

intensive support to fully establish. FSW engaged in self-help groups and supported each other by arranging child care, encouraging each other to go to get clinical care, establish savings and lending schemes and in some cases to return to educational or vocational training.

**Conclusion** Sex workers were empowered and able to make better life decisions. Priorities for the groups changed over time and as trust increased. Self-help-groups can become autonomous of programme support over time. Microplanning allowed us to regularly reach women not previously engaged in the programme. We plan to test the cost effectiveness of this intervention in a cluster randomised trial.

**Disclosure** No significant relationships.

#### S05.4 #SAVESEXY: A GAMIFIED APPROACH TO HARNESSING THE POWER OF COMMUNITY ACTIVISM FOR HIV TESTING PROMOTION

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10.1136/sextrans-2019-sti.35

As a response to the rising trend of new HIV infections among men who have sex with men (MSM), a group of volunteers in Manila, Philippines, formed a nonprofit organization called The Red Whistle (TRW). MSM in the Philippines suffer not just from HIV-related stigma but also from gender-based discrimination. In order to circumvent this environment, TRW devised '#SaveSexy' a gamified approach to HIV awareness communication and HIV testing promotion that is not explicitly targeted to MSM but used visual imagery and messaging that would attract an MSM crowd. Using well-designed merchandise and branding, celebrity volunteers, and themed activities, '#SaveSexy' encouraged its target audience to rethink the concept of 'sexy' as being confidently aware of their sexual health. The campaign takes its cue from market research done by TRW and partner ad agencies on what works for its target audience and applies this research to sexual health promotion. In this format, TRW partners with local government units and community-based organizations to organize 'races' where three teams of volunteers compete to encourage the most number of individuals to get tested in a single day. Elements of the strategy include teaming up with a celebrity volunteer and using social media to boost the reach and engagement of the information drive online. It also includes partnering with the local government's health office who will provide volunteers and materials for HIV testing. Aside from being well received, the intervention is also cost-effective. Designed to cost at around Php 250,000 (USD 5,000) per event targeting 350 individuals tested, the average cost per is Php 715 (USD 14) per individual tested. In February 2019, it reached the most number of individuals tested in one day at 1,006, also for the lowest amount invested at Php 170,000 or USD 3,400. Average cost per individual tested was Php 169 (USD 3.38).

**Disclosure** No significant relationships.

## S06 – IMPROVED MODELS AND TOOLS FOR STI INFECTIONS

Monday, July 15, 2019 4:15 PM – 5:45 PM

### S06.1 USE OF CERVICAL EXPLANTS TO STUDY GONOCOCCAL PATHOGENESIS

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10.1136/sextrans-2019-sti.36

Gonococcal infections remain a challenging public health issue due, in part, to a lack of a vaccine. A major obstacle in vaccine development and for understanding gonococcal infections in women is the lack of tractable models mimicking *in vivo* infection in the female reproductive tract. We used human tissue-explants and isogenic gonococci (GC) to examine by quantitative imaging analysis the impact of the heterogeneity of cervical and bacterial surfaces on infection. We found that GC preferentially colonize the ectocervix and squamocolumnar junction (transformation-zone, TZ) but only penetrate into TZ and endocervical epithelia. Colonization of any region required the expression of pili. GC expressing Opacity-associated proteins (Opas) that bind the host carcinoembryonic antigen-related cell adhesion molecule (CEACAMs) (Opa<sub>CEA</sub>) increase ecto/endocervical colonization and reduce endocervical penetration. GC expressing Opas that bind heparan sulfate proteoglycans (HSPGs) (Opa<sub>HSPG</sub>) did not promote colonization or tissue penetration in any region of the cervix. Opa<sub>CEA</sub> inhibited GC-induced disruption of epithelial-epithelial adhesions and epithelial exfoliation, enhancing GC colonization and reducing penetration, through engaging CEACAMs. We propose the following model to explain GC pathogenesis of the female reproductive tract (FRT). GC establish colonization through pili-mediated adhesion. Opa<sub>CEA</sub> expression promotes colonization, leading to asymptomatic local infections. Low expression of Opa<sub>CEA</sub> allows GC to effectively penetrate into the endocervical epithelium, causing symptomatic infection. Because GC with low levels of Opa<sub>CEA</sub> expression are rare, as most 11 Opa proteins are Opa<sub>CEA</sub>, this model provides an explanation as to why most infections of the FRT are asymptomatic and why invasive disease is rare.

**Disclosure** No significant relationships.

### S06.2 T. PALLIDUM IN VITRO GROWTH

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10.1136/sextrans-2019-sti.37

For over a century, investigation of *Treponema pallidum* subsp. *pallidum*, the spiral-shaped bacterium that causes syphilis, was hindered by an inability to culture the organism in vitro. Recently, we reported long-term cultivation of this enigmatic