

# Infectious Occupational Agents

## 1069 HEALTH RISK MANAGEMENT: APPRAISAL OF TWO MCP MODELS FOR NON-IMMUNE EXPATRIATE WORKERS WITHIN NIGERIA'S OIL INDUSTRY

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**Introduction** Malaria remains a major occupational health concern accounting for several deaths per year and numerous lost work days among expatriate population, working and living in high malarious areas. Approximately 1% of all non-immune travellers who acquire *P. falciparum* infection die. Nigeria is a malaria endemic country with high transmission throughout the year. Employers within the oil industry usually adopt a malaria control program (MCP) which in generic terms consists of awareness, bite prevention, use of chemoprophylaxis and early diagnosis and treatment. It is clear that no single approach will sufficiently reduce this risk.

**Methods** Primary data was gathered through self-administered anonymised questionnaires to 35 non-immune expatriate respondents attending a clinic in Lagos. The questionnaire, completed at spot, sought to gather information on awareness and uptake of various employers' corporate malaria control programs – chemoprophylaxis use vs CMK/SBET approach.

**Results** Awareness to the malaria risk is high in the population at risk and this increased risk perception is significantly associated with risk-averse behaviours ( $\chi^2=6.13$ , CI 99%). Take-up of chemoprophylaxis (91%) while at work is encouraging as is compliance, post-travel. 60% of respondents that use chemoprophylaxis also carry Curative Malaria Kits (CMK). However, this risk perception did not seem to be significantly associated with acceptance of employer's policy contractually obligating use of chemoprophylaxis. ( $\chi^2=0.73$ , CI 50%).

**Conclusion** The most crucial aspect of any MCP is awareness. When non-immune employees are properly aware of the malarial risk, they are normally motivated to take responsibility for their own health and safety, and exhibit this motivation by demonstrating flourishing positive attitudes to preventative measures and advice given by employers. The study shows that although non-immune employees seem to be aware of the malarial risk, gaps in knowledge still exist. Long-term occupational travellers, rotational and offshore workers present some of the biggest challenge to the oil industry's effort at controlling malaria.

## 1198 MICROBIOLOGICAL AIR QUALITY ASSESSMENT OF PUBLIC HEALTH HOSPITALS, SOUTH AFRICA

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**Introduction** Bioaerosols and infectious patients in various departments within health facilities can be a risk of airborne infections. Concentration profiles of airborne bacteria including *Mycobacterium tuberculosis* (MTB) in hospitals have not been well characterised. This study assessed the levels of

airborne bacteria and evaluated whether carbon dioxide (CO<sub>2</sub>) could be an indicator of airborne bacterial concentration.

**Methods** A cross-sectional study was conducted at four public sector hospitals in South Africa, two with ultraviolet germicidal irradiation (UVGI) fixtures (A and D) and two without (B and C). Risk areas included respiratory isolation rooms, TB wards, respiratory wards, general medical wards, outpatient consulting rooms and waiting areas. Air samples (n=316, A=106, B=30, C=58, D=122) were collected in the morning and afternoon using the MAS-100 sampler. Personal (4 l/s) and stationary (20 l/s) airborne TB samples were collected and quantified by real-time qPCR. Environmental parameters (temperature, relative humidity (%RH), air velocity and CO<sub>2</sub>) were also measured. The data was analysed using Stata version 11.1.

**Results** The results revealed differences ( $p<0.05$ ) in air quality within and between hospitals. The average bacterial levels ranged from 20–1380 cfu/m<sup>3</sup>, with hospital C having the highest average counts (611 cfu/m<sup>3</sup>) followed by hospital B with 365 cfu/m<sup>3</sup>. Detectable airborne TB was reported in the waiting area of hospital B. Hospitals with UVGI fixtures had significantly ( $p=0.0001$ ) lower airborne microbial loads (181 cfu/m<sup>3</sup>) than those without (528 cfu/m<sup>3</sup>). The Kruskal Wallis test showed no bacterial count variability over a three day period or between morning and afternoon. A meaningful correlation ( $r=0.51$ ,  $p<0.05$ ) was found between airborne microbial levels and CO<sub>2</sub> levels (401–2398 ppm).

**Conclusion** CO<sub>2</sub> may be a predictor of microbial air quality however low bacterial counts may contain pathogens which may cause infection. Non-TB areas such as waiting areas pose a risk of exposure for health workers.

## 1599 OCCUPATIONAL HEALTH ASPECTS OF EMERGING INFECTIONS – THE EXPERIENCE FROM DEVELOPING COUNTRIES

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**Aim of special session** This session will cover occupational health aspects of emerging infections among healthcare workers and other occupational groups in developing countries. Presenters from Brunei, Singapore, Thailand and the United Arab Emirates will share their firsthand and contemporary experiences on the subject, and the strategies to manage this important issue in occupational health.

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## 1599a FLU VACCINATION FOR HEALTH CARE WORKERS – WHY AND WHY NOT?

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Influenza is a common infection affecting the general population. It has various implications on both patients and health care workers (HCWs). HCWs can acquire influenza from the