

**Type: Poster Presentation**

Final Abstract Number: 53.058

Session: *Epidemiology & Public Health*

Date: Saturday, June 16, 2012

Time: 12:45–14:15

Room: *Poster & Exhibition Area***Incidence and trends of acute hepatitis B in men who have sex with men in Amsterdam (the Netherlands): 1992–2011**G. Van Rijckeversel<sup>1</sup>, G.J.B. Sonder<sup>1</sup>, A. Van den Hoek<sup>1,\*</sup>, J. Whelan<sup>2</sup><sup>1</sup> *Public Health Service Amsterdam (GGD Amsterdam), Amsterdam, Netherlands*<sup>2</sup> *Public Health Service (GGD) Amsterdam, Amsterdam, Netherlands*

**Background:** Since 1998 men who have sex with men (MSM) living in Amsterdam are offered free vaccination against hepatitis B virus (HBV) as part of a risk-group vaccination campaign. Time trends of acute HBV in MSM in Amsterdam (1992–2011) are examined to evaluate the effects.

**Methods:** All acute HBV infections in Amsterdam MSM, notified from 1992 till 2012 were analyzed. Incidence of acute HBV was calculated using the estimated annual number of MSM residing in Amsterdam (10% of the male population aged 15–64 years). Data of the HBV vaccination campaign (1998–2009) were used to estimate the number of immune and susceptible MSM residing in Amsterdam.

**Results:** The 20 year time trend of the overall incidence in the MSM population shows a significant decline (IRR 97.5%; 95%CI 95.3–99.8%,  $p < 0.05$ ), but this disappeared when controlling for age group. The median age at infection increased from 29 years in 1992 to 46 years in 2011 ( $z$  statistic = 6.12  $p < 0.00$ ). As 63% (117/220) of all patients were born between 1961 and 1970, a birth cohort effect is to be expected. An age cohort period analysis is in progress and results will be presented at the conference. Figure 1 shows the HBV incidence in the Amsterdam MSM population. Since 1998 a total of 10,581 MSM participated in the HBV vaccination campaign of whom 20% was anti-HBc positive at first contact, and 58% completed the HBV vaccination schedule. A third of all included MSM was born between 1961 and 1970. In 2011 the number of susceptible MSM living in Amsterdam is at least 20,000 (approximately 70% of all MSM).

**Conclusion:** The observed declining incidence of acute HBV in Amsterdam MSM is not readily explained as an effect of the HBV vaccination campaign, as the number of susceptible MSM in the Amsterdam population remains high. Also several other studies indicate that the sexual risk-behaviour among MSM has increased in the last decennium. Yet it seems likely that the campaign has been successful in reaching a specific high-risk cohort of MSM responsible for most HBV transmission over the past 20 years.

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Room: *Poster & Exhibition Area***Knowledge, attitude and practice on cholera and cholera vaccine among low socio-economic group of people in urban Dhaka, Bangladesh**

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**Background:** The healthcare system of cholera-prone poor country like Bangladesh faces enormous burden due to financial thrashing of cholera victims each year. Community-based research and campaigns are necessary to understand community perceptions and practices regarding cholera and cholera vaccine in order to improve the situation. The present study assesses knowledge, attitude and practice on cholera and cholera vaccine among urban population of low socio-economic groups in Dhaka, Bangladesh.

**Methods:** This cross-sectional study was conducted in an area of high cholera incidence in 15 randomly selected clusters in Dhaka city. Data was collected between December 2010 and February 2011. We employed both household survey and in-depth interviews to collect data.

**Results:** Only 23% respondents could recognize cholera as watery diarrhea and 16% ever heard about cholera vaccine. Limited sessions of community health education in most study area were contributed to this poor knowledge. Over all, 54% percent of

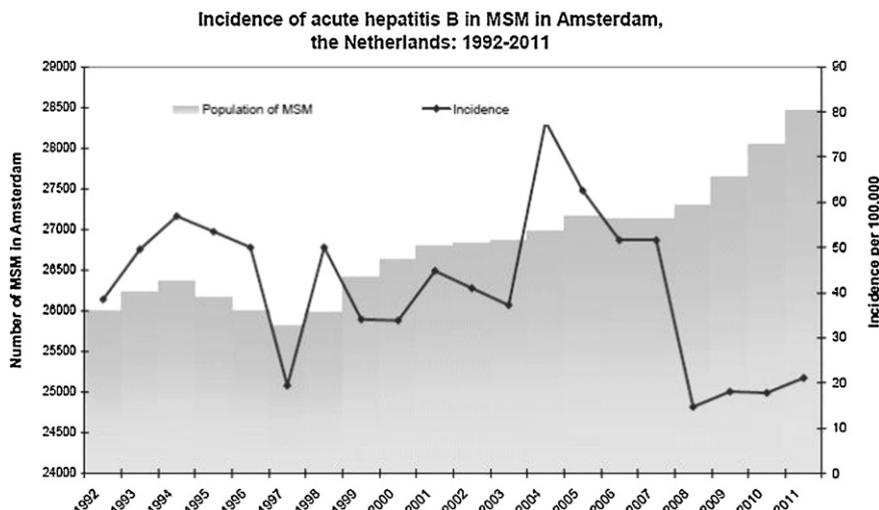


Figure 1. Incidence acute HBV Amsterdam MSM.

the respondents had poor knowledge about cholera-related issues like definition, causes, prevention and management while 97% had positive attitude towards prevention of cholera and cholera vaccine. One third of the respondents did not have good practice for prevention of cholera. Lack of adequate supply of water and gas to boil water, unconsciousness, high density of population and living places surrounded by drainage water were identified as reasons for not having good practice.

