

**Type: Invited Presentation**

Final Abstract Number: 24.002

Session: Nosocomial Infections in Low and Middle Income Countries

Date: Friday, April 4, 2014

Time: 15:45–17:45

Room: Room 1.40

**Global Resistance Hot Spots - Role of low and middle income countries**

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Bacterial resistance is undoubtedly recognised as a major medical challenge in most healthcare systems. Resistance-determining genes, mostly in combination, and extensively drug-resistant (XDR) pathogens are spreading with unprecedented speed. Low- and middle-income countries with limited economic resources, high disparity in standard of living, weak national drug regulatory authorities, inefficient antibiotic policies, and erratic access to antibiotics are important high-impact resistance regions which contribute significantly to the global pool of resistance genes and difficult-to-treat-infections. Emerging markets, such as China, India and Brazil will face a growing resistance selection pressure while antibiotics become commodities in insufficiently regulated markets. The escalating resistance crisis will have a great impact on all civil societies worldwide. In high-income countries, empirically used ineffective antibiotics in the case of XDR or pandrug-resistant infections in critically ill patients will result in high mortality. In low- and middle-income countries, multidrug resistance leads to untreatable resistant infections much earlier in the escalating chain of resistant events as they do not have a broad enough selection of second-line drugs, and novel antibiotics may not be available or affordable. Moreover, the weak political will to face this problem and take concerted action in many resistance hot spots of the world accelerates the resistance spiral and puts all other countries, especially those with low resistance rates, at risk for increased imported resistance. This gloomy scenario of resistance with limited or no treatment option is already seen in some parts of the world and will influence the life expectancy as it threatens the advances of modern medicine.

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**Factors driving antimicrobial resistance in low- and middle-income countries**

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Antimicrobial use is increasing, particularly in Asian and Latin American countries where rising incomes are enabling greater access. The delicate balance in developing countries is between encouraging greater use for appropriate indications—consider the

one million deaths of children each year from pneumonia, much of it untreated—and the overwhelming tendency for inappropriate use of antimicrobials. In this talk, we cover recent trends in antibiotic consumption in low- and middle-income countries and the factors responsible for these changes and their potential impact on antimicrobial resistance.

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**Bridging the infection prevention and control (IPC) gap between theory and implementation - An African experience**

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The burden of healthcare associated disease in Africa is up to twenty times higher than high income countries. South Africa is fortunate in having strong support from the National Department of Health which is not necessarily the case in other African countries. There may be several reasons for this; 1) IPC is very much in its infancy in Africa and currently is being spearheaded by the Infection Control Africa Network (ICAN); 2) it is considered there are other more urgent health priorities than IPC; 3) the IPC education and skills development systems that exist in the high income countries do not always apply in low technology or rural environments. It is therefore essential that within the principles of IPC, practice and implementation is applicable to African healthcare systems with low resources—much can be done with good education.

The Unit for IPC, Stellenbosch University has developed a simple yet robust, training programme in IPC. The IPC course is tailor made to ensure that the major gaps found in the pre assessment are covered with practical examples in the clinical arena; a Certificate of Competence is issued. This basic IPC course is being developed into distance learning as well as tele-classes in several African languages.

There are also specific courses for IPC practitioners such as the six-month Fundamental IPC Course, and a two year part-time Post graduate Diploma; Masters in IPC has been introduced since 2013. Sterile Service training is as short courses and a Diploma in Hospital Technology is being developed in collaboration with the University of Namibia. Finally, there is an education project known as *Cape to Cairo* education programme being developed based on SMS/Text messaging systems using mobile phones to educate both civil society as well as remotely placed healthcare workers across Africa.

The impact of these education programmes is continuously assessed by an independent accreditation body and improvements have been significant.

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