IS IT TIME FOR IRELAND TO CONSIDER VARICELLA VACCINATION TO THE NATIONAL IMMUNIZATION PROGRAMME?

Roy K Philip*, 1 Tina Dooley, 2 Janice Murtagh, 3 Suzanne Cotter, 1 Graduate entry Medical School, University of Limerick, Limerick, Ireland; 2 University Hospital Limerick, Limerick, Ireland; 3 Vaccines division, MSD Ireland Ltd., Dublin, Ireland; 4 Health Protection Surveillance Centre (HPSC), Dublin, Ireland

Abstracts

Background Varicella (chickenpox) is generally considered a mild illness; however the resultant disease burden is substantial. Uptake of the live-attenuated vaccine to National immunization programmes is variable among European countries. Varicella could pose serious illness and mortality among vulnerable populations such as immunocompromised and those with significant co-morbidities. Varicella vaccine is commercially available in Ireland, however not funded for universal immunization. Since 2012 hospital admissions with varicella is notifiable in Ireland.

Aims To analyse the reporting of hospitalised cases of varicella in Ireland from 2012 to 2018 for 0 to 19 years of age and to propose the potential benefits of inclusion varicella immunization to the National programme.

Methods Surveillance data submitted to health protection surveillance centre (HPSC) from January 2012 to December 2018 from hospitals around all the HSE regions of the country was analysed. Annualised rates for age categories of 0–4 years, 5–9 years, 10–14 years and 15–19 years were determined. Cross verification with hospital inpatient enquiry (HIPE) data was conducted; bed days consumed and length of stay (LOS) were estimated. Results were compared with previously published UK/Irish rates. Mortality was not analysed as part of the study. Approval for analysis of collated data from HPSC and HIPE was obtained.

Results There were 444 hospitalisations for the 0 to 19 years (mean of 63.4 admissions/year). 320/44 (72%) were in 0–4 years and 94/444 (21%) among 5–9 years, together contributing to 93% of hospitalisations. With a mean LOS of 2.86 days the varicella admissions contributed to 1269.8 bed days (inclusive of general wards, paediatric high dependency unit and paediatric intensive care unit bed utilisation) based on HIPE estimates. An increasing trend of hospitalisation was observed year-on-year for 0–4 and 5–9 years. HPSC reporting was comparable to, however lower than, the active British paediatric surveillance unit (BPSU) study published in 2007 (including Irish data). Our sentinel rate estimate of 133.1/100,000 population (range 98.8 -224.7) reflects community burden of varicella.

Conclusions Improving and standardising the varicella surveillance, highlighting the preventable acute hospital bed days due to serious illness from varicella, analysing the disease specific mortality, accurately estimating the disease burden in community including the societal costs and predicting the future implications to rate of herpes zoster among adults and the elderly; all should be factored-in to make a case for the inclusion of varicella to the National immunization programme in Ireland.
Whilst several variations in scheduling exist no superiority was demonstrated with any one approach.

The results of this review do not indicate the benefit of a change in the scheduling or vaccine component of pertussis vaccines currently used in the Irish childhood vaccination programme.

**Abstracts**

**P366** THE INTEREST OF ANTI HEPATITIS B VACCINATION AT BIRTH

Yakoubou Annatou*, Tchiakpé Nicole. Faculté des Sciences de la Santé; Université D’abomey Calavi, Cotonou, Benin

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In Benin, anti hepatitis B vaccination begins at six weeks of age under the EPI, while WHO recommends a dose at birth to prevent perinatal transmission, which is responsible for the onset of chronic infections.

**Objective** To compare vaccine seroconversion against hepatitis B between 9-month-old children who had received or not a dose of anti hepatitis B vaccine at birth in two health units at Cotonou.

**Methods** This was a cross-sectional study. We included 9-month-old children and their mothers receiving vaccination at CHU-MEL (where vaccination at birth was automatically offered) and the primary health care of Cotonou 1 (where only the EPI was offered). The study occurred from April to June 2017. The socio-demographic and immunization data (immunization status, anti HBS, HBS Ag) were studied. They had been processed and analysed with Excel 10 and SPSS 21 software. Pearson’s student and correlation tests were used for comparisons and the significance threshold was 5%.

