

4th World Congress on

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Posters



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Medical device reprocessing (MDR) in Alberta medical clinics: Patient safety risk warrants regulatory oversight

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Historically in Alberta, responsibility for monitoring infection prevention & control (IPAC) in non-governmental, unaccredited medical clinics had fallen on the business owner and/or physicians. In 2007, a sentinel event triggered a government directed review of IPAC in these settings. A program was created under the direction of a 10-member Advisory Committee: Infectious disease specialists, medical officers of health, senior infection control practitioners, and community physicians and surgeons. CPSA has since actively monitored IPAC with a priority on standards for MDR (cleaning, disinfection and sterilization of medical devices). Alberta has approximately 1700 medical facilities in the “non-governmental, unaccredited” category. Over 600 (>35%) perform some type of MDR and these were assessed for adherence to standards during 2008-2015. In 2013, a provincial policy for reporting the most critical deficiencies was formalized. From 2013-15, 131 assessments identified 17 (13.0%) with risks exceeding the reporting threshold to public health. Deficiencies contributing to the likelihood of reporting included but were not limited to inadequate device cleaning, lack of monitoring sterilization cycles for physical (time, temperature), chemical and/or biological parameters, use of unlicensed sterilizers and inadequate level of reprocessing given device risk classification (Spaulding’s). Post-exposure risk assessment deemed four (3.0%, n=131) a sufficient threat to initiate look backs for blood-borne pathogen exposure (HIV, HBV & HCV). Formal reporting and post-exposure risk assessment confirmed initial observations suggesting clinics performing MDR are at elevated risk of breaching IPAC principles that may jeopardize patient safety. The logistics and value of providing clinic support via robust regulatory controls is worth exploring.

Biography

Benjamin Kung is the Program Manager of IPAC for the CPSA and additionally serves as Governance Committee Chair on the Board of Directors, Alberta Public Health Association. He has completed his undergraduate training in Microbiology/Biology from University of Victoria and Environmental Public Health from British Columbia Institute of Technology, followed by graduate studies in IPAC from University of British Columbia and Epidemiology at London School of Hygiene & Tropical Medicine.

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Estimation of measles susceptibility in population of Slovakia: The cohort model

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Recently, thanks to immunization, no cases of measles have been reported in Slovakia. Information on the immune status of the population is important to prevent possible re-emergence of the disease. However, the last nationwide immunological survey in Slovakia was carried out in 2002. This work estimates current (2014) measles susceptibility in individual age groups using mathematic modeling. The analysis is based on administrative data on vaccination coverage, the immunological survey from 2002 and demographic data on age structure of the Slovak population. The cohort model considered changes since 2002: new single dose vaccinated cohorts (born 2000-2012) and cohorts vaccinated with the second dose (born 1989-2002). In other cohorts, immunity naturally partially waned and the proportion of cohorts with more effective post-infection immunity (naturally infected) declined. In 2002, there were approximately 241,000 susceptible individuals (approximately 4.5% of the population) in Slovakia. Most of them, besides children aged below one year and yet not vaccinated, were aged 17-34. In 2014, there were approximately 383,000 susceptible individuals (approximately 7.1% of the population), mostly non-vaccinated children up to one year and adults aged 30-45 years. These adults constituted the most prevalent susceptible cohort. The increased proportion of susceptible population is partially attributable to natural waning of the immunity in vaccinated individuals without natural contact with the disease. Therefore, in a potential epidemic outbreak, alongside the unvaccinated, 30-45 year old individuals (cohort born 1969-1984) will be the most endangered. Although the mathematic modeling, due to its limitations, cannot fully substitute the immunological survey, the estimations can sufficiently identify the endangered population cohorts to adjust the vaccination policy appropriately.

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Measles elimination in Slovakia related to mass vaccination

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Measles is one of the most contagious diseases known affecting respiratory system. Currently measles is eliminated in Slovakia since 1999. In this period, they were recorded only as imported and import-related cases. Our objectives were to describe the impact of vaccination strategy on measles incidence at national and regional levels and to assess the risk factors for measles infection. Our work is retrospective review of measles cases reported since January 1969 to December 2015. Measles reported cases are based on the standard criteria of ECDC. The data on morbidity were collected from the Epidemiological Information System of the Slovak Republic and data on the vaccination (according to the years of birth and the number of doses: MCV1 and MCV2) from the annual reports of administrative control of vaccination coverage. This study covers and compares periods: 1969-1984 (beginning of vaccination and its balance), 1985-1999 (decrease of endemic cases) and 2000-2015 (elimination of measles). The incidence of measles decreased during 1969-2015 mainly in the first (reported 108,091 cases; 145.4/100000) and second (reported 2,474 cases; 3.1/100000) period. In the third period only 23 import and import-related cases were reported. The highest age specific incidence was in the age group 0-4. The vaccination coverage was at the highest level (98-99%) in the long term, in the last three children cohorts (born in 2011, 2012 & 2013) decrease to 96.8-93.9%. Our analysis showed the positive impact of vaccination on the epidemiological situation and increase of anti-vaccination activities and risk population (Romany population and migrants).

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Accepted Abstracts



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Immunological non responder's real or virtual phenomenon

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Statement of the Problem: HIV and Hepatitis C viral Infection (HCV) have same mode of transmission. A subset of HIV people on antiretroviral therapy (ART) achieves virological suppression but poor recovery of CD4 cell termed as immunological non-responders. It has been recommended to start HCV treatment in HIV co-infection if CD4 cells are more than 200/ml. Immunological non-responders could be a challenge to initiate HCV treatment especially in limited resources setting.

