LB1.3 THE IMPACT OF HPV VACCINATION ON GENITAL WARTS IN ABORIGINAL AUSTRALIANS: ANALYSIS OF NATIONAL DATA

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Introduction Australia funded a national human papillomavirus (HPV) program for girls and young women (12–26 years) from 2007 and for young boys (12–15 years) from 2013. We evaluated the impact of the program in Aboriginal and Torres Strait Islander (Aboriginal) people who suffer disproportionately from HPV-related cancers.

Methods Routinely collected clinical data from 19 sexual health services in four jurisdictions were included. We calculated the proportion of Aboriginal attendees diagnosed with genital warts at first visit, before and after the start of the program, and compared this with non-Indigenous attendees. We calculated percentage change between time periods along with 95% confidence intervals (CI). Final, clean and corrected datasets were received from the participating services in second quarter of 2015; after which the datasets were cleaned and data errors corrected in collaboration with the clinics before data could be analysed in July.

Results From 2004–2014, 215,599 Australian born attendees were seen; of whom 7.2% identified as Aboriginal. The proportion of Aboriginal women aged <21 years diagnosed with warts decreased by 96.1% (95% CI: 70.8%–99.5%) in the vaccination period, from 7.8% in 2007 to 0.3% in 2014, comparable to the 90.8% (95% CI: 85.5%–94.1%) decline in non-Indigenous women of the same age. The proportion of Aboriginal women aged 21–30 years diagnosed with warts decreased by 75.0% (95% CI: 24.4%–91.9%), from 6.0% to 1.5%; comparable to the 75.4% (95% CI: 68.9%–80.7%) decline in non-Indigenous women. The proportion of Aboriginal heterosexual men aged <21 years diagnosed with warts decreased from 7.3% in 2007 to no diagnosis in 2014 and among Aboriginal heterosexual men aged 21–30 years wart diagnoses decreased by 75.8% (95% CI: 33.6%–91.3%), comparable to the decreases in <21 year old (88.7%; 95% CI: 79.5%–93.8%) and 21–30 year old (68.8%; 95% CI: 63.4%–73.5%) non-Indigenous men.

Conclusions Using genital warts as a proxy measure of the impact of the HPV vaccination program, Aboriginal and non-Indigenous Australians appear to have benefited equally.

LB1.4 STI RATES AMONG GAY MEN TAKING DAILY ANTIRETROVIRALS FOR PRE-EXPOSURE PROPHYLAXIS OF HIV: THE NSW DEMONSTRATION PROJECT PRELUDE

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Introduction Pre-exposure prophylaxis (PrEP) prevents HIV infections but not other STIs. We assessed prevalence and incidence of STIs among PrEP users in the NSW demonstration study, PRELUDE.

Methods By 14 July 2015, 268 gay and homosexually-identified men (GHM) were enrolled and started taking PrEP; 98 (36.6%) and 27 (10.1%) had reached three and six-month follow-up respectively. STI testing was conducted at baseline and quarterly follow-up visits. We calculated the baseline prevalence and incidence of STIs. The sample STI incidence will be compared with the population incidence in NSW.

Results At enrolment, 17.2% of participants were diagnosed with ≥1 STI, including 10.8% with rectal gonorrhoea, rectal chlamydia and/or syphilis. The latter three STIs were diagnosed in 2.6%, 7.8%, and 1.1% of men, respectively. Among 98 men at 3-month follow-up, 17.3% were diagnosed with any of these STIs (3.1% had rectal gonorrhoea, 11.2% rectal chlamydia and 4.1% syphilis). At three months of follow-up, the incidence of these STIs was 18.4, 67.4 and 24.5 per 100 person-years (PY), respectively. By 14 July 2015, 27 PrEP users reached six months of follow-up. In this group, the incidence of rectal gonorrhoea was 29.6 per 100 PY (11.2% increase from month three follow-up, $p < 0.04$). No HIV infections were observed in the cohort.

Conclusion Among PrEP users in PRELUDE, the baseline prevalence and incidence of STIs were high and remained high in the early follow-up (indeed, the incidence of gonorrhoea has increased). Despite enrolment in a clinical study, with frequent follow-up, STI testing and treatment, PrEP users remain at very high risk of STIs. Longer follow-up is necessary to assess whether STI trends among PrEP users will change. The investigation of prophylaxis against other STIs and other methods of testing and treating STIs among these high-risk men appears to be warranted.

Disclosure of interest statement The PRELUDE study is funded by the NSW Ministry of Health, with Gilead Sciences providing the study medication (Truvada).

LB1.5 INITIAL INTERACTIONS OF HERPES SIMPLEX VIRUS WITH HUMAN SKIN DENDRITIC CELLS

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Introduction The mechanism by which immunity to herpes simplex virus (HSV) is initiated is not completely defined. HSV initially infects the stratified squamous epithelium of the anogenital mucosa prior to entering nerve endings. We have recently reported that topical application of HSV-1 to human foreskin explants results in infection of epidermal Langerhans cells (LCs) which then emigrate into the dermis where they expressed the maturation marker CD80 and formed large cell clusters with BDCA3+ subsets of DC-SIGN+ and dermal dendritic cells (DCs) and. HSV-expressing LC fragments were observed inside the dermal DCs/macrophages. No other infected epidermal cells interacted with the dermal DCs (Kim *et al*. Plos Pathogens, 2015).

