

greater impact seen among the elderly, with a decrease of 3707 ($p < 0.001$) mean hospitalizations per year and 642 mean hospitalizations among persons ages 40–59 years ($p < 0.01$).

Conclusion: Significant reductions in influenza-associated mortality and hospitalization rates were seen following vaccine introduction, especially among the elderly. Reductions among those ages 40–59 years may be due to indirect effects and/or may be related to overall improvements to the health system following the implementation of the Unified Health System.

<http://dx.doi.org/10.1016/j.ijid.2014.03.644>

Type: Poster Presentation

Final Abstract Number: 41.005

Session: *Epidemiology and Public Health I*

Date: Thursday, April 3, 2014

Time: 12:45–14:15

Room: Ballroom

Age disparate sex among South African young females: National HIV Survey, 2008 - preliminary findings

J. Bezuidenhout^{1,*}, N. Dube², L. Kuonza³, N. Zungu⁴, K. Zuma⁵

¹ South African Field Epidemiology and Laboratory Training Programme; School of Health Systems and Public Health, University of Pretoria, Pretoria, South Africa

² South African Field Epidemiology and Laboratory Training Programme, Johannesburg, South Africa

³ South African Field Epidemiology and Laboratory Training Programme and School of Health Systems and Public Health, University of Pretoria, Johannesburg, South Africa

⁴ Human Sciences Research Council, Pretoria, South Africa

⁵ Human Sciences Research Council, Pretoria, South Africa

Background: In 2012, over six million people were living with HIV in South Africa of whom 14% were females aged 15–24. Young women are at an increased risk of HIV infection through sexual relationships with older men. In this paper we estimate the prevalence of age disparate sex (ADS) among young women in South Africa and factors associated with ADS.

Methods & Materials: A multi-stage stratified random sample of individuals living in households and hostels was conducted in 2008 in South Africa. A detailed questionnaire was used to obtain information from participants and blood specimens were taken to be tested for HIV. Age disparate sex was defined as having a sexual partner who is five years or older. Secondary data analysis was performed using STATA 12.

Results: In total, 10856 households were interviewed in which 20826 individuals agreed to participate and further 64.3% were tested for HIV. Of the respondents interviewed 11.8% ($n = 2465$) were females aged 15–24 years. Fifty-five percent (1368/2465) admitted to ever engaging in sexual intercourse; with 35.5% ($n = 485$) admitting to engaging in ADS. Of those, 58.1% (282/485) engaged in ADS at sexual debut and 76.9% (373/485) engaged in ADS in the past 12 months. The median age difference between partners was 6 years [Inter-quartile range: 5–8]. Factors associated with ADS included being unemployed (OR = 1.3 95%CI: 1.01–1.6), living in a formal urban settlement (OR = 0.8, 95%CI: 0.6–0.95) and

having attended school education (OR = 0.68 95%CI: 0.48–0.98). Those engaging in ADS were less likely to use condoms (OR = 0.58, 95% CI: 0.44–0.76), and were more likely to be HIV infected (OR = 2.06, 95% CI: 1.5–2.8). Females who engaged in ADS at sexual debut were more likely to have engaged in ADS in the past 12 months (OR = 10.09, 95% CI: 7.06–14.54).

Conclusion: A high prevalence of ADS was found among young women in South Africa and the risk of HIV infection is considerably higher among them. Early engagement in ADS was a risk factor for engaging in ADS later in life. Considerably low percentage of women in ADS relationships uses condoms. Efforts should be made to educate young women about risks involved in engaging ADS.

<http://dx.doi.org/10.1016/j.ijid.2014.03.645>

Type: Poster Presentation

Final Abstract Number: 41.006

Session: *Epidemiology and Public Health I*

Date: Thursday, April 3, 2014

Time: 12:45–14:15

Room: Ballroom

Food borne outbreak of salmonellosis at a church gathering, Rwanda, 2012

I. Nzabahimana^{1,*}, T. Mpunga², A. Karenzi³, A. Umubyeyi⁴

¹ RWANDA BIOMEDICAL CENTER, Kigali, Rwanda

² FELTP Resident/National University of Rwanda, Burera, Rwanda

³ FELTP Resident/National University of Rwanda, Kigali, Rwanda

⁴ National University of Rwanda, Kigali, Rwanda

Background: Foodborne illnesses are caused by eating food or drinking beverages contaminated with bacteria, parasites, or viruses. On 27th May, 2012, Kigeme hospital received an increased number of persons complaining of symptoms of gastrointestinal illness. All the cases attended a church annual function and ate food served.

Methods & Materials: We conducted a descriptive study. We interviewed key informants, reviewed medical records and developed a line list. A suspected case was defined as any person who attended the Adventist annual festival on May 26th 2012 from Gasaka sector and presenting with abdominal pain, vomit, diarrhea, fever and nausea. Stool and blood specimens were collected for laboratory testing.