Case Description: A 24 years intravenous drug abuser male with HCV for last three years presented as HIV positive (CD4-186/ml) on July 2008. Despite ZDV/3TC/EFV for six months he did not achieve immunological recovery but his viral load was below 400 copies per ml. On September 2009 he presented with fever and constitutional symptoms for two weeks. On examination he was pale, icteric and had hepatosplenomegaly. Investigation revealed pancytopenia, transaminitis, hepatosplenomegaly, sterile blood culture, normal chest X-ray, sputum for acid fast bacilli and PCR for *Mycobacterium* tubercle negative, negative rK-39, malaria negative. He had CD4 of 156/ml, HIV viral load 72 copies per ml and HCV RNA 15600 copies per ml. Bone marrow aspiration revealed 3+ *Leishmania donovani* (LD) bodies. ARV regimen was changed to TDF/3TC/EFV and tablet Miltefosine 50 mg twice a day for 28 days was initiated. He improved clinically and parasitologically. On April 2010 his second infection of Visceral Leishmaniasis (VL) was treated with injection Amphotericin B. On March 2011 and August 2012 he had third and fourth episode of VL infection and was treated with Amphotericin B plus Miltefosine and liposomal Amphotericin B respectively. However the fourth episode was continued with secondary prophylaxis for six months with immunological recovery (CD4 756/ml). On April 2015 his HCV was treated with 12 weeks Sofosbuvir and Daclatasvir with Rapid Viral and Sustained Viral Response.

Significance: Immunological non responders might be virtual phenomena.

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Salmonella species and the essential oil of aromatic plant in infected Wistar rats

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Laurus nobilis is an aromatic plant, widespread in Algeria and widely used by local people as a source of spice and for its medicinal properties. The essential oil of this plant native to western Algeria is the subject of our study. The essential oil extraction was performed by steam distillation, the yield obtained from leaf is (1.5%) by gavage Wistar rats males weight between 100g 80 et were infected with *Salmonella* then treated with a dose 1 g/kg of the essential oil. After sacrifice of the rats, histological examination of the intestines and internal organ (liver and spleen) shows the therapy of this magic plant *Laurus nobilis*.

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Chemical composition and antibacterial activity of essential oil of *Laurus nobilis* from Algeria

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Dried leaves and the essential oil (EO) of bay (*Laurus nobilis* L.) are used extensively in the food industry for seasoning of meat products, soups and fishes, this essential oils was extracted from leaves by hydrodistillation. The yield was 1%. The aim of this study was to evaluate the antibacterial activity of this essential oils against three bacterial strains *Staphylococcus aureus*, *Escherichia coli* and *Pseudomonas aeruginosa*. Orted that the high content of 1,8-cineole in the EO of *L. nobilis* contributed to its weak antimicrobial activity.

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Investigation of Lassa fever outbreak in Kastina State, Nigeria

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Lassa fever is an acute viral hemorrhagic illness caused by Lassa virus, a member of the virus family Arenaviridae. The disease is endemic in Sierra Leone, Guinea, Liberia and Nigeria with about 300000 to 500000 cases occurring yearly and about 5000 deaths. Its case fatality ranges from 5-35% but rose as high as 60% in the 2016 outbreak in Nigeria. On the 5th of April 2016, two cases of Lassa fever were reported in Katsina State. We, the NFELTP team investigated to confirm the outbreak, to describe its epidemiology, to assess the knowledge, attitude and practices of Lassa fever among health workers in the affected communities and to institute control measures. Active case search was conducted in hospitals and communities. We defined a case using established guidelines. We administered semi structured interviewer pretested questionnaires to health workers to assess knowledge, attitude and practices on the prevention and control of Lassa fever. We administered checklists of infection prevention and control (IPC) to the stakeholders to ascertain the level of preparedness of the State, LGA and health facilities to fight Lassa fever. We analyzed data with EPI Info version 7.2.1. The first index case of Lassa fever in Katsina State was a 38 year old patient managed at NNPC clinic Kaduna and later buried in Kankara LGA, Katsina State. The second index case was a 25 year old man, who presented at FMC Katsina with a history of having nursed his sibling for a similar illness in Gwagwalada about 25 days ago. A total of 82 contacts were line listed and monitored in the State; nine subsequently developed Lassa fever; eight were laboratory confirmed and one epidemiologically linked. The case fatality ratio was 27.3%. The result of the IPC checklist revealed that 40% of health facilities visited lack personal protective equipments, safety boxes, isolation wards and none had access to 0.05% or 0.1% chlorine solution. The result of the knowledge, attitude and practice showed that: 85% knew ways by which Lassa fever is transmitted, 95% knew how to protect themselves from contracting Lassa fever, 86% knew about PPE and 69% had no knowledge of case definition of Lassa. 4% of the respondents knew how to wash hands. Overall, 61% had poor knowledge of Lassa fever, 31% fair knowledge and 8% had good knowledge. This is the first reported case of Lassa from Katsina State. Most of the health facilities in the state lack basic infection prevention and control materials and basic knowledge on Lassa fever which should be addressed. We carried out sensitization talks and training on infection prevention and control at the health facilities. We recommend to the state to continuously sensitize the health workers on Lassa fever and to provide health facilities with safety boxes and full body personal protective equipment.

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