Environmental HEALTH 2013

Science and Policy to Protect Future Generations

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Poster Program

MONDAY 4TH MARCH 2013

Poster Session 1

[P1.1]	**Oil and gas exploration in Nigeria's Niger Delta: Health and legal implications of a polluted lanscape** O.F. Oluduro*, A.O. Oluduro (Mrs), *Obafemi Awolowo University, Ile-Ife, Nigeria*
[P1.2]	**Coping with weather in cape town: Use adaptation & challenges in an informal settlement** K. Agbor, *University of the Western Cape, South Africa*
[P1.3]	**Decolourisation of wastewaters using composite coagulant: A novel solution to the textile industries** A.K. Verma*, P. Bhunia, R.R. Dash, *Indian Institute of Technology, India*
[P1.4]	**Heavy metal enrichment of groundwater in parts of Kwale County, Kenya** M.W. Chege*[1], N.O. Hashim[1], A.S. Merenga[1], J. Tschiersch[2], *[1]Kenyatta University, Kenya, [2]German Research Center for Environmental Health, Germany*
[P1.5]	**Consensus sequence-based scheme for epidemiological typing of Taiwan environmental isolates of *legionella pneumophila*** M.C. Tung[1], J.S. Chen[4], B.M. Hsu[2], S.Y. Hsu[3], Y.C. Chiu[3], D.D. Ji[5], K.H. Huang*[2], *[1]Tungs' Taichung MetroHarbor Hospital, Taiwan, [2]National Chung Cheng University, Taiwan, [3]Cheng Hsin General Hospital, Taiwan, [4]National Defence Medical Center, Taiwan, [5]Centers for Disease Control, Taiwan*
[P1.6]	**Antibiotic resistance pattern and gene expression of non-typhoid salmonella in aquatic environment** M.C. Tung[1], Y.C. Chiu[2], B.M. Hsu[3], K.H. Huang*[3], C.T. Chen[2], J.S. Chen[1], *[1]Tungs' Taichung MetroHarbor Hospital, Taiwan, [2]Cheng Hsin General Hospital, Taiwan, [3]National Chung Cheng University, Taiwan, [4]National Defence Medical Center, Taiwan, [5]National Kaohsiung First University of Science and Technology, Taiwan*
[P1.7]	**Phylogenetic analysis combined with geographic data of *Salmonella* strains from surface water in Taiwan** M.C. Tung[1], B.M. Hsu[2], H.L. Tsai[3], J.S. Chen[3], S.M. Shen[4], Y.C. Chiu[3], K.H. Huang*[2], *[1]Tungs' Taichung MetroHarbor Hospital, Taiwan, [2]National Chung Cheng University, Taiwan, [3]Cheng Hsin General Hospital, Taiwan, [4]National Defence Medical Center, Taiwan, [5]National Kaohsiung First University of Science and Technology, Taiwan*
[P1.8]	**Climate and predicting female *Aedes aegypti* abundance: A case study of Jeddah, Saudi Arabia** H.M. Khormi*[1,2], L. Kumar[1], R.A. Elzahrany[2], *[1]University of New England, Australia, [2]University of Umm Al-Qura, Saudi Arabia*
[P1.9]	**Application of molecular biological techniques for analysis of *Salmonella* seasonal distribution in stream water** K.H. Huang*[1], M.C. Tun[2], B.M. Hsu[1], H.L. Tsai[3], P.M. Kao[1], H.J. Wang[1], H.Y. Hsiao[1], M.J. Su[4], W.C. Huang[5], Y.L. Huang[6], *[1]National Chung Cheng University, Taiwan, [2]Tungs' Taichung MetroHarbor Hospital, Taiwan, [3]Cheng Hsin general hospital, Taiwan, [4]Buddhist Dalin Tzu Chi General Hospital, Taiwan, [5]Mackay Memorial Hospital, Taiwan, [6]National Kaohsiung First University of Science and Technology, Taiwan*
