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O1015 Impact of the new childhood influenza vaccine programme on antibiotic prescription rates in primary care in England

Berit Muller-Pebody*[1], Mary Sinnathamby[1], Fiona Warburton[1], Graeme Rooney[1], Nick Andrews[1], Katherine Henderson[1], Rachel Freeman[1], Camille Tsang[1], Susan Hopkins[1], Richard Pebody[1]

[1] Public Health England, National Infection Service, London, United Kingdom

Background: Vaccines are included in the global strategy to tackle antimicrobial resistance (AMR) since prevention of infections should reduce antibiotic use and thus bacterial selection pressure. The UK commenced rollout of a universal childhood live attenuated influenza vaccine (LAIV) programme in 2013/14 which included pilot areas where primary school age children were offered LAIV. We investigated the impact of the LAIV programme on community antibiotic prescribing rates.

Materials/methods: General practice (GP) level antibiotic prescriptions for respiratory (RTI) and urinary tract infections (UTI) (=controls) and GP level LAIV uptake data for England for 2010 to 2016 were analysed. A random effect Poisson regression model was used to estimate incidence rate ratios (IRR) for population level changes in GP practice level antibiotic prescribing for RTI and UTI by age group (children <=10 years/adults) and by LAIV pilot and non-pilot areas. Associations between influenza vaccine uptake in pre-school age children and GP antibiotic prescribing in children <=10 years old were estimated using adjusted multivariable random effects Poisson regression models.

Results: Yearly IRRs for RTI prescribing for children reduced from 1.4 in 2010/13 to 1.1 in 2015/16 in LAIV pilot areas and from 1.3 in 2010/13 to 1.0 in 2015/16 in non-pilot areas. In adults IRRs for RTI prescribing reduced from 1.3 in 2010/13 to 1.1 in 2015/16 in LAIV pilot areas and from 1.2 in 2010/13 to 1.0 in 2015/16 in non-pilot areas. IRRs for UTI prescribing were also similar for children and adults. There was a significant 2.7% reduction in annual GP antibiotic prescriptions for RTI in children for every 10% change in influenza vaccine uptake in pre-school age children.

Conclusions: We found no evidence that influenza vaccination of primary school age children resulted in a reduction in community RTI antibiotic prescribing, though a small, but significant association between RTI antibiotic prescribing and vaccination of pre-school age children was seen. The temporal association of a reduction in RTI and UTI antibiotic prescribing in LAIV pilot and non-pilot areas after 2013 coincided with the launch of the UK Government's AMR Strategy. This highlights the importance of a multifaceted approach to tackle AMR.