**Results** A total of 128 mother-child couples were recruited; Half of the children were vaccinated according to the 4-dose regimen and the other, according to the 3-dose regimen. The incidence of hepatitis B was 9.38% for mothers (n = 12) and 1.62% for children (n = 2). The average antibody title was 617 IU/L in children at 4 doses versus 395 IU/L in 3-dose patients. This difference was statistically significant (p = 0.023).

**Conclusion** The 4-dose vaccine regimen, one at birth, provides a better immune response. The inclusion of vaccination against hepatitis B at birth in the EPI is indispensable.

**P367** TO SWITCH OR NOT TO SWITCH: THE BENEFIT OF QUADRIVALENT INFLUENZA VACCINE TO THE IRISH PAEDIATRIC POPULATION

Julie Amott*, Annalisa Quattrocchi, Lisa Domingan, Meadhbh Hunt, Paula Flanagan, Joan O Donnell. HSE Health Protection Surveillance Centre, Dublin, Ireland

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**Background** Until recently, trivalent influenza vaccines (TIV) have contained one influenza B virus, recommended annually by the WHO vaccine selection committee. Quadrivalent Influenza Vaccines (QIV) add protection against a second B lineage; preventing the threat of a vaccine mismatched season, which often occurs in the Northern Hemisphere, leading to reduced vaccine effectiveness (VE) and increased influenza morbidity and mortality. Young children have one of the highest clinical burdens in Ireland, with the highest age-specific rate for influenza cases admitted to critical care units generally in children aged 0–4 years. Additionally, school-aged children are a major source of community transmission.

**Aim** To assess the benefit of a QIV in the Irish paediatric population.

**Methods** A literature review was conducted comparing QIV to TIV, focusing on VE and cost-effectiveness (CE). The VE of live-attenuated influenza vaccine (LAIV) compared to inactivated influenza vaccine (IIV) in children was also studied. The Cochrane database of systematic reviews, the Cochrane Central Register of Controlled Trials, PubMed, the Lancet, and publications from the European projects I-MOVE/I-MOVE+ and VENICE were searched for publications between 2009–2018.

**Results** Recent influenza seasons suggest a higher VE of QIV compared to TIV. Studies have shown that QIV is as effective as TIV for the strains included in both; however QIV has superior immunogenicity for the additional B strain when there is a mismatch season. These results are also reflected in pre-licensing studies of the immunogenicity of QIVs that are now approved.

LAIV has been recommended due to higher VE against influenza B strains and the ease and acceptability of the intranasal vaccination compared to the injectable IIV.

QIV are more expensive than TIV, however CE analyses indicate that QIV delivers substantial savings in terms of preventing direct healthcare costs through reductions in infection numbers, hospitalisations and deaths; resulting in quality-adjusted life years gained. There are also substantial societal benefits through indirect savings in productivity (preventing employee/caregiver absences). Rolling out QIV to children was the most cost-effective vaccination strategy in the UK (aged 2–11 years) and in European countries (4–16 years) partaking in the I-MOVE+ project, with the exception of Portugal.

**Conclusion** QIV would stabilise the VE across influenza seasons; eliminating the uncertainty of predicting the influenza B lineage, ultimately increasing public confidence in the vaccine, resulting in increased vaccine uptake. Broader protection in the paediatric population would directly reduce influenza transmission and indirectly protect vulnerable populations in the community.

**P368** FREQUENCY OF DIARRHEA AND PNEUMONIA IN VACCINATED AND UNVACCINATED CHILDREN UNDER 5 YEARS OF AGE: A SINGLE CENTER STUDY

1Shireen Qassim Bham*, 2Farhan Saeed, 3Muhammad Athar Khan, 4Rashid Naseem Khan, 4Fatima Siraj, 5Syeda Sara Afsar, 4Tayyab Mehmood. 1Department of Pediatrics; 2Department of Community Medicine; 3Department of Pediatrics; 4Medical Students

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**Background** Pneumonia and diarrhea remain the leading infectious causes of mortality and morbidity in children under 5 years of age.1 According to the study carried out by WHO in 2017 the coverage of rotavirus is 23% while that of pneumococcal vaccine is 43% which accounts for serious health issues in children.2 An estimated 1 in 40 infants experience a severe episode of rotavirus gastroenteritis annually in Pakistan.3

**Objective** The objective of this study was to determine the frequency of diarrhea and pneumonia in vaccinated and unvaccinated children less than 5 years of age: A single center study...