[P1.10]	**Seasonal distribution of *Legionella* and *Legionella pneumophila* in Taiwan's rivershed: Evaluation with *Legionella* cultivation method and molecular technique** M.C. Tung[1], B.M. Hsu[2], S.M. Shen*[2], J.T. Huang[2], P.M. Kao[1], S.Y. Hsu[3], Y.C. Chiu[3], C.W. Fan[2], Y.L. Huang[4], K.H. Huang[2], *[1]Tungs' Taichung MetroHarbor Hospital, Taiwan, [2]National Chung Cheng University, Taiwan, [3]Cheng Hsin General Hospital, Taiwan, [4]National Kaohsiung First University of Science and Technology, Taiwan*
[P1.11]	**Evaluation of immunomagnetic separation for the improvement of *salmonella* detection in surface water environment** M.C. Tung[1], B.M. Hsu[2], C.T. Chen[3], K.H. Huang*[2], J.S. Chen[2], H.J. Wang[2], *[1]Tungs' Taichung MetroHarbor Hospital, Taiwan, [2]National Chung Cheng University, Chiayi, Taiwan, [3]Department of Emergency Medicine, Cheng Hsin General Hospital, Taiwan, [4]Surgical Department, Cheng Hsin General Hospital, Taipei, Taiwan*
[P1.12]	**Effect of 24-epibrassinolide on oxidative responses induced by diethyl phthalate in Vigna radiate L** L.J. Cheng*[2], M.J. Hung[1], Y.I. Cheng[1], T.S. Cheng[1], *[1]National University of Tainan, Taiwan, [2]Chia-Nan University of Pharmacy and Science, Taiwan*
[P1.13]	**Ametrine concentrations found in Brazilian River induce micronuclei formation and erythrocytic nuclear abnormalities in fish** R.G. Botelho*[1], S.H. Monteiro[1], C.A. Christofoletti[2], V.L. Tornisielo[1], *[1]Center for Nuclear Energy in Agriculture/University of São Paulo, Brazil, [2]São Paulo State University, Brazil*
[P1.14]	**Application of data mining technique in profile identification of employees absenteeists and presenteeists in a courier company in city of São Paulo** A.M. Martiniano*[1], R.S. Sassi[2], R.P.F. Ferreira[3], *[1]Nove de Julho University, Brazil, [2]Nove de Julho University, Brazil, [3]Nove de Julho University, Brazil*
[P1.15]	**The application of adsorption modeling and spectroscopy to the comparison of two species of plant growth-Promoting rhizobacteria as biosorbents of cadmium in different pH solutions** M. Safari*[1], A. Sorooshzadeh[2], A. Asgharzadeh[1,2], S. Saadat[2], *[1]Tarbiat Modares University, Iran, [2]Soil and Water Research Institute, Iran*
[P1.16]	**Biological effects in vitro of raw and thermally treated asbestos-containing materials** A. Pugnaloni*[1], G. Lucarini[1], C. Rubini[2], A. Smorlesi[3], F. Giantomassi[2], A.F. Gualtieri[4], *[1]Dpt. Scienze Cliniche e Molecolari,, Italy, [2]Dpt. Scienze Biomediche e Sanità Pubblica,, Italy, [3]Dpt. Nedicina Sperimentale e Clinica, Università Politecnica delle Marche, Ancona, Italy, [4]Dpt. Scienze Chimiche e Geologiche, Università Modena e Reggio Emilia, Modena, Italia, Italy*

