be more beneficial. Further research is required to confirm predictions, and to improve the precision of key estimates. The cost-effectiveness of screening should be re-evaluated using these estimates.

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O15.6 IMPACT OF THE LNG-IUS ON CERVICAL PERSISTENCE OF *CHLAMYDIA TRACHOMATIS* AND VAGINAL MICROBIOTA IN A BABOON MODEL

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Introduction Alterations in vaginal microbiota associated with intrauterine contraception may impact host susceptibility to sexually transmitted infection. We evaluated the effect of the levonorgestrel intrauterine system (LNG-IUS) on cervical persistence of *Chlamydia trachomatis* (CT) in a baboon model and whether CT persistence was correlated with vaginal microbial community structure.

Methods 20 wild caught female olive baboons (*Papio abubis*) were randomly assigned to receive either LNG-IUS and CT inoculation (n = 8), LNG-IUS and sham inoculum (n = 2), CT inoculation alone (n = 8), or sham inoculation (n = 2). Animals were acclimated to the LNG-IUS for 24 weeks after which animals were cervically inoculated once weekly for 5 weeks. Vaginal swabs were collected weekly for microbiome analysis by 16S rRNA-encoding gene sequence analysis. Presence of CT in the cervical epithelium was confirmed with weekly nucleic acid amplification testing (NAAT) and culture.

Results Use of the LNG-IUS was significantly associated with positive CT culture (p = 0.04) but not NAAT (p = 0.07). Median time to cervical clearance of CT as detected by NAAT was 12.5 days (range 5–16) for LNG-IUS animals in comparison to 7 days (range 3–10) for non-implanted animals (p = 0.14). Similarly, median time to cervical clearance of CT by culture was 12 days (range 5–15) for LNG-IUS animals and 5 days (range 1–10) for non-implanted animals (p = 0.05). We did not detect significant within group differences between vaginal microbial community structure at baseline and following LNG-IUS insertion, CT inoculation, or LNG-IUS and CT in combination.

Conclusions Use of the LNG-IUS was associated with a trend towards cervical persistence of CT in a baboon model. However, this persistence is not explained by alterations in vaginal microbial communities.

Disclosure of interest statement The authors have no disclosures to report.

O16 - HPV vaccination: hits and misses

O16.1 THE RAPID AND NEAR ELIMINATION OF HUMAN PAPILLOMAVIRUS (HPV) TYPE 6, 11, 16 AND 18 AMONG YOUNG HIGH-RISK WOMEN WITHIN THREE YEARS OF THE NATIONAL HPV VACCINATION PROGRAMME IN AUSTRALIA: FINDINGS FROM A 10-YEAR CROSS-SECTIONAL STUDY

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Introduction The national quadrivalent human papillomavirus (HPV) vaccination programme was launched in Australia in April 2007. The aim of this study was to explore the proportion of vaccine targeted HPV genotypes contained in the quadrivalent (4vHPV) and the nine-valent (9vHPV) vaccines detected among young women diagnosed with *Chlamydia trachomatis*.

Methods Women ≤25 years attending Melbourne Sexual Health Centre from 1-July-2004 to 30-June-2014 and diagnosed with chlamydia were included in the analysis. Detection of HPV genotypes was performed on stored cervical or high vaginal samples. The proportions of women who had 4vHPV types (6/11/16/18) and the other five types within the 9vHPV grouping (31/33/45/52/58 alone) excluding 4vHPV types were calculated for each Australian financial year and stratified by age and vaccine eligibility. The proportions of HPV types among unvaccinated women in the post-vaccination period were also calculated to assess herd protection.

Results A total of 1,202 women were included in this study. The proportion of samples with 4vHPV types dramatically decreased among Australian-born ≤25 year old females over the 10 year period (6/11 decreased from 16% to 2% [p_{trend} <0.001]; 16/18 decreased from 30% to 4% [p_{trend} <0.001]). In women ≤21 years old, HPV 6/11 remained at zero and HPV16/18 were detected in <5% of samples for all years after 2008/2009. A significant decline in 4vHPV types in unvaccinated Australian-born women was also observed, from 41.3% to 18.5% in the pre- and post-vaccination eligible periods respectively ($p = 0.031$), but no decline was seen in the other five types within the 9vHPV grouping (22.5% vs. 25.9%; $p = 0.805$).

Conclusion Coverage achieved using the 3-dose vaccine was sufficient to largely eradicate 4vHPV types in Australian born women ≤21 years old, within three years of the introduction of the national HPV vaccination program. A strong herd protection was observed among women, with a significant decline in the proportion of 4vHPV in unvaccinated women.

