can be indistinguishable, and correct identification of the etiology is essential for patient management. PCR is the gold standard for identification of herpes viruses, and PCR can also be used for direct detection of TP from genital lesions. Given the recent global resurgence of syphilis, early diagnosis using PCR is an important tool to supplement serology-based diagnosis of syphilis.

**Methods** The PlexPCR® VHS assay (SpeeDx) has been developed to detect and differentiate HSV-1, HSV-2, VZV and TP 211 samples (157 positive and 54 negative) were collected from Melbourne Sexual Health Centre (Victoria, Australia) from January-April 2018. Samples consisted of genital, anal/rectal, oral and non-genital swabs. The performance of the assay was evaluated at the Victorian Infectious Diseases Reference Laboratory (Victoria, Australia) and compared to reference results from in-house qPCR tests (HSV-1/HSV-2/VZV/CMV multiplex and TP singleplex). TP detection was also compared to serology results.

**Results** The sensitivity/specificity of each target compared to TP detection was also Intact pee positions used (p=0.996, Kruskal Wallis Test; mean (SD) in mL: standing position 10.21 (0.34), forward sitting position 10.00 (0.86), backward sitting position 10.34 (0.55)). From 50 Belgian participants, 20% of the volunteers mentioned that they did not use the instructions to assemble the Colli-Pee and 92% would recommend the Colli-Pee to others. Furthermore, all returned boxes with a urine sample were intact upon arrival.

**Conclusion** The next-generation Colli-Pee was wellaccepted and offers a solution for home-based collection.

**Disclosure** No significant relationships.

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**HUMAN FACTORS ENGINEERING TO DRIVE THE DEVELOPMENT OF A NEXT GENERATION COLLI-PEE HOME-BASED FIRST-VOID URINE COLLECTION**

1Joke Donné, 2Xoen Beyers, 2Judith Utinga, 1Alejandra Rios-Cortes, 1Ronald Van Den Bosch, 2Nette Meers, 1Quinten Van Avondt, 1Tine Provinciael, 2Laura Hochstenbach, 2Paulette Wauben, 2Claire Huizens, 2Bianca Ceccarella, 2Katherine Nielsen, 2Vanessa Vanekerckhoven*, 1Novosanis N.V., 1Wijnegem, Belgium; 2Happy Aging, Diepenbeek, Belgium; 2EIZT, Heleen, Netherlands; 4Novosanis N.V. CEO, 1Wijnegem, Belgium

**Background** The first-void urine (first 20 ml of the urine flow) is being used for the detection of sexually transmitted infections (STIs), in particular for the detection of (1) *Chlamydia trachomatis*, (2) *Neisseria gonorrhoeae*, (3) *Mycoplasma genitalium*, and (4) *Trichomonas*.

**Methods** Co-creation sessions by living labs Happy Aging (BE) and EIZT (NL) were organized with 20 volunteers to score four 3D-printed designs. Additionally, at home-based testing allowed assessment of the usability of the new generation Colli-Pee in 120 healthy volunteers; 60 in BE and 60 in NL. Volunteers provided feedback via an online questionnaire on the ease of use, the process of an online urine self-test: from requesting and receiving the Colli-Pee urine collection system to the collection of urine to the returning of the sample by postal mail. The returned samples were checked for leakage and collected volume; as well as return conditions.

**Results** The prototype with a flexible funnel scored best for time of sampling (8.3), user-friendliness (8.3), and choice of material (8.6). The first results from 38 Belgian participants showed no difference between collected volume for the different pee positions used (p=0.996, Kruskal Wallis Test; mean (SD) in mL: standing position 10.21 (0.34), forward sitting position 10.00 (0.86), backward sitting position 10.34 (0.55)).

**Conclusion** The next-generation Colli-Pee was well-accepted and offers a solution for home-based collection.

**Disclosure** No significant relationships.

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**P854**

**INTERSPECIES CHIMERAS: A TOOL TO IDENTIFY CHLAMYDIAL VIRULENCE FACTORS**

1Mark Fernandez*, 2Robert Suchland, 2Kevin Hybiske. 1University of Washington, Global Health, Seattle, USA; 2University of Washington, Seattle, USA

**Background** *Chlamydia trachomatis* is an obligate intracellular bacterium and is the most common notifiable infection in the United States. It spreads in its entire developmental cycle in a membrane bound cytosolic vacuole termed the inclusion, which protects it from otherwise deleterious host innate immune responses. Interferon gamma (IFNγ) plays a critical role in the clearance of *Chlamydia in vitro* and *in vivo*, at least in part by inducing cell-autonomous immunity in infected epithelial cells. *Chlamydia muridarum*, a rodent pathogen with high genomic synteny to *C. trachomatis*, is completely susceptible to human cell-autonomous immunity in infected epithelial cells. *Chlamydia muridarum*, a rodent pathogen with high genomic synteny to *C. trachomatis*, is completely susceptible to human cell-autonomous immunity in infected epithelial cells. *Chlamydia muridarum*, a rodent pathogen with high genomic synteny to *C. trachomatis*, is completely susceptible to human cell-autonomous immunity in infected epithelial cells.

**Methods** To identify chlamydial genes that may be involved, we have taken advantage of a previously generated library of interspecies chimeras, each of which has a genome that is predominately *C. trachomatis* serovar L2 with discrete regions of *C. muridarum* genes recombined in (range = 12–113 recombed genes in each individual chimera). We have used these chimeras in an initial screen looking for ubiquitin recruitment to inclusion membranes—an established marker of cell-autonomous immunity recognition.

**Results** We have identified four chimeras that are ubiquitinated following IFNγ stimulation. These four have zones of recombination overlapping with one another, providing us with 11 candidate genes.

**Conclusion** This outcome highlights the utility of our chimera library, especially when used to identify genetic factors underlying phenotypes for which *C. trachomatis* and *C. muridarum* are disparate. Future characterization of the candidate genes in this screen will identify chlamydial virulence factors that aid in immune evasion of IFNγ-induced host responses, and may inform design of future vaccines.

**Disclosure** No significant relationships.