	E. Galarneau, *Environment Canada, Canada*
[P3.53]	**Indeterminate indoor air quality in green buildings: A case-study of a residential high-rise building** Y. Xiong*[1], U. Krogmann[1], G. Mainelis[1], L.A. Roderburg[1], C.J. Andrews[1,2], *[1]Rutgers University, USA, [2]Rutgers University, USA*
[P3.54]	**Solid waste policy in Brazil and the increase of consumer goods: The introduction of ecodesign principles to improve consumer perception of environmental performance** S.G. Gueiros Teixeira, *Federal University of Rio de Janeiro, Brazil*
[P3.55]	**A compilation of field surveys on elemental atmospheric mercury (Hg^0_{gas}) from contrasting environmental settings in Europe, South America, South Africa, and China: Separating fads from facts** P.L. Higueras*[1], R. Oyarzun[2], J. Kotnik[3], O. Vaselli[4], *[1]University of Castilla-La Mancha, Spain, [2]Universidad Complutense de Madrid, Spain, [3]Institute Josef Stefan, Slovenia, [4]University of Firence, Italy*
[P3.56]	**Bioaerosols and odours from composting** R. Al-Ashaab*, G. Drew, P. Longhurst, S.J.T. Pollard, S.F. Tyrrel, *Cranfield University, UK*
[P3.57]	**Risk of exposure to infrassons and low frequency noise - Case study of a village of Coimbra city (Portugal)** J. Almeida[1], N. Sá*[1], P. Nossa[2], *[1]College of Health Technology of Coimbra, Portugal, [2]Coimbra University, Portugal*
[P3.58]	**Cognitive assessment of riparian schoolchildren exposed to mercury from the Western Brazilian Amazon** S.S. Hacon[1], J.V. Jacobson[2], D.H. Bonila[3], C.F. Carvalho[4], M.F. Fonseca*[5], V. Oliveira[6], W.R. Bastos[1], *[1]ENSP-Fundacao Oswaldo Cruz, Brazil, [2]Universidade Federal Fluminense, Brazil, [3]Instituto Nacional de Salud Publica, Mexico, [4]Universidade Federal da Bahia, Brazil, [5]IFF-Fundacao Oswaldo Cruz, Brazil, [6]Universidade Federal de Rondonia, Brazil*
[P3.59]	**Wide statistical dispersion of mercury hair concentrations may hide overexposed females in the surrounding of a hydroelectric plant being built in Brazilian Amazon** S.S. Hacon*[1], M.F. Fonseca[2], D. Mourao[1], G.P. Silva[1], N. Gomes[3], W.R. Bastos[3], *[1]ENSP/Fundacao Oswaldo Cruz, Brazil, [2]IFF/Fundacao Oswaldo Cruz, Brazil, [3]Universidade Federal de Rondonia, Brazil*
[P3.60]	**A timeline of the irregular occupation in hill areas on the city of rio: An environmental insight across social dichotomies, and the proposal of ecodesign directives with third party certification** S.G.T. Gueiros Teixeira*, C.F.M. Mahler, R.S.M. Moita, N.G.T.C.L. Lucas, *Federal University of Rio de Janeiro, Brazil*
[P3.61]	**Classification of polarimetric SAR data using Yamaguchi's polarization orientation compensation (POC) with decision tree classifier for urban area** V. Turkar*, Y.S. Rao, *IIT Bombay, India*