Methods Therefore, we isolated LCs and dermal DCs from large abdominal skin specimens by collagenase digestion and flow

sorting. LCs were pulsed with fluorescent tagged HSV and co-cultured with a subset of (BDCA3+) dermal DCs.
Results All infected LCs showed markers of apoptosis at 18 hr p.i. Approximately 50% of BDCA3+ DCs co-localised with infected LCs and in some cases fragments of infected LCs were observed within the dermal DC cytoplasm. Such colocalizaton of HSV antigen bearing LCs and dermal DC subsets, was also detected within biopsies of initial genital herpes lesions. The mechanism of interaction of apoptotic LCs and dermal DCs, and uptake by phagocytosis are being determined.
Conclusion Thus, a viral antigen relay takes place where HSV infected LCs slowly die by apoptosis during migration to the dermis and are taken up by dermal DCs by phagocytosis for subsequent antigen presentation. This provides a rationale for targeting these dermal DCs for mucosal or perhaps intradermal HSV immunisation.
Disclosure of interest statement No pharmaceutical grants were received in the development of this study.

LB1.6 DIAGNOSTIC TEST ACCURACY OF THE ALERE PIMA POC CD4 ANALYZER (PIMA^{TM}) IN FIELD SETTINGS: A META-ANALYSIS

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Introduction Point-of-care CD4 testing attracts global interest particularly in resource-constrained settings where it is needed the most. We evaluated the diagnostic performance (DP) of the most commonly used POC CD4 test in field settings, the Pima^{TM}, as compared to flow cytometry at CD4 threshold of 350 cells/μl.
Method A systematic literature search and data extractions were performed electronically. Meta-analysis was conducted applying a bivariate multi-level random-effects modelling approach to provide pooled estimates of sensitivity and specificity, and positive and negative likelihood ratios (±LRs) of the Pima^{TM}. In producing estimates, the model accounts for correlation between test sensitivity and specificity and between-study heterogeneity in test performance.

A covariate extended model was also explored to test for difference in DP between capillary and venous blood. Diagnostic statistics and sensitivity analyses were used to examine impacts of outlier bias. User-written STATA programs, MIDAS and Generalised Latent and Linear Mixed Modelling (GLLAMM) were used to undertake statistical analyses.
Results The search identified 13 studies with data currently available for meta-analysis (6 capillary, 7 venous). Pooled sensitivity and specificity of Pima^{TM} were 0.92 (95% CI: 0.88–0.95) and 0.87 (95% CI: 0.85–0.88) respectively with ±LRs indicating strong DP (+LR: 7.0, 95% CI: 6.1–7.9; -LR: 0.09, 95% CI: 0.06–0.13). The extended model showed some difference in DP by blood sample type (venous vs. capillary): sensitivity (0.94 vs 0.89), specificity (0.86 vs 0.87); however, these differences were jointly marginally non-significant (Wald $c^2(2) = 4.77$, $p = 0.09$).
Conclusion Our study is the first to present pooled data on in-field test performance of the Pima^{TM}. The Pima^{TM} was found to have strong DP in field settings. The difference found in DP by blood sample type, although not statistically significant, may have significant clinical implications which warrant further analysis once more data are available. The recommendation on use of one blood sample type (venous) over the other (capillary) could hinder the scalability of the test.
Disclosure of interest statement Funding for this study was provided by the National Health and Medical Research Council (NHMRC) and Monash University, Australia.

Poster Presentations

P01 - Sexual health of Indigenous and minority ethnic populations

P01.01 DEADLY SEXY HEALTH; SEXUAL HEALTH PROMOTION IN THE VICTORIAN ABORIGINAL COMMUNITY CONTROLLED HEALTH SETTING

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The rate of sexually transmissible infections in the Victorian Aboriginal population remain at higher rates than non-Aboriginal Victorians. Adding to this burden is the lack of a dedicated Aboriginal sexual health workforce. The Victorian Aboriginal Community Controlled Health Organisation (VACCHO) developed the "Deadly Sexy Health Kit" as a capacity building resource for Aboriginal health workers and other Koori workers to deliver blood borne virus, sexuality, sexual and reproductive health education workshops in their local communities.

The Deadly Sexy Health Kit is contains resources that VACCHO and partner organisation have developed around sexuality, sexual health, respectful relationships and blood borne viruses. It comprises of a series of flexible tools to ensure that the workshops are engaging, interactive and on message, including lesson plans, DVDs, activities and discussion points that are culturally relevant.

The development of the kit was in response to Aboriginal Health workers calling for resources and skills in sexual health and blood borne viruses for community health days, youth camps, women's and men's health activities. The Deadly Sexy Health Kit development was an opportunity for Aboriginal workers to be the local faces of Sexual health activities.

The success of the Deadly Sexy Health Kit is specific training to maximise the tools in the kit. Five training sessions were held across Victoria for ACCHO workers that included an introduction to the purpose and effective use of the DVDs, activity cards and develop facilitation skills. Regional workers were trained together so they can support each other and target strong local referral and support pathways for community members.

Evaluation will occur six months after implementation. It is anticipated that this kit will move towards a locally based Sexual health education model that strengthens capacity of Aboriginal Community Controlled Health Services and their Communities.
Disclosure of interest statement Nil.