Results: An estimated 200 people attended the church function. The index case was adult female cook who reported to Kigeme Health Centre on 26th May. A total of 129 cases reported illness (attack rate: 65%), 71 (55%) hospitalized and no death. All the cases reported to have attended same church function on May 26 where food prepared the previous day was served cold. The earliest time of onset of illness was 6 pm (26/05/2012) and majority 63.6% of cases reported onset of illness within a 24 hour period. The common clinical symptoms were diarrhea, vomiting and abdominal pain. One stool specimen was positive for *Salmonella typhimurium* for that index case.

Conclusion: An outbreak of salmonellosis foodborne illness occurred at a church festival. Clustering of illness onset within 2 days, high attack rate and a severe clinical picture as manifested by high hospitalization rate indicate that this was severe disease. We recommended regulation of the religious practices that can



predispose the population to disease and sensitization of the communities on prevention of foodborne diseases.

<http://dx.doi.org/10.1016/j.ijid.2014.03.646>

Type: Poster Presentation

Final Abstract Number: 41.007

Session: Epidemiology and Public Health I

Date: Thursday, April 3, 2014

Time: 12:45-14:15

Room: Ballroom

Improving quality through process assessments during mass distribution campaigns of Long Lasting Insecticidal Nets (LLINs) in Nigeria: Studies from four states

G. Aidenagbon^{1,*}, O. Adeusi¹, J. Akilah², A. Umar¹

¹ PMI Malaria Action Program for States, Abuja, Nigeria

² National Malaria Elimination Program, Abuja, Nigeria

Background: Mass distribution campaigns of long lasting insecticidal nets (LLINs) have been adopted by the Nigerian National Malaria Elimination Programme as one of the key strategies to rapidly scale up LLIN ownership and use for malaria prevention.

The success of mass campaigns are measured against certain output targets, which include net slip redemption, LLIN household retention rates and proportion of targeted versus actual population reached with LLINs. Process assessments are useful for providing immediate feedback for the implementation processes, resolving implementation bottlenecks as well as for planning and implementing campaign 'follow up' activities. This study is an attempt to find out the effects of process assessments on mass distribution campaign outputs.

Methods & Materials: The study monitored the outputs from mass distribution campaigns in two states in Nigeria supported by the PMI/MAPS project using a comprehensive package of process assessments and compared these against 2 other states which implemented LLIN distribution activities following the national campaign guidelines. The assessments conducted in the 2 MAPS-supported states involved in-process and end-process assessments as well as LLIN tracking using a customized excel template to capture the status of LLINs spatially and temporally. Key output compared across the study states included, distribution data by distribution points, number of LLINs left undistributed at the end of the distribution period and number of additional nets distributed during the campaign follow-up period.

Results: High net redemption rates were observed with well-implemented process assessments (90% and over) compared to 70%-80% in the 2 non supported states. Other pluses included the reduction of undistributed nets after the campaign and completeness of campaign data reporting.

Conclusion: The result is significant for the planned repeat LLIN campaigns in about 11 states in Nigeria where LLINs have reached their normal end of life (EOL). Well implemented process assessments will help to ensure high distribution rates (with direct effect on population coverage) and thus provide a solid foundation for continuous LLIN distribution during the coverage keep up phase.

<http://dx.doi.org/10.1016/j.ijid.2014.03.647>

Type: Poster Presentation

Final Abstract Number: 41.008

Session: Epidemiology and Public Health I

Date: Thursday, April 3, 2014

Time: 12:45-14:15

Room: Ballroom

Association of *Mycobacterium tuberculosis* genotypes and treatment outcome in pulmonary tuberculosis patients in Tshwane metropolitan area



S.R. Matukane^{1,*}, R. Lekalakala², N. Ismail³, H. Said⁴

¹ University Of Pretoria, Acornhoek, South Africa

² University of Pretoria, Pretoria, South Africa

³ National Institute of Communicable Diseases, Johannesburg, South Africa

⁴ National Institute for Communicable Diseases, Johannesburg, South Africa

Background: Environmental and host factors that contribute to outcomes of treatment in *Mycobacterium tuberculosis* infection are well recognised. However the impact of the *M. tuberculosis* genotypes on treatment outcomes has not been well investigated. We therefore aimed to determine the genetic diversity of *M. tuberculosis* isolates in Tshwane Metropolitan area.

Methods & Materials: Between September and December 2011, 106 *M. tuberculosis* isolates were collected from National Health Laboratory Service (NHLS) Tshwane academic division. All the isolates were subjected to spoligotyping and 24 loci- mycobacterial interspersed repetitive units-variable number of tandem repeats (MIRU-VNTR) typing.

Results: Among 106 *M. tuberculosis* isolates, 73% of the isolates were grouped into 21 previously described shared types by spoligotyping. The Beijing strains (17.0%) were the most frequent detected strains. The other 26.4% isolates were not on the Spol4 data base therefore were designated as orphans. Analysis of the 24 loci-MIRU-VNTR typing and data collection is in progress, therefore result is still pending.

Conclusion: The Beijing genotype was the predominant genotype in the study population followed by LAM 4 and T1. The study is still on-going, and aiming to establish the association of *M. tuberculosis* genotypes with drug resistance, and patient demographics (age and gender) as well as exploring the impact of *M. tuberculosis* genotypes on response to treatment.

<http://dx.doi.org/10.1016/j.ijid.2014.03.648>