[P3.62]	**Microbiological isolation of vibrio and other related organisms from Nworie River in Imo State Nigeria** C.W. Agbakwuru*[1], C.O. Onwosi[2], *[1]Imo State University Owerri, Nigeria, [2]University of Nigeria Nissuka, Nigeria*
[P3.63]	**Bioassessment of petroleum products mixtures using microalgae** M.O. Kadiri*, S. Isagba, *University of Benin, Nigeria*
[P3.64]	**An epidemiological and environmental survey on occupational health hazards during silk production and processing** A. Vijayabhaskararao*, S. Vidyunmala, S. Venkataswamy, S. Smitha, K. Nagalakshmamma, *Pondicherry University, India*
[P3.65]	**Potential application of electro-coagulation process with cylindrical aluminium electrodes for retrofit of existing sewage treatment plants** D.D. Nguyen*[1], S.D. Kim[1], Y.S. Yoon[1], *[1]Dankook University, Republic of Korea, [2]Gentro Co. Ltd, Republic of Korea, [3]Dankook University, Republic of Korea*
[P3.66]	**A comparative study of the pulmonary phagocytosis response to deposition of equidimensional silver and gold nanoparticles** L.I. Privalova*[1], B.A. Katsnelson[1], V.B. Gurvich[1], M.P. Sutunkova[1], V.Y. Shur[2], E.V. Shishkina[2], Y.B. Beikin[3], S.V. Pichugova[3], L.G. Tulakina[3], *[1]The Medical Research Center for Prophylaxis and Health Protection in Industrial Workers, Russia, [2]The Institute of Natural Sciences of the Ural Federal University, Russia, [3]The City Clinical Diagnostics Centre, Russia*
[P3.67]	**Occupational health problems to hawassa university referral and yirgalem hospital cleaners. Case study in two hospitals in southern Ethiopia** S. Balcha*, B. Yirsaw, D. Kassa, *Hawassa university, Ethiopia*
[P3.68]	**Urban ecological security evaluation based on land health** L.Y. Xu*, H. Yin, X.D. Xie, Z.X. Li, *School of Environment, Beijing Normal University, China*
[P3.69]	**Natural Environment and outdoor education in the warm and dry zones of Iran** M.H. Nasiri*, H.R. Azemati, R. Amirjani, *shahid rajaee teacher training university, Iran*
[P3.70]	**The satisfaction of rural people in the village of "abiyane" from the interaction with nature in creation of rural texture** M.H. Nasiri*[1], M.A. Ranjbar[2], M.M. Shaterpuri[3], *[1]shahid rajaee teacher training university, Iran, [2]Tehran University, Iran, [3]Art University Of Tehran, Iran*
[P3.71]	**Spatial dependency of the spread meningococcal meningitis on socio economic factor in Kaduna metropolis, nigeria** E.T. Umaru*[1], A.N.M. Ludin[1], F.A. Adeshina[2], M.R. Majid[1], S. Sabri[1], *[1]Universiti Teknologi Malaysia, Malaysia, [2]Obafemi Awolowo University, Nigeria*
[P3.72]	**Understating community exposures from the emissions inventory practices** N. Cheremisinoff*, C. Brown, A. Davletshin, *NP Limited, USA*
[P3.73]	**Evaluation of genotoxicity and influence on liver enzymes and histopathology in freshwater fish *Channa striatus* exposed to heavy metals (Pb, Cu, Ni and Cu)** N. Usmani*, M. Fatima, *AMU, India*

