**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 commuication is to present the approach as we as the derived BLV for the priotity 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 phtalates.

**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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