This study shows significant association between respondents' knowledge and sex, education, occupation, monthly household expenditure, attitude and practice ( $p < 0.05$ ). In the adjusted model, female were 74% less likely to have poor knowledge than male (Odds Ratio (OR): 0.74; 95% CI: 0.62–0.87). Compared to respondent's high monthly household expenditure ( $> 128$ US\$), the significant odds (OR: 1.31; 95% CI: 1.09–1.58) was found with the respondents who had monthly lowest household expenditure ( $\leq 93$ US\$) that they were more likely to have poor knowledge.

**Conclusion:** This study recommended to strengthen health education activities to improve knowledge of low socio-economic group of people on cholera and cholera vaccine and emphasized the importance of mass cholera vaccination to prevent and control cholera.

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#### A forecasting system for dengue fever in Nakhon Si Thammarat, Thailand

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**Background:** Monitoring and predicting dengue incidence can facilitate early warning and disease control and prevention. Weather variables are potential predictors of dengue incidence. This study explored the impact of weather variability on the transmission of dengue fever in Nakhon Si Thammarat, Thailand.

**Methods:** Data on monthly-notified cases of dengue fever over the period 1981–2011 were collected from the Bureau of Epidemiology, Department of Disease Control, Ministry of Public Health. Weather data over the same period were obtained from the Thai Meteorological Department (TMD). Spearman correlation analysis and time-series adjusted Poisson regression analysis were performed to quantify the relationship between weather and the number of dengue cases.

**Results:** The incidence rate was first-order autoregressive indicating that the dengue incidence rate in the current month was related to the incidence rate occurring in the previous month ( $\beta = 0.848$ ,  $P < 0.001$ ). Maximum and minimum temperature at a lag of zero month had a positive effect on dengue incidence (maximum temperature:  $\beta = 0.104$ ,  $P < 0.01$ ; minimum temperature:  $\beta = 0.180$ ,  $P < 0.01$ ). The amount of rainfall at a lag of two months had a positive effect on dengue incidence ( $\beta = 0.0004$ ,  $P < 0.05$ ). The time series Poisson regression model was constructed with the data for the period January 1981–December 2011. The model demonstrated goodness-of-fit with a correlation between observed and predicted number of dengue incidence rate of 72.74%.

**Conclusion:** Maximum and minimum temperature in the current month and the amount of rainfall in the previous two months are significant weather predictors of dengue incidence in Nakhon Si Thammarat. This model could be used to optimize dengue prevention by predicting trends in dengue incidence. Accurate predictions for even a few months ahead provide an invaluable opportunity to mount a vector control intervention or to prepare for hospital demand in the community.

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#### Measles outbreak investigation - Keffa zone, SNNP regional state, Ethiopia, January 2012

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**Background:** Measles is a major contributor to child-mortality worldwide and kills approximately 1–3 of every 1000 infected individuals, even in developed countries. Measles is a leading cause of vaccine-preventable deaths among young children. Kaffa zone has been reporting suspected measles cases since 12-Oct-2011. The investigation was conducted to identify the etiologic agent, magnitude of the outbreak and to undertake prevention and control interventions.

**Methods:** Patient observation was made at health centers and active cases were searched house to house. Registration books were assessed and suspected-measles cases were identified from 12-Oct-2011 to 17-Jan-2012 in Keffa zone. Cases were defined as: maculopapular rash with fever  $\geq 38.5$  °C with coryza, conjunctivitis or cough. Suspected-measles cases were epidemiologically linked by contact with laboratory confirmed outbreak in neighboring districts. Immunization coverage and vaccine cold chain were assessed. Specimens were collected and tested at national measles laboratory. Descriptive analysis was conducted using Epi-Info version 3.5.3 and arc geographic information system.

**Results:** A total of 2866 suspected-measles cases (Attack Rate (AR): 1.0%) with 7 deaths (Case Fatality Rate (CFR): 0.2%) were identified. The AR was 1.6% in Gesha, 1.5% in Sailem, 1.0% in Gewata, 0.6% in Bita, 0.5% in Adiyo and 0.2% in Chena districts of Keffa zone. Males and females were almost equally affected (AR: 0.2% vs. 0.3%). The AR was 2.9% among  $< 5$  years of age and decreasing to 1.6% among 5–14, 0.2% among 15–44 and 0.01% among  $\geq 45$  years of age. All deaths and 2167 (75.6%) of the cases were not vaccinated against measles. The average vaccination coverage was 61%. Inspection of refrigerators used for vaccine storage identified 2/5 (40%) that were not functional due to poor maintenance. Eight specimens were collected and 6 of them were tested positive for measles IgM.

**Conclusion:** An outbreak of measles occurred in Keffa zone affecting primarily those  $< 5$  years of age. Low vaccination coverage and non-functional cold storage likely contributed to the outbreak. Non-selective mass vaccination campaign should be given for children from six months to 14 years old. Enhancing routine vaccination coverage and improvement in cold chain operation and maintenance need to be emphasized in the zone to reduce measles incidence.

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