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Pasteur; in addition, she has received funding through her institution to conduct HPV vaccine studies for Merck Sharp and Dohme and GlaxoSmithKline. SMG is a member of the Merck Global Advisory Board and the Merck Scientific Advisory Committee for HPV. MYC has been an investigator on investigator initiated research grants from Merck Sharp and Dohme. MGL receives unrestricted grants from Boehringer Ingelhiem, Gilead Sciences, Merck Sharp and Dohme, Bristol-Myers Squibb, Janssen-Cilag, ViiV HealthCare. All other authors have no conflicts of interest.

O16.2 EVIDENCE, POLITICS AND CULTURES IN POLICYMAKING: POLICY ANALYSIS OF HPV VACCINE INTRODUCTION IN INDIA

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Introduction Despite India having the highest burden of cervical cancer globally, the HPV vaccine is not part of the routine immunisation programme. The decision process on HPV vaccine was put-off in 2010 shortly after a high profile vaccine demonstration trial was suspended when five girls died. Although the evidence that the deaths were linked to the vaccine is highly contested, nonetheless a political decision on HPV vaccine introduction differed. The purpose of the current study is to explore the political, socio-economic and cultural factors influencing the HPV policy decision in India. Evidence from the study may have implications for future vaccines targeting STIs in contested policy environments.

Methods We used qualitative methods for policy analysis based on primary data collection supplemented with in-depth documentary review. Semi-structured interviews were conducted with 46 participants including policy makers, health system actors and community based organisations at State and National level. We used the Gilson and Walt Health policy triangle framework to analyse the data.

Results Interim results have highlighted a number of features of the policy process in India, which may have influenced vaccine policy decision-making. These include: lack of adequate policy space for transparent discussion of concerns; strong suspicion of conflict of interest among researchers and international donors; mistrust of Government officials by civil society members; Government concerns around sustainable funding options; and a dearth of Government initiatives to promote culturally sensitive sexual health issues.

Conclusion The [non]-introduction of the HPV vaccine into the Indian policy landscape was influenced by a variety of factors including contested empirical evidence of safety and perceptions of institutional (particularly commercial) interests outweighing public health evidence. This study provides important lessons not only for the future introduction of HPV vaccine in India, but also for any other vaccines targeting STIs.

Disclosure of interest statement The study is funded by Wellcome Trust and the Public Health Foundation of India. No pharmaceutical grants were received for this research study.

O16.3 HPV VACCINE INTRODUCTION IN THAILAND

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Introduction Cervical cancer is the second most common cancer in Thai women. Since HPV vaccination would be a complementary measure to the current cervical screening program, the Advisory Committee on Immunisation Practices in Thailand recommended HPV vaccination to school age girls. This study is the first report of school-based HPV vaccine introduction in Thailand which aimed to assess feasibility of including HPV vaccine into the national immunisation program.

Methods Two doses of bivalent HPV vaccine were given to 5th grade girls in Phra Nakhon Si Ayutthaya province at 0 and 6 months. To assess HPV vaccine acceptability, we interviewed public health staffs in 114 immunisation clinics, teachers in 93 primary schools and reviewed 1,736 parent consent forms. We surveyed 1,736 school girls to assess HPV vaccine coverage and established the Adverse Event Following Immunisation (AEFIs) Surveillance for HPV vaccine to monitor any AEFIs related to HPV vaccination. Cervical screening records were also explored to determine the effect of HPV program on the existing cervical screening program.

Results HPV vaccine acceptability among public health staffs, teachers and parents was 97.8%, 95.7% and 91.2%, respectively. The HPV vaccine coverage was 91.0% and 87.4% for the first and the second dose. There was no severe AEFIs reported, but most common AEFIs were "pain at injection site" (18.3%–22.0%), "fever" (2.1–2.6%), and "swelling and redness" (2.1%–2.5%). There was no evidence that declining number of cervical screening was due to HPV program and 91.7% of public health staffs thought HPV vaccination did not interfere cervical screening program performance.

Conclusion HPV vaccine introduction is well accepted and well integrated into the immunisation program. The vaccine is well tolerated and there is no evidence that the vaccination program had negative impact on the current cervical screening scheme.

Disclosure of interest statement This study was supported by the Department of Disease Control, Ministry of Public Health of Thailand. No pharmaceutical grants were received in the development of this study.

O16.4 THE ESTIMATED IMPACT AND COST-EFFECTIVENESS OF NONAVALENT HPV VACCINATION IN THE UNITED STATES

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Introduction The objective of this study was to assess the health impact and cost-effectiveness of human papillomavirus (HPV) vaccination strategies in the United States. Specifically, we examined the incremental costs and benefits of the 9-valent HPV vaccine (9vHPV) compared to the quadrivalent HPV vaccine (4vHPV). Like 4vHPV, 9vHPV protects against HPV types 6, 11, 16, and 18. 9vHPV also protects against 5 additional HPV types 31, 33, 45, 52, and 58.