the workplace fall into two broad categories: deaths due to workplace injuries or fatal work-related accidents including motor vehicle accidents, machinery-related events, homicides, falls, and electrocution, and deaths due to chronic diseases such as ischemic accidents, aortic dissection. This study has highlighted the contribution of early autopsy in revealing the cause of deaths occurring in the workplace and the need to implement preventive measures to minimize workplace-related preventable deaths.

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OCCUPATIONAL FUTURE OF HEALTHCARE WORKERS WITH OCCUPATIONAL DERMATITIS.

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Aim To identify factors influencing the occupational future of healthcare workers suffering from occupational dermatitis.

Patients and Methods This was a multicenter cross-sectional study of healthcare workers suffering from occupational dermatitis in the four public hospitals in the central region of Tunisia. A synoptic sheet related to socio-professional and administrative data was completed. A self-questionnaire relative to medical data and occupational future was completed during a direct interview.

Results The study involved 40 healthcare workers, only 37 workers were included in the study. They were predominantly female (73%) and mean aged 44.7 ± 9.4 years. A request of reclassification was introduced in 19 cases (51%), workstation adaptation in 14 cases (38%) and allergen eviction in 20 cases (54%). A mutation was reported in two patients (5.4%) and three workers retired (8.1%). A statistically significant association was found between the request of reclassification, a history of allergic manifestations ($p = 0.003$) and the allergic agent ($p = 0.014$). Workstation layout was significantly associated with a history of allergic manifestations ($p = 0.039$), the hand palm location ($p = 0.04$), and eviction measures. After multiple binary logistic regression, the request of reclassification was significantly correlated with a history of allergic manifestations ($p = 0.008$), a sensitization to nickel sulfate ($p = 0.009$) and the fingers location ($p = 0.038$). The change of workstation was significantly correlated with a history of allergic manifestations ($p = 0.026$).

Conclusion The occupational future of healthcare workers suffering from occupational dermatitis depends on a history of atopy (especially allergic rhinitis) and sensitization to allergens (thiuram mix).

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ORIGIN, PREVALENCE AND DETERMINANTS OF VIOLENCE IN PUBLIC HOSPITALS IN TUNISIA.

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