[P3.71]

Spatial dependency of the spread meningococcal meningitis on socio economic factor in Kaduna metropolis, nigeria

E.T. Umaru*[1], A.N.M. Ludin[1], F.A. Adeshina[2], M.R. Majid[1], S. Sabri[1]

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Meningococcal meningitis is a disease that has affected Africa, especially the countries under the Africa's meningitis belt for over a decade now. Kaduna metropolis of Nigeria falls within the Africa's meningitis belt. The study seeks to investigate the relationship between socioeconomic factors and the spread of the disease in Kaduna metroplois. Past meningococcal meningitis data (2007 – 2011) for each of the months in those years were collected and for the available recorded case of the disease. Geographic weighted regression analysis was employed in the study so as to be able to assess the level at which socioeconomic factors plays a role in the spread of the disease. Spatial Autocorrelation and Moran's Index showed that there was a positive correlation between the various elements that made up the socioeconomic factors with the spread of the disease. It was discovered that areas that have low socioeconomic level have more cases of the disease outbreaks. It shows that Socioeconomic factors are major determinants to the outbreaks of the disease. The study also indicates that the pattern of the spread is mostly around the populated areas.

Keywords: Meningococcal meningitis, Epidemics, Factors, Socioeconomic

Spatial epidemiology of meningococcal meningitis in Kaduna metropolis, Nigeria

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Introduction

eningococcal Meningitis which is also known as nimbrospinal meningitis is a contagious disease which is used by *Nissearea meningitis.* Most times the outbreaks ts with severe headache, throwing up and difficulty in ming the neck which eventually leads to comma in the ace of few hours Variane et al.,(1997). The destructive ture of a typical case that is not treated is 80%. According to Peltola, (1987) and WHO (2010), the meningitis disease is y significant cause of death and sorrow all over the world.
e spread of bacterial meningitis occurs everywhere in the rld. Apart from the epidemics, the World Health ganisation (WHO) has discovered that over 1.1 million bacterial meningitis incidences manifest every year and about 0,000 cases are disastrous. Out of 450,000 people that are acked by the disease over 55,000 are impaired and less an 65,000 casualties are as a result of *N. meningitidis*. From e records, there over 26,000 people that died (Tikhomirov et al., 1997), while 16,000 (6.4%) were incapacitated 10,000 (4%) had problems with hearing (Hodgson et al., 2001b), are m Africa.
udies have showed that meningococcal meningitis disease s a relationship with the level of income. A study conducted by Olowukure et al (2006) on the Geographic's and socioeconomic variation of meningococcal disease shows early that the risk of the disease in the most deprived areas s twice that of the less deprived area. Another study by ne et.al., (2003) pointed out that there is a direct lationship with Meningococcal meningitis and the low income group.

tatement of Problem

aduna state falls within Africa's meningitis belt. In spite of the early annual occurrences of this disease, governments do not seem to be winning the battle posed by epidemic. Most often, outbreaks take governments unaware despite the fact e period in which the disease is frequent is very well known. art of the problem is that the spread pattern of the disease is oorly understood.
n order to be able to maintain firm control over the disease, there is need to have a clearer understanding of the dynamics of the outbreak of the disease in terms of spread as well as ith respect to the socio-economic factors that support the ccurrence and strengthen its spread.

bjectives

- To assess the spatial pattern of the spread
- To identify areas that have high clusters of the disease
- To investigate the relationship between level of income with e spread of the disease

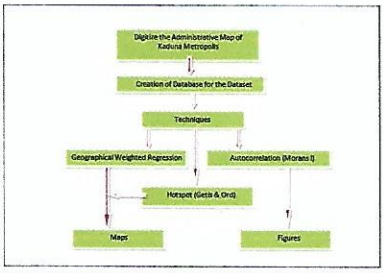
Methods

Data Sets

- Past data (2007-2011) on the spread of Meningococcal meningitis were sourced from the epidemiology unit of Ministry of Health Kaduna
- A survey was conducted to determine the income level of the twenty four districts that are within the study area
- Map of Kaduna metropolis with the twenty four districts.

Process

Process



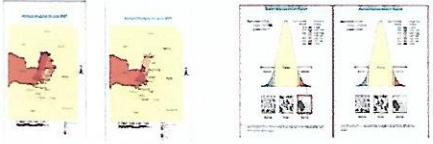
Results

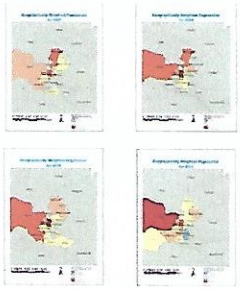
The results of the Geographical Weighted Regression showed clearly that there is a strong relationship between the spread of the disease and the level of income. Districts that are low income tend to have a stronger relationship than those that their income is not so low. Districts likeTudun wada, Rigasa, Sabon Gari, Anguwan Muazu, Makera and Nasarrawa represents that category. Districts like Barnawa, Badarawa Malali, Kabala and Narayi had the highest level of income, the relationship is weak.

The results for the hotspot analysis showed that Tudun wada, Rigasa, Sabon Gari, Hayin Banki and Badiko had the highest clusters of the spread of the disease throughout the five year period. Followed by Kakuri, Television, Sabon tasha, Doka and Matagyi. The other districts had a low spread of the disease throughout the five year period.

The Morans I auto correlation result showed that the z value was high for the four years, except in 2008 that it was low. It implies that there was a clustering pattern except for year 2008.

Figure #2





Conclusions

The results of the different analysis carried out showed cle that a particular part of Kaduna metropolis has consist attacks of the disease almost every year. The st recommends that districts like Tudun wada, Rigasa, Mak Doka, Hayin banki, Unguwan muazu, and nassarawa sho be given more attention in term s of public enlightenm about the nature of the disease and its spread and al more health centres should be provided to be able to m the population of these areas.

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